



**The IP&E
Specialist**

Defense, Aerospace & Space

TTI, Inc., – A Berkshire Hathaway Company



The IP&E Specialist

The Specialist in Electronics Component Distribution

Founded in 1971, TTI has steadily grown to become a world leading specialist distributor of electronic components. The company was founded on the premise that passive component purchasing could be made more efficient by offering product specialization, customer-driven service and proprietary supply chain solutions.

Why TTI?

- **Technical Experts** TTI's European team of field-based Sales Engineers and local Product and Technical Specialists are here to support you; from understanding component trends, sustainable sourceability and new product roadmaps, to in depth technical support for your design from our technical engineering experts.

- **Value Added Services** Connector assembly is one of the most important value-added services at TTI, Inc. – Europe. We are specialized in distributing manufacturer controlled and certified connectors and interconnect solutions from globally leading suppliers. Thanks to a large inventory level of connector components, TTI, Inc. – Europe can serve any market requirements.

- **Global Distribution Centers** Our European headquarters is located just outside of Munich, Germany in Maisach-Gernlinden. In total, we have 45.000m² of dedicated warehouse space and local sales and technical support in over 40 locations across Europe. TTI has more than 195.000m² of automated warehousing in North America, Europe and Asia. All are linked into a global warehouse management system that provides superior customer service and overall business efficiencies. Wherever you are in the world, TTI can support you. Year after year, customers rate our inventory availability, on-time delivery and accuracy among the very best in the industry – contact us today to find out what a true specialist has to offer.

- **Quality and Reliability** TTI's global warehouses are all ISO-registered and have received certification to the ISO 9001 and ISO 14001 Standards. TTI Europe is also certified to EN9120/EN9100, IECQ-CECC and ISO/IEC 27001 Standards. Additionally, our European sales branches are ISO 9001 certified. TTI has one global documentation system that ensures that every TTI branch and warehouse in the world follows the same processes.





80+
Suppliers



45.000 m²
Warehousing Space



One of the largest Autostore systems in Europe



40
Sales Locations

24/7
Available to Order Online



www.ttieurope.com



The IP&E Specialist

TTI distributes premier electronic component brands around the globe. Our DAS Line Card includes all of our suppliers, brand products and product families.

3M Interconnect Solutions

A
Abracon
Amphenol
 ACS
 Aerospace
 Amphenol Advanced Sensors
 Amphenol CIT
 Tri-Star
 AirLB
 Alden
 ALL SENSORS
 Anytek
 Assembletech
 Audio
 Australia
 Auxel
 Canada
 CDI
 Conec
 Connex
 Elcab
 FEP
 Fiber Optics
 FTG
 FZE
 i2s
 India
 Industrial
 Limited
 Lütze
 LTW
 Martec
 Matrix
 Nexus
 NovaSensor
 PCD
 Piher Sensing Systems
 Positronic
 RF
 SGX SENSORTECH
 Sincere
 Sine
 Socapex
 Spectra Strip
 SSI Technologies
 SV Microwave
 TELAire
 Teradyne Connection (TCS)
 TFC
 Times Microwave
 Thermometrics Ltd
 Tuchel
 Wilcoxon
Apem

API Delevan
Aptiv
 HellemanTyton
B
Bourns
C
CTS
 Tusonix
D
Dialight
E
EATON
 Bussmann
 Coltronics
 Souriau-Sunbank
G
Glenair
Gowanda InRcore
 InRcore
 Vanguard
H
Harting
Harwin
Honeywell
I
ITT Cannon
J
JAE
K
Knowles
 Capacitor
 CDE (Cornell Dubilier)
 Syfer
 DLI
 Novacap
 Voltronics
KOA
KYOCERA AVX
 AB Electronics
 ATC
 Elco
L
Laird
Littelfuse
 C&K
 Littelfuse Automotive
 Raychem
 US Sensor
 Western Automation
M
Molex
 Airborn

Murata
N
Nexans
O
OHMITE
P
Panasonic Industry
Panduit
Phoenix Contact
PRECI-DIP
R
Radiall
Rosenberger
S
Samtec
Schurter
Sensata
 Airpax
 Klixon
Smiths Interconnect
 Hypertac
Spectrum Control
Standex-Meder
T
TDK
TE Connectivity
 AGASTAT ALCOSWITCH
 AMP
 AMP NETCONNECT
 AST
 AUGAT
 AXICOM
 BetaTHERM
 CII Technologies
 Corcom
 Deutsch
 ELCON
 Entrelec
 ERNI
 First Sensor
 HARTMANN
 HTS
 Intercontec
 Jaquet
 KILOVAC
 Kissling
 MADISON CABLE
 Measurement Specialties Inc
 MICRODOT
 NANONICS
 OEG
 Polamco
 Potter & Brumfield

Raychem
 Schaffner
 SCHRACK
 SMI
 SSI
 TE Sensors
Teledyne Relays
TT Electronics
 IRC
 Semelab
 Welwyn
V
Vishay
 Angstrohm
 BC components
 Beyschlag
 Cera-Mite
 Dale
 Draloric
 Electro-Films
 Huntington/Milwaukee
 MCB
 Roederstein
 Semiconductors
 General Semiconductors
 Sfernice
 Siliconix
 Spectrol
 Sprague
 Techno
 Thin Film
 Vitramon
Vishay Precision Group
Y
Yageo
 Ferroxcube
 Kemet
 Nexensos
 Phycomp
 Pulse Electronics
 Telemecanique Sensors
 X-Semi
 Yageo
 Vitrohm

Connectors

Automotive & Transportation Connectors

| | 3M | Amphenol | EATON (Souriau-Sunbank) | Harwing | Harwin | HellermannTyton | ITT CANNON | JAE | Kyocera AVX | Molex | Panduit | Phoenix Contact | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity |
|--|----|----------|-------------------------|---------|--------|-----------------|------------|-----|-------------|-------|---------|-----------------|---------|-------------|--------|---------------------|-----------------|
| Airbag Connectors | | | | | | | | | | | | | | | | | |
| Automotive Ethernet | | | | | | | | | | | | | | | | | |
| Automotive PCB Headers | | | | | | | | | | | | | | | | | |
| Board-to-Board | | | | | | | | | | | | | | | | | |
| Circular – Metal | | | | | | | | | | | | | | | | | |
| Circular – Sealed | | | | | | | | | | | | | | | | | |
| Circular – Unsealed | | | | | | | | | | | | | | | | | |
| Contacts | | | | | | | | | | | | | | | | | |
| Data Connectivity - Differential - HSD / H-MTD | | | | | | | | | | | | | | | | | |
| Data Connectivity - RF – Coax/Microwave | | | | | | | | | | | | | | | | | |
| Data Connectivity - RF – FAKRA/HSD/Mini-Fakra | | | | | | | | | | | | | | | | | |
| EV/HEV – High Power | | | | | | | | | | | | | | | | | |
| EV/HEV - Auxiliary Connectors | | | | | | | | | | | | | | | | | |
| EV/HEV – 48V Connectors | | | | | | | | | | | | | | | | | |
| EV/HEV - Charging Couplers | | | | | | | | | | | | | | | | | |
| EV/HEV - AC Vehicle Inlets | | | | | | | | | | | | | | | | | |
| EV/HEV - DC Vehicle Inlets | | | | | | | | | | | | | | | | | |
| Fibre Optic Products | | | | | | | | | | | | | | | | | |
| FFC/FPC Connectors | | | | | | | | | | | | | | | | | |
| Fuse/Lamp Holders | | | | | | | | | | | | | | | | | |
| Input/Output | | | | | | | | | | | | | | | | | |
| ISO – Agricultural/Trailer Connectors | | | | | | | | | | | | | | | | | |
| Multimedia/Convenience Port | | | | | | | | | | | | | | | | | |
| Memory Card | | | | | | | | | | | | | | | | | |
| Modular Blocks | | | | | | | | | | | | | | | | | |
| Rail – High Reliability Power | | | | | | | | | | | | | | | | | |
| Rail – Signal Connectors | | | | | | | | | | | | | | | | | |
| Relay Holders | | | | | | | | | | | | | | | | | |
| Rectangular – Heavy-Duty | | | | | | | | | | | | | | | | | |
| Rectangular – Sealed | | | | | | | | | | | | | | | | | |
| Rectangular – Unsealed | | | | | | | | | | | | | | | | | |
| Sensor Interconnects | | | | | | | | | | | | | | | | | |
| Solderless Terminals | | | | | | | | | | | | | | | | | |
| Terminal Blocks | | | | | | | | | | | | | | | | | |
| Tooling | | | | | | | | | | | | | | | | | |
| Wire & Cable | | | | | | | | | | | | | | | | | |
| Wire Management – Fixing & Identification | | | | | | | | | | | | | | | | | |
| Wire-to-Board | | | | | | | | | | | | | | | | | |
| Wire-to-Wire | | | | | | | | | | | | | | | | | |
| Construction & Mining | | | | | | | | | | | | | | | | | |
| Electric & Fuel Cell Vehicles | | | | | | | | | | | | | | | | | |
| Marine | | | | | | | | | | | | | | | | | |
| Military/Aerospace | | | | | | | | | | | | | | | | | |
| Recreational Vehicles | | | | | | | | | | | | | | | | | |
| Rail/Mass Transit | | | | | | | | | | | | | | | | | |

Backplane, Board-To-Board & Device-To-Board

| | 3M | Amphenol | EATON (Souriau-Sunbank) | Harwing | Harwin | ITT Cannon | JAE | Kyocera AVX | Molex | Panduit | Phoenix Contact | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity | |
|------------------------|----|----------|-------------------------|---------|--------|------------|-----|-------------|-------|---------|-----------------|---------|-------------|--------|---------------------|-----------------|--|
| Backplane | | | | | | | | | | | | | | | | | |
| 10 Gb/s+ Solutions | | | | | | | | | | | | | | | | | |
| 2.00mm | | | | | | | | | | | | | | | | | |
| Assemblies (Backplane) | | | | | | | | | | | | | | | | | |
| ATCA/MicroTCA | | | | | | | | | | | | | | | | | |
| Cable Assemblies | | | | | | | | | | | | | | | | | |
| Card Edge | | | | | | | | | | | | | | | | | |
| Compact PCI | | | | | | | | | | | | | | | | | |
| DIN 41612 (Eurocard) | | | | | | | | | | | | | | | | | |
| Fiber Optic | | | | | | | | | | | | | | | | | |
| Future Bus | | | | | | | | | | | | | | | | | |
| Hard Metric | | | | | | | | | | | | | | | | | |
| PCI Express | | | | | | | | | | | | | | | | | |
| Power | | | | | | | | | | | | | | | | | |
| RF/Ganged RF | | | | | | | | | | | | | | | | | |
| SCA-2 | | | | | | | | | | | | | | | | | |
| Board-to-Board | | | | | | | | | | | | | | | | | |
| Ball Grid Array (BGA) | | | | | | | | | | | | | | | | | |
| Battery Connectors | | | | | | | | | | | | | | | | | |
| Board Stacking | | | | | | | | | | | | | | | | | |
| Breakaway Headers | | | | | | | | | | | | | | | | | |
| Compression | | | | | | | | | | | | | | | | | |
| Headers & Receptacles | | | | | | | | | | | | | | | | | |
| Mezzanine/FPC | | | | | | | | | | | | | | | | | |
| Power | | | | | | | | | | | | | | | | | |
| SCSI | | | | | | | | | | | | | | | | | |
| Shunts | | | | | | | | | | | | | | | | | |
| Stacking | | | | | | | | | | | | | | | | | |
| Device-to-Board | | | | | | | | | | | | | | | | | |
| DIMM | | | | | | | | | | | | | | | | | |
| DIP | | | | | | | | | | | | | | | | | |
| PCMCIA | | | | | | | | | | | | | | | | | |
| PGA | | | | | | | | | | | | | | | | | |
| PLCC | | | | | | | | | | | | | | | | | |
| RIMM/DIMM/SIMM | | | | | | | | | | | | | | | | | |
| SIP | | | | | | | | | | | | | | | | | |
| SO DIMM & RIMM | | | | | | | | | | | | | | | | | |
| Test/Burn-In Sockets | | | | | | | | | | | | | | | | | |
| Transistor | | | | | | | | | | | | | | | | | |

Cable & Wire/Management

| | 3M | Amphenol | EATON (Souriau-Sunbank) | Harwing | HellermannTyton | JAE | Kyocera AVX | Molex | Nexans | Panduit | Phoenix Contact | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity | |
|-------------------------------------|----|----------|-------------------------|---------|-----------------|-----|-------------|-------|--------|---------|-----------------|---------|-------------|--------|---------------------|-----------------|--|
| Cable & Wire | | | | | | | | | | | | | | | | | |
| Cable Assemblies | | | | | | | | | | | | | | | | | |
| Coaxial (RF) | | | | | | | | | | | | | | | | | |
| EV/HEV – High Power | | | | | | | | | | | | | | | | | |
| Fiber Optic | | | | | | | | | | | | | | | | | |
| Flat Flex (FFC, FPC) | | | | | | | | | | | | | | | | | |
| Flat Ribbon | | | | | | | | | | | | | | | | | |
| Modular – Flat | | | | | | | | | | | | | | | | | |
| Multiple Conductor | | | | | | | | | | | | | | | | | |
| Single Conductor (Wire) | | | | | | | | | | | | | | | | | |
| Cable & Wire Management | | | | | | | | | | | | | | | | | |
| Accessories | | | | | | | | | | | | | | | | | |
| Bushings, Grommets | | | | | | | | | | | | | | | | | |
| Cable and Cord Grips | | | | | | | | | | | | | | | | | |
| Cable Braids | | | | | | | | | | | | | | | | | |
| Cable Ties | | | | | | | | | | | | | | | | | |
| Clamps and Clips | | | | | | | | | | | | | | | | | |
| Cold Shrink Tape, Tubing | | | | | | | | | | | | | | | | | |
| Heat Shrink Boots and Tubing | | | | | | | | | | | | | | | | | |
| Identification – Labels and Markers | | | | | | | | | | | | | | | | | |
| Solid Tubing and Sleeving | | | | | | | | | | | | | | | | | |
| Spiral Wrap and Expandable Sleeving | | | | | | | | | | | | | | | | | |
| Splice Enclosures and Protection | | | | | | | | | | | | | | | | | |

Connectors

| Input/Output | 3M | Amphenol | EATON (Souriau-Sunbank) | Glennair | ITT Cannon | Harting | Harwin | JAE | Kyocera AVX | Molex | Phoenix Contact | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity | Yageo PULSE |
|------------------------------|----|----------|-------------------------|----------|------------|---------|--------|-----|-------------|-------|-----------------|---------|-------------|--------|---------------------|-----------------|-------------|
| 1394 & 1394b | ■ | ■ | ■ | | | | | | | | | | | | | | |
| Audio | | ■ | ■ | | ■ | | | | | | | | | | | | |
| Audio ¼" Phone | | ■ | | | | | | | | | | | | | | | |
| Audio 3.5mm PCB | | ■ | | | | | | | | | | | | | | | |
| Audio BNC 75ohm | | ■ | | | | | | | | | | | | | | ■ | |
| Audio XLR | | | | | ■ | | | | | | | | | | | | |
| Audio MP Multipin | | ■ | | | | | | | | | | | | | | | |
| Camera Link/Mini Camera Link | ■ | | | | | | | | | | | | | | | | |
| Circular | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Combo I/O | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Display Port | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| D-Subminiature | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| DVI | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Fiber Channel | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Fiber Optic | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Filtered I/O | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| HDMI/Micro HDMI | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Ipass (Mini SAS) | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| InfiniBand® | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| M12/M12D/M8 | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Micro D | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Mini DIN/Circular DIN | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Mini D-Subminiature | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Mobile Systems | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Modular Plugs & Jacks | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| PCI Express | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Power | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Push/Pull | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Rectangular | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| RF/Coax/Microwave | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| RJ/Industrial Ethernet | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| SATA/SAS/Mini SATA | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| SCSI | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| SFP/XFP | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| TDP | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| USB/Mini USB/USB OTG | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

| Military & Avionics Specifications | Amphenol | EATON (Souriau-Sunbank) | Glennair | Harting | ITT Cannon | Smiths Interconnect | TE Connectivity |
|------------------------------------|----------|-------------------------|----------|---------|------------|---------------------|-----------------|
| EN2997/ESC | | ■ | | | | | ■ |
| EN3645 | ■ | ■ | | | | | ■ |
| EN4165 | ■ | ■ | | | | | ■ |
| HE301 | ■ | ■ | | | | | ■ |
| HE308 | ■ | ■ | | | | | ■ |
| MIL-22992 | ■ | ■ | | | | | ■ |
| MIL-DTL-26482 Series 1 Crimp | ■ | ■ | | | | | ■ |
| MIL-DTL-26482 Series 1 Solder | ■ | ■ | | | | | ■ |
| MIL-DTL-26482 Series 2 | ■ | ■ | | | | | ■ |
| MIL-DTL-27599 Solder | ■ | ■ | | | | | ■ |
| MIL-DTL-28840 Shipboard | ■ | ■ | | ■ | | | ■ |
| MIL-DTL-38999 Series I & II | ■ | ■ | | | | | ■ |
| MIL-DTL-38999 Series III | ■ | ■ | | | | | ■ |
| AS50151 | ■ | ■ | ■ | | | | ■ |
| MIL-DTL-55302 | ■ | ■ | | | | | ■ |
| MIL-C-81511 | ■ | ■ | | | | | ■ |
| MIL-DTL-83723 | ■ | ■ | | | | | ■ |
| Hermetics | ■ | ■ | | | | | ■ |
| VG95234 | ■ | ■ | | | | | ■ |
| VG95328 | ■ | ■ | | | | | ■ |
| VG96912 | ■ | ■ | | | | | ■ |
| VG96929 | ■ | ■ | | | | | ■ |
| MIL-DTL-12883 | ■ | ■ | | | | | ■ |
| MIL-DTL-24308 Solder 1 & 3 | ■ | ■ | | | | | ■ |
| MIL-DTL-24308 Crimp 2 & 4 | ■ | ■ | | | | | ■ |
| MIL-DTL-24308 PC Tail 23 & 24 | ■ | ■ | | | | | ■ |
| MIL-DTL-26500 | ■ | ■ | | | | | ■ |
| MIL-DTL-29504 | ■ | ■ | | | | | ■ |
| MIL-DTL-38999 Series IV | ■ | ■ | | | | | ■ |
| MIL-DTL-39012 | ■ | ■ | | | | | ■ |
| MIL-DTL-55339 | ■ | ■ | | | | | ■ |
| MIL-DTL-83513 | ■ | ■ | | | | | ■ |
| AS81511 | ■ | ■ | | | | | ■ |
| AS81714 | ■ | ■ | | | | | ■ |

| Military Connectors & Accessories | Amphenol | EATON (Souriau-Sunbank) | Glennair | ITT Cannon | Harting | HeilermannTyton | Molex | Panduit | Preci-Dip | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity |
|-----------------------------------|----------|-------------------------|----------|------------|---------|-----------------|-------|---------|-----------|---------|-------------|--------|---------------------|-----------------|
| Backshells & Accessories | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Coax/RF | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Contacts | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| D-Subminiature | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Discrete Sockets | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Filtered Audio Connector | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Micro D | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Rack & Panel | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Sealed Plugs | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Microwave | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Terminal Blocks | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Terminals | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Tools | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |

Connectors

| RF/Coaxial/ Microwave | 3M | Amphenol | EATON (Souriau-Sunbank) | ITT Cannon | JAE | Kyocera AVX | Molex | Radiall | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity |
|------------------------------|----|----------|-------------------------|------------|-----|-------------|-------|---------|-------------|--------|---------------------|-----------------|
| 1.0/2.3 | | | | | | | | | | | | |
| 1.6/5.6 | | | | | | | | | | | | |
| 7/16 | | | | | | | | | | | | |
| BMA | | | | | | | | | | | | |
| BNC (50/75Ω) | | | | | | | | | | | | |
| BNC (Miniature) | | | | | | | | | | | | |
| B to B Blindmate/Compression | | | | | | | | | | | | |
| BSA | | | | | | | | | | | | |
| FAKRA | | | | | | | | | | | | |
| MCX/MMCX | | | | | | | | | | | | |
| MHV/SHV | | | | | | | | | | | | |
| Precision1 | | | | | | | | | | | | |
| QMA | | | | | | | | | | | | |
| Reverse Polarity2 | | | | | | | | | | | | |
| Shielded Terminators | | | | | | | | | | | | |
| SMA | | | | | | | | | | | | |
| SMB (50/75Ω) | | | | | | | | | | | | |
| SMB (Miniature) | | | | | | | | | | | | |
| SMC | | | | | | | | | | | | |
| SMP | | | | | | | | | | | | |
| SMT | | | | | | | | | | | | |
| SSMA | | | | | | | | | | | | |
| TNC | | | | | | | | | | | | |
| Triax | | | | | | | | | | | | |
| Twinax | | | | | | | | | | | | |
| Type F/G | | | | | | | | | | | | |
| Type N | | | | | | | | | | | | |
| UHF/MiniUHF | | | | | | | | | | | | |

| Speciality Connectors | 3M | Amphenol | EATON (Souriau-Sunbank) | Glenair | ITT Cannon | Harwin | HellermannTyton | JAE | Molex | Kyocera AVX | Phoenix Contact | Rosenberger | Samtec | Smiths Interconnect | TE Connectivity |
|--------------------------|----|----------|-------------------------|---------|------------|--------|-----------------|-----|-------|-------------|-----------------|-------------|--------|---------------------|-----------------|
| Automotive | | | | | | | | | | | | | | | |
| Battery | | | | | | | | | | | | | | | |
| COTS | | | | | | | | | | | | | | | |
| EMI Shielded | | | | | | | | | | | | | | | |
| Filtered | | | | | | | | | | | | | | | |
| Harsh Environment | | | | | | | | | | | | | | | |
| Hermetic | | | | | | | | | | | | | | | |
| High Voltage | | | | | | | | | | | | | | | |
| Industrial | | | | | | | | | | | | | | | |
| LED Connector | | | | | | | | | | | | | | | |
| Micro Miniature/Nano | | | | | | | | | | | | | | | |
| Motor Connectors | | | | | | | | | | | | | | | |
| Solar | | | | | | | | | | | | | | | |

| Terminal Blocks | Amphenol | EATON (Souriau-Sunbank) | Harwin | Molex | Phoenix Contact | TE Connectivity |
|-----------------------------|----------|-------------------------|--------|-------|-----------------|-----------------|
| Barrier Strips | | | | | | |
| Europa | | | | | | |
| Eurostyle – Fixed/Pluggable | | | | | | |
| 2.54mm | | | | | | |
| 3.50mm | | | | | | |
| 3.81mm | | | | | | |
| 5.00mm | | | | | | |
| 5.08mm | | | | | | |
| Filtered | | | | | | |
| Interface Modules | | | | | | |
| Phenolic | | | | | | |
| Rail Mounted | | | | | | |
| Screw Terminal | | | | | | |
| Spring Clamp | | | | | | |

| Wire & Board Management/ Accessories | 3M | Amphenol | EATON (Souriau-Sunbank) | Glenair | ITT Cannon | Harwin | HellermannTyton | JAE | Molex | Kyocera AVX | Panduit | Phoenix Contact | Preci-Dip | Samtec | TE Connectivity |
|--|----|----------|-------------------------|---------|------------|--------|-----------------|-----|-------|-------------|---------|-----------------|-----------|--------|-----------------|
| Backshells | | | | | | | | | | | | | | | |
| Cable Clips | | | | | | | | | | | | | | | |
| Cable Management | | | | | | | | | | | | | | | |
| Cable Marker Ties | | | | | | | | | | | | | | | |
| Cable Mounts | | | | | | | | | | | | | | | |
| Cable Spacers | | | | | | | | | | | | | | | |
| Cable Terminals | | | | | | | | | | | | | | | |
| Cable Ties | | | | | | | | | | | | | | | |
| Heat Shrink Products | | | | | | | | | | | | | | | |
| Jumper Links | | | | | | | | | | | | | | | |
| Labelling Systems | | | | | | | | | | | | | | | |
| Labels | | | | | | | | | | | | | | | |
| PCB Spacers | | | | | | | | | | | | | | | |
| PCB Terminals | | | | | | | | | | | | | | | |
| Printers/Software and Ribbons | | | | | | | | | | | | | | | |
| RFI Clips & Spring Fingers | | | | | | | | | | | | | | | |
| Shorting Links | | | | | | | | | | | | | | | |
| Solderless Terminals | | | | | | | | | | | | | | | |
| Splices | | | | | | | | | | | | | | | |
| Stainless Steel Accessories | | | | | | | | | | | | | | | |
| Test Points | | | | | | | | | | | | | | | |
| Tooling | | | | | | | | | | | | | | | |
| Wire & Cable | | | | | | | | | | | | | | | |

| Wire-To-Board/ Wire-To-Wire | 3M | Amphenol | EATON (Souriau-Sunbank) | Glenair | Harwin | Harwin | JAE | Kyocera AVX | Molex | Phoenix Contact | Samtec | Smiths Interconnect | TE Connectivity |
|--------------------------------|----|----------|-------------------------|---------|--------|--------|-----|-------------|-------|-----------------|--------|---------------------|-----------------|
| 1.25mm | | | | | | | | | | | | | |
| 1.27mm | | | | | | | | | | | | | |
| 2.00mm | | | | | | | | | | | | | |
| 2.50mm | | | | | | | | | | | | | |
| 2.54mm | | | | | | | | | | | | | |
| 3.00mm | | | | | | | | | | | | | |
| 3.96mm | | | | | | | | | | | | | |
| 4.00mm | | | | | | | | | | | | | |
| 4.20mm | | | | | | | | | | | | | |
| 5.00mm | | | | | | | | | | | | | |
| 5.03mm | | | | | | | | | | | | | |
| 5.08mm | | | | | | | | | | | | | |
| 6.35mm | | | | | | | | | | | | | |
| 7.50mm | | | | | | | | | | | | | |
| 9.00mm | | | | | | | | | | | | | |
| 10.00mm | | | | | | | | | | | | | |
| Bus Bar | | | | | | | | | | | | | |
| Cable Assemblies | | | | | | | | | | | | | |
| Discrete Wire | | | | | | | | | | | | | |
| FFC/FPC | | | | | | | | | | | | | |
| IDC Discrete Wire | | | | | | | | | | | | | |
| IDC/Mass Termination | | | | | | | | | | | | | |
| Mini D Ribbon/Champ | | | | | | | | | | | | | |
| Power | | | | | | | | | | | | | |
| SATA/SAS/Mini SATA | | | | | | | | | | | | | |
| SCSI I, II, III | | | | | | | | | | | | | |

Relays & Circuit Breakers

| | IDEC | Littelfuse | Phoenix Contact | Radiall | Standex Meder | Sensata - Crydom, Cynergy 3 | Sensata - Gigavac | TE Connectivity - Kilovac, Cli, Kissling | Teledyne | Vishay |
|-----------------------------|------|------------|-----------------|---------|---------------|-----------------------------|-------------------|--|----------|--------|
| Relays | | | | | | | | | | |
| Automotive | | ■ | | | ■ | | ■ | ■ | | |
| Communication | | ■ | | | ■ | | ■ | ■ | | |
| Contactors/ Electrification | | | | | | | ■ | ■ | | |
| Control | ■ | | | | | | | ■ | ■ | |
| Counters | | | | | | | | | | |
| Crystal Can (Military) | | | | | | | | ■ | ■ | |
| Definite Purpose Contactors | | | | | | | ■ | | | |
| DIN Rail Mounted | ■ | | ■ | | | ■ | | ■ | ■ | |
| Force Guided Contact | ■ | | | | | | | ■ | | |
| General Purpose | ■ | | | | | | | ■ | | |
| High Frequency Relays | | | | ■ | ■ | | | ■ | ■ | |
| High Voltage | | ■ | | | ■ | ■ | ■ | ■ | ■ | |
| Industrial DC & AC | ■ | | | | | | | ■ | ■ | |
| Input/Output Modules | | | | | | | | ■ | | |
| Magnetic Latching | | | | | | | | ■ | ■ | |
| Microwave | | | | | ■ | | | ■ | ■ | |
| Military/Space | | | | | | | | ■ | ■ | |
| Miniature PCB | | | | | | ■ | | ■ | ■ | |
| MOSFET/PhotoMOSTM | | ■ | | | | | | ■ | ■ | ■ |
| Panel/Plug-In | ■ | | ■ | | | | | ■ | | |
| Power | ■ | ■ | | | | | | ■ | ■ | |
| Pre-Charge Relays | | | | | | | | ■ | ■ | |
| Reed | | | ■ | | | | | ■ | ■ | |
| Safety | ■ | | | | | | | ■ | | |
| Signal | | ■ | | | ■ | | | ■ | ■ | |
| Sockets | | ■ | | | | | | ■ | ■ | |
| Solid State Relays | ■ | ■ | ■ | | | | | ■ | ■ | |
| Time Relays | ■ | ■ | ■ | | | | | ■ | | |
| Circuit Breakers | | | | | | | | | | |
| Magnetic Circuit Breakers | | | ■ | | | | | ■ | | |
| Thermal Circuit Breakers | | | ■ | | | | | ■ | | |

Switches

| | APEM/IDEC/MEC | Amphenol - Piher | C&K | Honeywell | Littelfuse | Schurter | Standex Meder | TE Connectivity | Teledyne |
|----------------------------|---------------|------------------|-----|-----------|------------|----------|---------------|-----------------|----------|
| ATEX | | | | | | | | | |
| Counters/Hour Meters | | | | | | | | | |
| DIP | ■ | | ■ | | | | | ■ | |
| DIP Coded Rotary | | | | ■ | | | | | |
| Emergency Stop/Safety | ■ | | | | ■ | | | | |
| Encoder | | | | | ■ | | | | |
| Fader/Potentiometer | | ■ | | | | | | | |
| Limit - Heavy Duty | | | | | ■ | | | | |
| Joystick | ■ | | | ■ | | | | | |
| Keylock/Switchlock | ■ | | ■ | ■ | ■ | | | ■ | |
| Microswitch/Snap Action | ■ | | ■ | | | | | | |
| Mil/Aero/Space Grade Level | ■ | | ■ | ■ | | | | | ■ |
| Miniature Detection | | | ■ | | | | | | |
| Navigation Switches | | | ■ | | | | | | |
| Off-Road - Special Purpose | ■ | | | | ■ | | | | |
| Piezo Switch | ■ | | | | | | ■ | | |
| Pushbutton | | | ■ | ■ | | | ■ | ■ | |
| Pushwheel/Thumbwheel | ■ | | ■ | | | | | ■ | |
| Reed | | | | | ■ | | | ■ | |
| Rocker | ■ | | ■ | ■ | ■ | | | ■ | |
| Rotary | | | | | | ■ | | ■ | |
| Slide | ■ | | ■ | | | | | ■ | |
| Tactile | ■ | | ■ | | | | | ■ | |
| Toggle/Paddle | ■ | | ■ | | | | | ■ | |

Passives – Capacitors



| Aluminium | Cornell Dubilier | Eaton (Cooper Bussmann) | Kyocera AVX | Murata | Panasonic Industry | Vishay (BC components) | Yageo KEMET |
|------------------------|------------------|-------------------------|-------------|--------|--------------------|------------------------|-------------|
| AC Motor Start | ■ | | | | | | |
| Axial Electrolytic | ■ | | | | | | |
| EDLC/Supercapacitor | | ■ | ■ | | | | |
| FlatPack Electrolytics | ■ | | | | | | |
| Polymer | ■ | | | ■ | ■ | | |
| Radial Miniature | ■ | | | | | | |
| Screw Terminal | ■ | | | | | | |
| Snap-In | | | ■ | | | | |
| Surface Mount | ■ | | ■ | | ■ | | |
| High Rel | ■ | | | | | | |

| Ceramic | Cornell Dubilier | Knowles (Syfer) | Kyocera AVX | Murata | Tusonix | Vishay | BCcomponents | Ceramite | Vitramon | Yageo KEMET | Yageo YAGEO |
|------------------|------------------|-----------------|-------------|--------|---------|--------|--------------|----------|----------|-------------|-------------|
| Arrays | | | | | | | | | | | |
| Dip 2-Pin | | ■ | ■ | ■ | | | | | | | |
| Disc | ■ | | | | | | | | | | |
| High Cap | | ■ | ■ | ■ | | | | | | | |
| High Q | | ■ | ■ | ■ | | | | | | | |
| High Temperature | | ■ | ■ | ■ | | | | | | | |
| High Voltage | ■ | | | | | | | | | | |
| Low Inductance | | | | | | | | | | | |
| Multi-Layer | | ■ | ■ | ■ | | | | | | | |
| RF/Microwave | | ■ | ■ | ■ | | | | | | | |
| Safety | | ■ | ■ | ■ | | | | | | | |
| Silicon | | | | ■ | | | | | | | |
| Single Layer | | | ■ | | | | | | | | |
| Switch Mode | | ■ | ■ | ■ | | | | | | | |
| Tip 'n' Ring | | ■ | ■ | ■ | | | | | | | |
| Trimmer | | | | ■ | | | | | | | |
| High Rel | ■ | ■ | | | | | | | | | |

| Film & Mica | BCcomponents | Cornell Dubilier | Draloric | Kyocera AVX | Panasonic Industry | Vishay | Roederstein | Yageo KEMET |
|------------------------------|--------------|------------------|----------|-------------|--------------------|--------|-------------|-------------|
| High Rel | | ■ | | | | | | |
| Film | | | | | | | | |
| Motor Run | | ■ | | | | | | |
| Polyester | | ■ | | | | | | |
| Polypropylene | | ■ | | | | | | |
| Power Film | | ■ | | | | | | |
| Snubber | | ■ | | | | | | |
| Suppression X-Y (Safety Cap) | | ■ | | | | | | |
| Surface Mount | | ■ | | | | | | |
| Mica | | | | | | | | |
| Metal Clad | | ■ | | | | | | |
| Mica | | ■ | | | | | | |
| Surface Mount | | ■ | | | | | | |

| Tantalum | Cornell Dubilier | Kyocera AVX | Vishay | Sprague | Tansitor | Yageo KEMET |
|-------------------------------|------------------|-------------|--------|---------|----------|-------------|
| Micro-Chip | | ■ | ■ | ■ | | ■ |
| Conformal Coated Chip | | | ■ | ■ | | ■ |
| Dipped Radial | ■ | | | | | |
| Fail Safe/Fused Chip | | ■ | ■ | ■ | | ■ |
| Hermetic Through Hole | ■ | | | | | |
| High Temperature Chip | | ■ | ■ | ■ | | ■ |
| Low ESR Chip | | ■ | ■ | ■ | | ■ |
| Low Profile Chip | | ■ | ■ | ■ | | ■ |
| Molded Chip | | ■ | ■ | ■ | | ■ |
| Molded Through Hole | ■ | | | | | |
| Niobium Chip | | ■ | ■ | ■ | | ■ |
| Polymer Chip | | | | | | |
| Solid Metal Case Through Hole | ■ | | | | | |
| Supertan | | | ■ | ■ | | ■ |
| Wet Through Hole | | ■ | ■ | ■ | | ■ |
| High Rel | | ■ | ■ | ■ | | ■ |

Passives – Resistors

| Film | Angstrom | BCcomponents | BI Technologies | Dale | Electro-Films | Huntington/Milwaukee | IRC | KOA | OHMITE | Panasonic Industry | TE Connectivity | Techno | Thin Film | TT Electronics | Vishay | Vishay Precision Group | Welwyn | Sternice/MCB | Yageo | YAGEO |
|-------------------|----------|--------------|-----------------|------|---------------|----------------------|-----|-----|--------|--------------------|-----------------|--------|-----------|----------------|--------|------------------------|--------|--------------|-------|-------|
| Chip Array | | | | | | | | | | | | | | | | | | | | |
| Discrete Chip | | | | | | | | | | | | | | | | | | | | |
| Flame Proof | | | | | | | | | | | | | | | | | | | | |
| Fusible | | | | | | | | | | | | | | | | | | | | |
| High Temp | | | | | | | | | | | | | | | | | | | | |
| High Voltage | | | | | | | | | | | | | | | | | | | | |
| Matched Sets | | | | | | | | | | | | | | | | | | | | |
| Melf /Cylindrical | | | | | | | | | | | | | | | | | | | | |
| Metal Film | | | | | | | | | | | | | | | | | | | | |
| Metal Glaze | | | | | | | | | | | | | | | | | | | | |
| Metal Oxide | | | | | | | | | | | | | | | | | | | | |
| Precision | | | | | | | | | | | | | | | | | | | | |
| Thick Film Chip | | | | | | | | | | | | | | | | | | | | |
| Thin Film Chip | | | | | | | | | | | | | | | | | | | | |
| Trimmable | | | | | | | | | | | | | | | | | | | | |
| Voltage Divider | | | | | | | | | | | | | | | | | | | | |
| High Rel | | | | | | | | | | | | | | | | | | | | |

| Network | BI Technologies | Dale | Electro-Films | Huntington/Milwaukee | IRC | KOA | Panasonic Industry | TE Connectivity | Techno | Thin Film | TT Electronics | Vishay | Vishay Precision Group | Welwyn | Yageo | YAGEO |
|--------------------|-----------------|------|---------------|----------------------|-----|-----|--------------------|-----------------|--------|-----------|----------------|--------|------------------------|--------|-------|-------|
| Array | | | | | | | | | | | | | | | | |
| Conformal Coated | | | | | | | | | | | | | | | | |
| Custom | | | | | | | | | | | | | | | | |
| Integrated Passive | | | | | | | | | | | | | | | | |
| Ladder | | | | | | | | | | | | | | | | |
| Line Protection | | | | | | | | | | | | | | | | |
| Molded | | | | | | | | | | | | | | | | |
| Resistor/Capacitor | | | | | | | | | | | | | | | | |
| SMT | | | | | | | | | | | | | | | | |
| Surge | | | | | | | | | | | | | | | | |
| Thick Film DIP | | | | | | | | | | | | | | | | |
| Thick Film SIP | | | | | | | | | | | | | | | | |
| Thin Film DIP | | | | | | | | | | | | | | | | |
| Thin Film SIP | | | | | | | | | | | | | | | | |
| High Rel | | | | | | | | | | | | | | | | |

| Potentiometers/ Trimmers | BCcomponents | Dale | Honeywell | Knowles (Syfer) | KOA | Murata | OHMITE | Panasonic Industry | Sternice/ MCB | Spectrol | TE Connectivity | TT Electronics (BI Tech) | Tusconix | Vishay | Vishay Precision Group |
|--------------------------|--------------|------|-----------|-----------------|-----|--------|--------|--------------------|---------------|----------|-----------------|--------------------------|----------|--------|------------------------|
| High Rel | | | | | | | | | | | | | | | |
| Trimming Potentiometers | | | | | | | | | | | | | | | |
| Adjustment Tools | | | | | | | | | | | | | | | |
| Carbon | | | | | | | | | | | | | | | |
| Cermet | | | | | | | | | | | | | | | |
| Counters | | | | | | | | | | | | | | | |
| Dials/Knobs | | | | | | | | | | | | | | | |
| Multi-Turn | | | | | | | | | | | | | | | |
| Open Frame | | | | | | | | | | | | | | | |
| Open Frame Slide | | | | | | | | | | | | | | | |
| Sealed Frame | | | | | | | | | | | | | | | |
| Single-Turn | | | | | | | | | | | | | | | |
| Wirewound | | | | | | | | | | | | | | | |
| Precision Panel Control | | | | | | | | | | | | | | | |
| Carbon | | | | | | | | | | | | | | | |
| Cermet | | | | | | | | | | | | | | | |
| Conductive Plastic | | | | | | | | | | | | | | | |
| Knobs | | | | | | | | | | | | | | | |
| Hybrid | | | | | | | | | | | | | | | |
| Linear | | | | | | | | | | | | | | | |
| Metal Foil | | | | | | | | | | | | | | | |
| Modular | | | | | | | | | | | | | | | |
| Motor Pot | | | | | | | | | | | | | | | |
| Multi-Turn | | | | | | | | | | | | | | | |
| Non-Linear | | | | | | | | | | | | | | | |
| Rheostat | | | | | | | | | | | | | | | |
| Rotary | | | | | | | | | | | | | | | |
| Sealed Frame | | | | | | | | | | | | | | | |
| Single-Turn | | | | | | | | | | | | | | | |
| Wirewound | | | | | | | | | | | | | | | |
| Sensor/Encoder | | | | | | | | | | | | | | | |
| Attenuator | | | | | | | | | | | | | | | |
| Encoders | | | | | | | | | | | | | | | |
| Linear Motion | | | | | | | | | | | | | | | |
| Rotary | | | | | | | | | | | | | | | |

| Power/ Wirewound/ Carbon & Foil | BI Technologies | Dale | Huntington/Milwaukee | IRC | KOA | Kyocera AVX | OHMITE | Sternice/ MCB | TE Connectivity | Thin Film | TT Electronics | Vishay | Vishay Precision Group | Welwyn | Yageo | YAGEO |
|---------------------------------|-----------------|------|----------------------|-----|-----|-------------|--------|---------------|-----------------|-----------|----------------|--------|------------------------|--------|-------|-------|
| High Rel | | | | | | | | | | | | | | | | |
| Power/Wirewound | | | | | | | | | | | | | | | | |
| Brackets/Hardware | | | | | | | | | | | | | | | | |
| Ceramic Composition | | | | | | | | | | | | | | | | |
| Commercial | | | | | | | | | | | | | | | | |
| Current Sense/Low Resistance | | | | | | | | | | | | | | | | |
| Industrial | | | | | | | | | | | | | | | | |
| Precision | | | | | | | | | | | | | | | | |
| Rheostat | | | | | | | | | | | | | | | | |
| Special Purpose | | | | | | | | | | | | | | | | |
| Tubular | | | | | | | | | | | | | | | | |
| Vitreous Enamel | | | | | | | | | | | | | | | | |
| Carbon | | | | | | | | | | | | | | | | |
| Carbon Composition | | | | | | | | | | | | | | | | |
| Carbon Film | | | | | | | | | | | | | | | | |
| Foil | | | | | | | | | | | | | | | | |
| Bulk Metal Foil | | | | | | | | | | | | | | | | |

Circuit Protection & Electromagnetics

Protection Devices

| | BC Components | Dale | EATON | EPCOS | KOA | Kyocera AVX | Littelfuse | Murata | Panasonic Industry | Schurter | Vishay | Yageo YAGEO |
|---------------------------------------|---------------|------|-------|-------|-----|-------------|------------|--------|--------------------|----------|--------|-------------|
| Overcurrent | | | | | | | | | | | | |
| Axial (PICO) Fuses | | | | | | | | | | | | |
| Automotive (Blade) Fuses | | | | | | | | | | | | |
| Automotive HV (Passive Active) Fuses | | | | | | | | | | | | |
| Cartridge Fuses | | | | | | | | | | | | |
| High Voltage Fuses | | | | | | | | | | | | |
| NTC Thermistors | | | | | | | | | | | | |
| Power (Electrical) Fuses | | | | | | | | | | | | |
| PTC Thermistors | | | | | | | | | | | | |
| Radial Leaded Resettable Fuses (PPTC) | | | | | | | | | | | | |
| Radial Subminiature Fuses | | | | | | | | | | | | |
| SMT Resettable Fuses (PPTC) | | | | | | | | | | | | |
| Surface Mount (125V+) Fuses | | | | | | | | | | | | |
| Telecom Resettable Fuses (PPTC) | | | | | | | | | | | | |
| Thermal Cutoffs (TCO) | | | | | | | | | | | | |
| Thin Film (Chip) Fuses | | | | | | | | | | | | |
| Over Voltage | | | | | | | | | | | | |
| Gas Discharge Tube (GDT) | | | | | | | | | | | | |
| Line Protection Networks | | | | | | | | | | | | |
| Polymer ESD Suppression | | | | | | | | | | | | |
| Protection Thyristors | | | | | | | | | | | | |
| Surface Mount Varistors (MLV) | | | | | | | | | | | | |
| Thermal (MOV) | | | | | | | | | | | | |
| Through-Hole Varistors (MOV) | | | | | | | | | | | | |
| TVS Diodes | | | | | | | | | | | | |
| TVS Diodes Arrays | | | | | | | | | | | | |

EMI/RFI & RF

| | Abrakon | Amphenol | EPCOS | Kyocera AVX | Molex | Murata | Panasonic Industry | Schaffner | Schurter | TE Connectivity | Tusonix (CTS) | Yageo KEMET | Yageo PULSE |
|-----------------------|---------|----------|-------|-------------|-------|--------|--------------------|-----------|----------|-----------------|---------------|-------------|-------------|
| EMI/RFI Filters | | | | | | | | | | | | | |
| Feed-Thru Filters | | | | | | | | | | | | | |
| RF/Microwave Filters | | | | | | | | | | | | | |
| SAW Filters | | | | | | | | | | | | | |
| Surface Mount Filters | | | | | | | | | | | | | |
| RF/Wireless Antennas | | | | | | | | | | | | | |

Frequency Control

| | Abrakon | Kyocera AVX | Murata | Vishay (Dale) |
|---------------------|---------|-------------|--------|---------------|
| Crystals | | | | |
| Oscillators | | | | |
| Piezo Sound Devices | | | | |
| Resonators | | | | |
| Tuning Forks | | | | |

Ferrites/ Inductors/ Transformers

| | Abrakon | Eaton (Coiltronics) | EPCOS | Gowanda | INRCORE | KOA | Kyocera AVX | Laird | Murata | Panasonic Industry | Schaffner | Schurter | TT Electronics (BI Tech) | Vishay | Yageo KEMET | Yageo PULSE | Yageo YAGEO |
|-----------------------------|---------|---------------------|-------|---------|---------|-----|-------------|-------|--------|--------------------|-----------|----------|--------------------------|--------|-------------|-------------|-------------|
| Air Coil Inductors | | | | | | | | | | | | | | | | | |
| Common Mode Chokes | | | | | | | | | | | | | | | | | |
| Custom Inductors | | | | | | | | | | | | | | | | | |
| Ferrite Beads | | | | | | | | | | | | | | | | | |
| Ferrite Cores/Clamp Filters | | | | | | | | | | | | | | | | | |
| High Current Inductors | | | | | | | | | | | | | | | | | |
| Leaded Inductors | | | | | | | | | | | | | | | | | |
| Military Inductors | | | | | | | | | | | | | | | | | |
| Multilayer Inductors | | | | | | | | | | | | | | | | | |
| Power Inductors | | | | | | | | | | | | | | | | | |
| RF Inductors | | | | | | | | | | | | | | | | | |
| Thin Film Inductors | | | | | | | | | | | | | | | | | |
| Toroid Inductors | | | | | | | | | | | | | | | | | |
| Transformers | | | | | | | | | | | | | | | | | |
| Wirewound/Coil Inductors | | | | | | | | | | | | | | | | | |

Sound Devices

| | Kyocera AVX | Murata |
|------------|-------------|--------|
| Buzzer | | |
| Microphone | | |
| Receiver | | |
| Ringer | | |
| Sensor | | |
| Sounder | | |
| Speaker | | |

Design Tools

| | Dialight | Littelfuse | TT Electronics | Vishay |
|--|----------|------------|----------------|--------|
| Evaluation and Demo Tools | | | | |
| IC – Buck Converter Evaluation Board | | | | ■ |
| IC – Simulation Software | | | | ■ |
| BOM Crossing | | ■ | ■ | ■ |
| LED Demo Boards | | | | ■ |
| Ambient Light Sensor Evaluation Board | | | | ■ |
| Mid Range Ambient Light & Proximity Evaluation Board | | | | ■ |
| Short Range Ambient Light & Proximity Evaluation Board | | | | ■ |
| UV-A+B Sensor Evaluation Board | | | | ■ |
| RGBW Sensor Evaluation Board | | | | ■ |
| NPI – Samples ex stock TTI | ■ | ■ | ■ | ■ |

Diodes & Power Modules

| | Bourns | Eaton | Kyocera AVX | Littelfuse | TDK | TT Electronics | Vishay | Yageo YAGEO |
|-----------------------|--------|-------|-------------|------------|-----|----------------|--------|-------------|
| Protection | | | | | | | | |
| Arrays | | | | | | | | |
| ESD | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| HiRel TVS | | | | | | | | |
| TVS | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| TVS Diodes Arrays | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Zener | | | | | | | | |
| Standard | | | | | | | | |
| Arrays | ■ | | | | | | | |
| PIN Diodes | | | | | | | | |
| Schottky | | | | | | | | |
| Small Signal | ■ | | | | | | | |
| Switching | | | | | | | | |
| Rectifiers | | | | | | | | |
| Bridge | ■ | | | | | | | |
| Standard | ■ | | | | | | | |
| Fast | ■ | | | | | | | |
| Ultrafast | ■ | | | | | | | |
| Schottky | ■ | | | | | | | |
| Silicon Carbide | ■ | | | | | | | |
| Dice Solutions | | | | | | | | |
| Rectifiers | | | | | | | | |
| High Voltage Diodes | | | | | | | | |
| Schottky Diodes | | | | | | | | |
| TVS Diodes | | | | | | | | |
| Thyristors | | | | | | | | |
| Modules | | | | | | | | |
| Bridge | | | | | | | | |
| Diode | | | | | | | | |
| IGBT | | | | | | | | |
| Thyristor | | | | | | | | |
| MOSFET | | | | | | | | |
| Silicon Carbide | | | | | | | | |

Transistors and Thyristors

| | Littelfuse | TT Electronics | Vishay | Yageo XSEMI |
|-----------------------------|------------|----------------|--------|-------------|
| Standard Transistors | | | | |
| Bipolar | | | | |
| Small Signal | | | | |
| MOSFETs | | | | |
| Low Voltage | | | | |
| Medium Voltage | ■ | ■ | ■ | ■ |
| High Voltage | ■ | ■ | ■ | ■ |
| JFET | | | | |
| Automotive Qualified | | | | |
| Mil Qualified | | | | |
| Power Transistors | | | | |
| Silicon Carbide | ■ | ■ | ■ | ■ |
| IGBTs Discrete | ■ | ■ | ■ | ■ |
| IEBTs Discrete | | | | |
| Thyristors | | | | |
| Protection | ■ | ■ | ■ | ■ |
| Switching | ■ | ■ | ■ | ■ |
| Sidac | | | | |
| SCR | ■ | ■ | ■ | ■ |
| Triac | ■ | ■ | ■ | ■ |

Opto Electronic

| | APDM | Dialight | Littelfuse | TT Electronics | Vishay |
|--|------|----------|------------|----------------|--------|
| Visible LEDs | | | | | |
| High Power LEDs | | | | | |
| Standard LEDs – SMD | | ■ | | | |
| Standard LEDs – SideView SMD | | ■ | | | |
| Standard LEDs – Reverse Mount SMD | | ■ | | | |
| Standard LEDs – Through Hole 1.8/3/5mm | | ■ | | | |
| LEDs –Bicolor | | ■ | | | |
| LEDs –RGB | | ■ | | | |
| Visible LED Solutions | | | | | |
| Circuit Board Indicator SMD | | ■ | | | |
| Circuit Board Indicator Through Hole | | ■ | | | |
| Panel Mount Indicators SMD | ■ | ■ | | | |
| Panel Mount Indicators | | ■ | | | |
| Infrared Emitter | | | | | |
| Infrared Emitters | | | | | |
| Infrared Emitters – High Power | | | | | |
| UV Solutions | | | | | |
| UV-A LED | | | | | |
| UV-B LED | | | | | |
| UV-C LED | | | | | |
| Optical Detectors and Sensors | | | | | |
| Ambient Light & Proximity Sensors | | | | | |
| Ambient Light Sensors | | | | | |
| Biometrical Sensor | | | | | |
| Fibre Optic | | | | | |
| Hall Effect | | | | | |
| Infrared/Human Presence Detection | | | | | |
| Photo Diodes | | | | | |
| Photo IC | | | | | |
| Photo Transistors | | | | | |
| Proximity Sensors | | | | | |
| Reflective Sensor | | | | | |
| RGBW Sensors | | | | | |
| Slotted Switches | | | | | |
| Transmissive Sensor | | | | | |
| Infrared Communication | | | | | |
| Infrared Receiver Modules | | | | | |
| IRDC Components | | | | | |
| Dice Solutions | | | | | |
| IR Emitters | | | | | |
| Photo Detectors | | | | | |
| Optocoupler Solution | | | | | |
| Opto Couplers/Isolators | | | | | |
| Non-linear Opto Couplers | | | | | |
| Phototransistor Output | | | | | |
| Photodarlington Output | | | | | |
| Optocoupler with AC Input | | | | | |
| Linear | | | | | |
| Phototriac Output | | | | | |
| High Speed | | | | | |
| IGBT & MOSFET Driver | | | | | |
| Isolated IPM Driver | | | | | |
| Solid State Relays | | | | | |
| Analog Switches | | | | | |
| ICs | | | | | |
| LED Driver | | | | | |
| Light Pipes and Accessories | | | | | |
| LED Holder | | | | | |
| LED Clips | | ■ | | | |
| Light Pipes | | ■ | | | |
| Lenses | | ■ | | | |
| Modules and Displays | | | | | |
| Display Modules | | | | | |
| LCD Displays | | | | | |
| LED Displays | | | | | |
| OLED Displays | | | | | |
| Plasma Displays | | | | | |
| 7-Segment Displays | | | | | |
| LED Dot Matrix Displays | | | | | |
| LED Modules | | | | | |

Integrated Circuits

| | Littelfuse | TT Electronics | Vishay |
|--|------------|----------------|--------|
| Integrated Circuits | | | |
| LED Driver | ■ | | |
| Logic Ics | | | |
| Low Drop Out Regulators (LDO) | | | |
| Analog Switch | | | |
| DC/DC Converter | | | |
| Non-Isolated DC-DC Switching Regulators | | | |
| Voltage Regulator | | | |
| Power Stage Integrated Driver plus MOSFETs | | | |
| Smart Load Switches | | | |
| Slew Rate Control | | | |
| Current Limit | | | |
| True Bi-Directional | | | |



Sensors

| | AlpsAlpine | Amphenol / All Sensors | Amphenol / Amphenol Advanced Sensors | Amphenol / i2s | Amphenol / Novasensor | Amphenol / Pher Sensing Systems | Amphenol / SGX Sensortech | Amphenol / SSI Technologies | Amphenol / Telaire | Amphenol / Thermometrics | Amphenol / Wilcoxon | Bourns | Eaton | Honeywell (Sensing and Safety Technologies, City Technology) | Kyocera AVX | Littelfuse (Western Automation) | Molex / Contrinex | Murata | Omron | Panasonic Industry | Sensata Technologies (Crydom, Cynergy3, Airpax, BEI Sensors, Klixon, Sendyne) | TDK | TE Sensors (MEAS, First Sensor, SMI, Jaquet, AST) | TT Electronics | Vishay | Yageo Nexensos | Yageo Telemecanique Sensors | |
|--|------------|------------------------|--------------------------------------|----------------|-----------------------|---------------------------------|---------------------------|-----------------------------|--------------------|--------------------------|---------------------|--------|-------|--|-------------|---------------------------------|-------------------|--------|-------|--------------------|---|-----|---|----------------|--------|----------------|-----------------------------|--|
| Pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Board Mount Pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disposable Medical Pressure Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dies | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Altimeter/Barometric | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Combination MEMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Packaged Pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pressure Switches | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Force | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Force | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Cell/Load Pin | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Torque | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flow | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air Flow | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Liquid Flow | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Flow Switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluid Property Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turbidity | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Motion, Speed & Position | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accelerometer | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gyroscope | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inclinometer/Tilt | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shock/Vibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inertial Measurement Unit | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Encoder/Rotary – Board Mount | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Encoder/Rotary – Industrial/Transportation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Face Recognition Sensors (HVC – Human Vision Component) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proximity – Inductive | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proximity – MagnetoResistive/ Hall Effect | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proximity – Reed Switches | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proximity – Optical | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Speed Sensor | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GeoMagnetic Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resolver | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ultrasonic | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Air Quality & Gas Sensing | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CO2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VOC (COV) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Industrial Gas – Pellistor, InfraRed, Electro-Chemical, MEMS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dust/Particle | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ionizer | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Medical Gas Sensors (O2) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pulse Oximetry SpO2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature & Humidity | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Combination MEMS, Digital Temperature Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humidity | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NTC Thermistor – Leaded | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NTC Thermistor – SMT | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Probes & Assemblies | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PTC Thermistors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RTD/PTC Thermistors – Customised – Platinum | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PTC Thermistors – Customised – Ceramic Heating | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heaters – Copper Customised | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermocouples | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermopiles/Human Presence Detection – Solutions | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermopiles/Human Presence Detection – Component | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thermostats | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Sensors, RF/Wireless Modules and Antennas

Sensors

| | AlpsAlpine | Amphenol / All Sensors | Amphenol / Amphenol Advanced Sensors | Amphenol / iS | Amphenol / Novasensor | Amphenol / Piher Sensing Systems | Amphenol / SGX Sensortech | Amphenol / SSI Technologies | Amphenol / Telaire | Amphenol / Thermometrics | Amphenol / Wilcoxon | Bourns | Eaton | Honeywell (Sensing and Safety Technologies, City Technology) | Kyocera AVX | Littelfuse | Molex / Conrinex | Murata | Omron | Panasonic Industry | Sensata Technologies (Crydom, Cynergy3, Airpax, BEI Sensors, Klixon, Sendyne) | TDK | TE Sensors (Measurement Specialties, First Sensor, SMI, Jaquet, AST) | TT Electronics | Vishay | Yageo KEMET | Yageo Nexensos | Yageo Telemecanique Sensors |
|---|------------|------------------------|--------------------------------------|---------------|-----------------------|----------------------------------|---------------------------|-----------------------------|--------------------|--------------------------|---------------------|--------|-------|--|-------------|------------|------------------|--------|-------|--------------------|---|-----|--|----------------|--------|-------------|----------------|-----------------------------|
| Optical | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ambient Light | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fibre Optic | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PIR /Infrared | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Matrix Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Laser | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Proximity – Optical | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solar | | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time Of Flight (TOF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ultra Violet | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Colour Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Level Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Liquid Level | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Urea, Water (WIF/ WIF+WDS/WS), Diesel | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Powder Level Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydra-static Pressure Cells | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sensor Modules | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Current Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitive Touch | | ■ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inductive Sensors – Factory Automation/Transportation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Insulation Monitoring | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Light Curtain Safety – Factory Automation | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Magnets | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Medical Sensor Cable Assemblies/Pulse Oximetry | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sensor Development Boards | | ■ | ■ | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage Sensors | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Wireless Modules

| | Murata | Panasonic Industry | Taoglas | TE (Linx Technology, Laird Connectivity) |
|-------------------------|--------|--------------------|---------|--|
| Wireless Modules | | | | |
| Bluetooth | ■ | ■ | | |
| Cellular | | | | |
| GNSS | | | ■ | ■ |
| LoRa | ■ | | | |
| Sub-GHz Transceivers | | | | ■ |
| UWB | ■ | ■ | | |
| Wi-Fi | ■ | ■ | | |
| Zigbee/Thread/Matter | ■ | ■ | | |

Antennas

| | Abrakon | Amphenol MCP | JAE | Kyocera AVX | Molex | Panasonic Industry | Radiall | Taoglas | TE (Linx Technology, Laird Connectivity) | Yageo PULSE |
|---|---------|--------------|-----|-------------|-------|--------------------|---------|---------|--|-------------|
| Embedded (ceramic/helix/stamp metal) | | | | | | | | | | |
| NFC | | | | | | | | | | |
| 169 MHz | | | | | | | | | | |
| 433 MHz | | | | | | | | | | |
| LoRa, Sigfox, ISM (868/915 MHz) | | | | | | | | | | |
| NB-IoT | | | | | | | | | | |
| GPS/GNSS | | | | | | | | | | |
| 2G/3G/4G/5G | | | | | | | | | | |
| WiFi/BT/Zigbee (2.4/5 GHz) | | | | | | | | | | |
| V2V/V2X/DSRC | | | | | | | | | | |
| UWB | | | | | | | | | | |
| Internal (Cabled PCB/Flex) | | | | | | | | | | |
| NFC | | | | | | | | | | |
| 433 MHz | | | | | | | | | | |
| LoRa, Sigfox, ISM (868/915 MHz) | | | | | | | | | | |
| NB-IoT | | | | | | | | | | |
| GPS/GNSS | | | | | | | | | | |
| 2G/3G/4G/5G | | | | | | | | | | |
| WiFi/BT/Zigbee (2.4/5 GHz) | | | | | | | | | | |
| V2V/V2X/DSRC | | | | | | | | | | |
| UWB | | | | | | | | | | |
| External | | | | | | | | | | |
| AM/FM/DAB | | | | | | | | | | |
| 169 MHz | | | | | | | | | | |
| TETRA | | | | | | | | | | |
| 433 MHz | | | | | | | | | | |
| LoRa, Sigfox, ISM (868/915 MHz) | | | | | | | | | | |
| NB-IoT | | | | | | | | | | |
| GPS/GNSS | | | | | | | | | | |
| 2G/3G/4G/5G | | | | | | | | | | |
| WiFi/BT/Zigbee (2.4/5 GHz) | | | | | | | | | | |
| V2V/V2X/DSRC | | | | | | | | | | |
| Combination antenna | | | | | | | | | | |

Power Supplies

| Power Supplies | Advanced Energy (Artesyn, Excelsys, SL Power, UltraVoi) | APEM / IDEC | Callex | Flex Power Modules | MEAN WELL | Murata | OmniOn Power | Omron Industrial Automation | Phoenix Contact | TDK | Vishay | Yageo PULSE |
|---|---|-------------|--------|--------------------|-----------|--------|--------------|-----------------------------|-----------------|-----|--------|-------------|
| Internal/Embedded - AC/DC | | | | | | | | | | | | |
| Low to Mid Power (1W – 500W) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| High Power (500W – 4kW) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Very High Power (>4kW) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | |
| Single Output | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Multi-Output (Dual, Triple, Quad) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| PCB Mount | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Open Frame | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| U-Channel/Enclosed | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Modular/Configurable | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| ATX | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Front End, Bulk Power | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Medical Rated | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Conduction Cooled | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Industrial Temperature | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Extended Temperature | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Digital interface | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Power Over Ethernet (PoE) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| AC/DC Military | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| External - AC/DC | | | | | | | | | | | | |
| Wall Mount Adapters | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Wall Mount USB-PD | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Desktop | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Medical Rated | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DIN Rail | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DIN Rail Redundancy Modules | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DIN Rail Buffer Modules | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| High Power (>1kW) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| LED Drivers | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| KNX products | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Laboratory Power Supplies Programmable | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Specific Purpose | | | | | | | | | | | | |
| Uninterruptible Power Supply (UPS) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Battery Charging | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Bi-Directional | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Inverter (DC/AC) | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Inrush Current Limiters | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Security | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| PFC Modules | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DC/DC | | | | | | | | | | | | |
| Isolated DC/DC Converters | | | | | | | | | | | | |
| Fractional Brick | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Digital Control | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Industrial Pin-Out | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DIN Rail | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Intermediate Bus Converter | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Low Power Unregulated | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Wide Input Range 4:1 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Surface Mount | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DC/DC Military | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DC/DC Railway | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| DC/DC Filters and Filter Modules | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Non Isolated POL Converters | | | | | | | | | | | | |
| Digital Control | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Through Hole | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Single In Line | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Surface Mount | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Auxiliary DC Power Products | | | | | | | | | | | | |
| ATCA PIM Modules | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| RF / Power Amplifier | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| High Voltage | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Embedded DC/DC | | | | | | | | | | | | |
| Open Frame/Enclosed | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Front End Bulk Power | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |
| Bi-Directional DC/DC into Aux DC Power products | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | |

Accessories

| Accessories | 3M | Laird | MEAN WELL | Ohmite | Omron | Schurter | TDK | TE Connectivity (Corcom, Schaffner) | Yageo KEMET |
|-----------------------------------|----|-------|-----------|--------|-------|----------|-----|-------------------------------------|-------------|
| Power Line EMI/RFI Filters | | | | | | | | | |
| Single-Phase Filters | | | | | | | | | |
| 3-Phase Filters | | | | | | | | | |
| Thermal Management | | | | | | | | | |
| DC Fans | | | | | | | | | |
| AC Fans | | | | | | | | | |
| Heatsinks | | | | | | | | | |
| Thermal Materials | | | | | | | | | |
| Thermal Adhesive/Compounds | | | | | | | | | |
| Wire/Cable | | | | | | | | | |
| Power Cord | | | | | | | | | |
| Smart Connector | | | | | | | | | |

Supplier Disclaimers for Defence, Aerospace & Space applications

These suppliers regulate the use of their products, always check the suppliers current disclaimer for suitability before using or designing in.



Defense, Aerospace & Space

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The IP&E Specialist

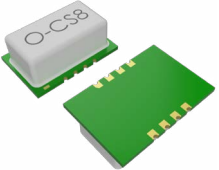

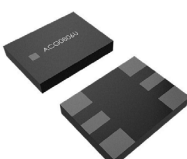
The defense market places very specific demands on its supply base, not only in the high performance of the components used, but also on the supply chain and logistics solutions. TTI is the only European specialist distributor to have a focused European Defense Business Unit. In establishing this position as a market leader, TTI has combined a franchise portfolio that comprises of the major manufacturers plus key specialist lines, a broad & deep inventory offering of Mil Spec, ESA and COTS products, dedicated sales & support teams, plus comprehensive business systems that have the ability to manage the demands of strategic multinational customers.

TTI was the first distributor to be ISO 9001:2008 & EN/AS9100 registered within their US and European operations. In addition, TTI Europe is also IECQ Registered to manage CECC product demands.

Discover the latest innovations from top suppliers at TTI Europe, Inc. - your trusted partner in shaping the future of Defence, Aerospace & Space technology.

Abracon



| Description & Product | Features & Benefits | Applications |
|---|--|---|
| Ultra-Low Phase Noise, High Frequency OCXOs | | |
|  <p>O-CS8 Series Ultra Low Phase Noise, Precision SC-cut HF OCXO in SMD Package</p> | <ul style="list-style-type: none"> • 100MHz output • 21 x 14mm SMD Package • Low profile height of 7.5mm • 5V or 3.3V • Stabilities down to ± 50ppb • Sinewave or CMOS output | <ul style="list-style-type: none"> • Radar • Instrumentation • High end synthesizer • Telecommunication systems • Data communications • Test & measurement |
| Ultra High-Power Molded Inductors | | |
|  <p>ASPIAIG-Q Series AEC-Q200 Qualified Molded SMD Power Inductors</p> | <ul style="list-style-type: none"> • 9 package sizes available • Optimized to be the highest current handling power inductor • Tin-Lead (Sn/Pb) finish on leads available upon request • Rugged package • Magnetic shielding | <ul style="list-style-type: none"> • High current power supplies and POL converters • Motor control for transportation vehicles and projectiles • DC/DC converter in distributed power systems |
| Ultra-Wide Band (UWB) Chip Antennas | | |
|  <p>UWB Chip Antennas High-Efficiency UWB antennas with low power consumption</p> | <ul style="list-style-type: none"> • The low power consumption requirements of Abracon's Ultra-Wide Band (UWB) antennas result in increased battery life. Our products are designed for the next generation connectivity with fast and reliable data transmission. Abracon's Single Antenna solution covers all relative frequency bands. | <ul style="list-style-type: none"> • UWB (Ultra-Wide Band) • IoT • M2M • Secure Car Access • Item Tracking • Object Detection |

Amphenol Socapex

| Product | Series & Description | Features & Benefits | Applications |
|--|---|--|---|
| RJF & RJF TV Cat5e, Cat6, Cat6A, Rugged Ethernet RJ45 connectors for harsh environments | | | |
|  | RJF & RJF TV Cat5e, Cat6, Cat6A, Rugged Ethernet RJ45 connectors for harsh environments. | <ul style="list-style-type: none"> • RJF & RJFTV, ethernet Cat5e, Cat6, Cat6A connection using standard RJ45 • RJF for Bayonet coupling and RJFTV for Tri Strat Thread coupling • No cabling operation in field and no tools required Sealed against fluids and dusts (IP68) • Shock, vibration and traction resistant • Mechanical coding/polarization (4 positions) | <ul style="list-style-type: none"> • Battlefield communication, C4ISR • Ground vehicles • Commercial aerospace • Military avionics • Rail mass transit |
| MIL-DTL-38999 series and derivatives | | | |
|  | Military connectors with highest performance and widest range for general duty and harsh environments. Available at TTI VAD | <ul style="list-style-type: none"> • Aluminium plated shells (Cadmium, Black Zinc Nickel, Tin Zinc), Composite plated shells (Cadmium, Nickel), Bronze, Stainless steel • 9 shell sizes & more than 60 layouts • 38999 series III derivative options available: • Reduced Flange: Weight / space saving • PC tails and stand-off: Soldering and fixing on PCB • Integrated Backshell: All in One product | <ul style="list-style-type: none"> • Battlefield Communication • Ground vehicles • Military avionics • Advanced industrial applications |
| RNJ Rack & Panel connectors | | | |
|  | Rack & Panel Blind Mate connector for harsh environments. Standard versions available with TTI's VAD | <ul style="list-style-type: none"> • 8 shell sizes, using MIL-DTL-38999 series inserts arrangements • Axial, angular and longitudinal realignment • 38999 derivative options available too: • Reduced Flange • PCB tails and stand-off • Power and high speed • Low profile | <ul style="list-style-type: none"> • Battlefield Communication • Ground vehicles • Military avionics • Advanced industrial applications |
| PT/451 Series | | | |
|  | In accordance to MIL-DTL-26282 Series I Available with TTI VAD | <ul style="list-style-type: none"> • Bayonet coupling connectors • 9 shell sizes and 4 codings • 3 contact types: solder, PCB and crimp • Wide range of backshells • Aluminium (cadmium, nickel and black zinc nickel) • Operating temperature: -55°C to +125°C | <ul style="list-style-type: none"> • Industrial • Transportation • Automation • Ground vehicle • Battlefield communication systems |
| 75 Ohms Coaxial Contacts | | | |
|  | HD 75 Ohms coaxial contacts for 4K Ultra HD and 12G-SDI video application | <ul style="list-style-type: none"> • Contact size 8 • Available for MIL-DTL-38999/EN3645 and SIM/EN4165 • Available in crimp and PC-Tails termination | <ul style="list-style-type: none"> • Camera • Video acquisition • Video recording • In-Flight entertainment |
| Micro HDAS | | | |
|  | High density and 1.27mm pitch PCB connectors: smaller, lighter & still as strong | <ul style="list-style-type: none"> • Robust technology designed for severe environments • Meet & Exceed MIL-DTL-55302G & 83513G requirements • High density: 1.27mm [.050] pitch 29 arrangements from 4 to 60 contacts | <ul style="list-style-type: none"> • Commercial and military aerospace • Electronic systems • Communication systems • Spatial |




| Description & Product | | Features & Benefits | Applications |
|---|--|--|--|
| 2M Micro Miniature | | | |
|  | Micro Miniature connectors with immense capabilities | <ul style="list-style-type: none"> • Miniature connectors designed for Military & Aerospace applications. • 4 series for covering all the needs: <ul style="list-style-type: none"> 2M801: Dual start thread 2M803: Bayonet 2M804: Quick Disconnect 2M805: Tri-start Thread | <ul style="list-style-type: none"> • Battlefield communication • Ground Vehicles • UAV • Missiles • Military Avionics • Soldier Worn equipment |
| PowerSafe | | | |
|  | High Power with Safety design connector, Derived from MIL-DTL-38999 series III | <ul style="list-style-type: none"> • Designed for Power application up to 500V with user safety (following EU standard EN-61984) • First mate/last break & Last mate / first break technology • VG96944 Qualified product (only 13-V4, 17-V6, 25-V6) • Several materials et platings available, with RoHS & REACH compliant versions | <ul style="list-style-type: none"> • Ground Vehicles • Military Avionics • Missiles • Navy |
| PS Series: Power Converters | | | |
|  | Ruggedized and specialized units designed to provide reliable and efficient power | <ul style="list-style-type: none"> • Power Supplies are designed to meet the stringent demands of modern warfare. • Large range of AC/DC, DC/DC and DC/AC inverters including VME standards and VITA62 Power Supplies. • Solutions designed to meet MIL-STD-461, MIL-STD-704, MIL-STD-810, MIL-STD-1275, MIL-STD-1399, RTCA DO-160 and DEF Stan 61-5 | <ul style="list-style-type: none"> • Battlefield Communication C5ISR • Ground Vehicles • Military Avionics • Navy • Space |
| PS Series: Power Distribution Units (PDU) | | | |
|  | PDU manage and distribute power across various equipment and systems | <ul style="list-style-type: none"> • Our Power Distribution Units (PDU) provide advanced load balancing, surge protection and spike protection per MIL-STD-1275C-E or MIL-STD-704A-F, and are expertly constructed to Control and diagnostic via CAN bus and/or RS-485 and/or Ethernet. | <ul style="list-style-type: none"> • Battlefield Communication C5ISR • Ground Vehicles • Military Avionics • Navy • Space |
| HDAS | | | |
|  | High performance & cost effective PCB connectors | <ul style="list-style-type: none"> • Robust technology designed for severe environments • Meet & Exceed MIL-DTL-55302G requirements <ul style="list-style-type: none"> High density: 1.905mm [.075] staggered grid 12 sizes from 11 to 253 contacts on 3, 4 or 5 rows • Hybrid configurations to mix signal, power and RF • High density: 1.905mm [.075] staggered grid 12 sizes from 11 to 253 contacts on 3, 4 or 5 rows | <ul style="list-style-type: none"> • Commercial and military aerospace • Electronic systems • Communication systems • Space |
| TVμCom and μCom 10G+ Ethernet | | | |
|  | Connector for Ethernet data transmission exceeding 10Gb | <ul style="list-style-type: none"> • This range of connectors designed to address the latest trends of the military industry: miniaturization and high speed Ethernet, with the highest resistance for use in the harshest environments | <ul style="list-style-type: none"> • Battlefield Communication • Grounded vehicles • Military avionics • Rail Mass Transit • Navy • C5ISR |

| Description & Product | Features & Benefits | Applications | |
|---|--|---|--|
| USB Type C connector | | | |
|  | <p>MIL-DTL-38999 Series III shells with embedded standard USB type C connectors</p> | <ul style="list-style-type: none"> • USB3CFTV benefit from USB type-C flexibility to design many different data, power delivery, and video configurations with all the advantages of of Military 38999 Series III connectors • USB3 Type C Reversibility • MIL-DTL-38999 series III size 11 shell • Sealed against dust and fluids: IP68 | <ul style="list-style-type: none"> • Battelfied Communication systems • Armored vehicles • Naval multi systems • Military & Commercial Avionics systems • C5ISR |
| USB3 Amplifier | | | |
|  | <p>Amplifier for USB3.2 Gen 1 data rate up to 5Gb/s for high speed USB</p> | <ul style="list-style-type: none"> • The USB3.2 Gen1 protocol is limited to 3 meters. Our USB3 FTV amplifier allows you to extend the USB3 signal to 11 meters max. Range of amplifiers from 3 meters up to 8 meters • Plug & play: Powered through USB • MIL-DTL-38999 series III size 15 shell • Sealed against dust and fluids: IP68 | <ul style="list-style-type: none"> • Battelfied Communication systems • Armored vehicles • Naval multi systems • Military & Commercial Avionics systems • C5ISR |
| TVμCom and μCom USB3 | | | |
|  | <p>Connector for USB3.2 Gen 1 data rate up to 5Gb/s for high speed USB</p> | <ul style="list-style-type: none"> • Designed to address the latest trends: miniaturization and high speed USB3, with the highest resistance against environment • This connector enables connection and disconnection while the system is running: "hot plugging" • 15 mm μCom Shell or TV μCom with size 11 38999 Series III shells | <ul style="list-style-type: none"> • C5ISR • Battlefield Communication • Ground Vehicles • Navy • Commercial Aerospace • Railway |
| HDMI connector | | | |
|  | <p>MIL-DTL-38999 Series III shells with embedded standard HDMI 2.0 connectors</p> | <ul style="list-style-type: none"> • HDMI 2.0 data transmission supports 4K UHD video at 60 Hz • This HDMI integrated into a size 17 38999 shell is ideal for use in the harshest environments. • Active Optical Cable amplifiers in development for long distance video link | <ul style="list-style-type: none"> • Battelfied video systems • Armored vehicles • Naval multi display systems • Military & Commercial Avionics systems • C5ISR |
| LuxBeam : EN4869 - Expanded Beam FO termini for standard connectors | | | |
|  | <p>Size 16 expanded beam termini for standard MIL-DTL-38999 Series III / EN3645 / EN4165 connectors</p> | <ul style="list-style-type: none"> • Per EN4869 • Expanded Optical beam (x 140) reduces the sensibility to dust & debris • Contactless FO connection • Higher robustness, low maintenance • Allows hybrid links, with FO EB termini for High Speed Signal and copper contacts for Power in the same connector | <ul style="list-style-type: none"> • Battelfied Communication systems • Armored vehicles Optronics • Naval missile launch systems • Military & Commercial Avionics systems |
| MPO Field TV: Transform a MPO/MTP patchcord into a rugged connector | | | |
|  | <p>MIL-DTL-38999 Series III shells with embedded standard MPO/ MTP High density FO connectors</p> | <ul style="list-style-type: none"> • Mixes High density of MPO/MTP (multiples of 12 FO channels) with high environmental resistance of MIL-DTL-38999 Series III shells • Easy installation, no tool required • Sealed against fluids and dust (IP68) • Shock, vibration proof • Typical Insertion Loss: 0,5dB in MM | <ul style="list-style-type: none"> • Naval data centers • Armored Vehicles embedded Networks • Battelfield Communication systems • Rail Mass transit embedded Networks |

| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|--|
| Push-button | | | |
|  | IZ series IZ series, rear mounted push-button | <ul style="list-style-type: none"> • Rear mounting for easier installation • Latching action metal models • Fixed or variable panel thickness • Sealed to IP67 • Illuminated or non-illuminated • Flat actuator for optional marking | <ul style="list-style-type: none"> • Hand control • Control panels • Remote controls • Automotive • Security and defense applications |
| Push-button | | | |
|  | IP series Illuminated or non-illuminated momentary action push-buttons for harsh environments | <ul style="list-style-type: none"> • Normally open (NO) or NC/NO combined (non-illuminated only) • Variety of terminal options • Flat round actuator for optional marking • High brightness illumination • Tin plated LED terminals • Operating temperature: -40°C to +85°C (-40°F to 185°F) | <ul style="list-style-type: none"> • Hand control • Control panels • Remote controls • Automotive • Security and defense applications |
| Push-button | | | |
|  | IX series IX series, designed for demanding markets | <ul style="list-style-type: none"> • Push-button for harsh environment • Illuminated or non-illuminated • Compact (12mm bushing) • Tactile effect • Sealing: IP67, IP69K • Marking on request | <ul style="list-style-type: none"> • Hand control • Control panels • Remote controls • Automotive • Security and defense applications |
| LED indicators | | | |
|  | QRM-NV series Night vision LED indicators | <ul style="list-style-type: none"> • NVG Compatible filters • NVIS Compliant to MIL Std 3009 • IP67 sealed to EN60529 • Rear end epoxy sealed • Black finish • Optional dress nut | <ul style="list-style-type: none"> • Control panels • Remote controls • Automotive • Battery chargers • Marine • Security and defense applications |
| Thumb joystick | | | |
|  | NV series Four or five direction switch based joystick | <ul style="list-style-type: none"> • Positive tactile feedback in all directions • Sealed to IP69K • Compact and low profile • Robust: shock, vibration and salt spray resistant • Three actuator shapes • Numerous actuator colours | <ul style="list-style-type: none"> • Hand control • Control panels • Video and communication • Vehicles |
| Heavy-duty safety switch | | | |
|  | ES Series Heavy-duty safety switch designed for heavy-duty applications | <ul style="list-style-type: none"> • Metal product with dia. 22mm bushing (market standard) • IK10 Impact resistance, no axis deformation even if exposed to major shocks • 100.000 cycle mechanical life • Lower behind-panel depth • Locked/unlocked status indicator • Straight PC or solder lug terminals | <ul style="list-style-type: none"> • Vehicles • Control panels • Communication • Interface • Safety systems |



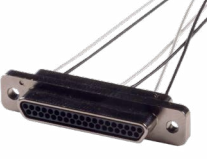
APEM



| Product | Series & Description | Features & Benefits | Applications |
|---|---|--|--|
| Security caps | | | |
|  | Cache, MSG, CSG series Prevent any inadvertent lever operation | <ul style="list-style-type: none"> Models for 2 or 3 positions switches Holes for wiring a seal optional Prevent accidental lever operation Designed for Ø11.9 or Ø12mm bushing Salt spray test: 96 hours (IEC 68-2-11) Operating temperature: -40°C to +85°C (-40°F to +185°F) | <ul style="list-style-type: none"> Hand control Control panels Remote controls Automotive Security and defense applications |
| Push-button | | | |
|  | 13000X778 series Double pole double throw alternate action push-buttons with highly reliable contacts | <ul style="list-style-type: none"> Contacts: Highly reliable contacts suitable for low level applications or power applications Double shell case for high mechanical strength and high electrical insulation Matt black finish on body, bushing, plunger and hardware Compact size: The small rear end of the switch allows space saving behind the panel Panel sealed to IP 67, these switches are frontal sealed by two O-rings and have full rear end sealing Solder lug or PC terminals | <ul style="list-style-type: none"> Vehicles Control panels Communication Interface |
| Toggle switch | | | |
|  | 12000X778 series CECC and MIL approved toggle switch | <ul style="list-style-type: none"> Shock test: 50g – 11ms (IEC 68-2-27) Vibrations: 10-500 Hz – 10g (IEC68-2-6) Operating temperature: -40°C to +85°C (-40°F to 185°F) Humidity test: 56 days, 93% R.H., 40°C (IEC 68-2-3) Salt spray test: 96 hours (IEC 68-2-11) Panel seal withstands 1 bar pressure and remains sealed even when the switch is operated | <ul style="list-style-type: none"> Vehicles Control panels Communication Interface |




C&K Littelfuse







| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|---|
| MTB1 connectors for space applications | | | |
|  | MTB1 Series High performance Microminiature connectors, ESA qualified | <ul style="list-style-type: none"> Single line strip connector Flight and engineering models available Twist pin contacts technology 2 to 50 cavities Multiple contacts termination choices Options: latching and polarization key | <ul style="list-style-type: none"> Space equipment Satellites harnesses and payloads Launchers Engineering Military and avionics |
| Space Splice Connector | | | |
|  | Space Splice One way connector for space applications | <ul style="list-style-type: none"> One way connector Using D*MA crimpable contacts technology EPPL2 product (ESA/ESCC European Preferred Part List part2) Replacement of manual splices by standard solution Supplied without contacts Non-outgassing | <ul style="list-style-type: none"> Space equipment Satellites harnesses and payloads Launchers Engineering Military and avionics |
| MDMA and MDMB connectors for space applications | | | |
|  | MDMA – MDMB Connector Series Microminiature connectors with removable crimp contacts | <ul style="list-style-type: none"> Removable crimp contacts technology Flight and Engineering models available Sizes 9, 15, 21, 25, 31, 37 and 51 Wire size AWG 24 / 25 / 26 / 28 for all sizes Harnesses length flexibility Non-outgassing | <ul style="list-style-type: none"> Space equipment Satellites harnesses and payloads Launchers Engineering Military and avionics |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|---|
| D*M connectors for space applications | | | |
|  | D*M Connector Series Connectors with solder type or wire-wrap type termination | <ul style="list-style-type: none"> • Multiple contacts termination choices • Non-outgassing • Flight and engineering models available • 6 shell sizes: E, A, B, C, D and F • Standard density: 9, 15, 25, 37, 50 contacts • High density: 15, 26, 44, 62, 78, 104 contacts | <ul style="list-style-type: none"> • Space equipment • Satellites harnesses and payloads • Launchers • Engineering • Military and avionics |
| D*BMA for Connector Savers D*M/D*MA | | | |
|  | D*M Combo Savers Series Connectors used as connector savers in test equipment applications | <ul style="list-style-type: none"> • Removable coax and power contacts • Non removable signal contact (installed in factory) • Supplied with or without power/coax contacts • Flight and engineering models available • 5 shell sizes: E, A, B, C and D • Non-outgassing | <ul style="list-style-type: none"> • Space equipment • Test equipments • Satellites harnesses and payloads • Launchers • Engineering • Military and avionics |
| NP Push-button Series | | | |
|  | NP Series Sealed industrial push-button switch | <ul style="list-style-type: none"> • Wirelead options available • 1,000,000 cycles • IP68 sealed • Multiple housing styles • Capable of up to 5A resistive load | <ul style="list-style-type: none"> • Harsh environments • Transportation • Industrial • Off-road • Military |
| PT Series for harsh environments | | | |
|  | PT Series Sealed power toggle switch | <ul style="list-style-type: none"> • IP66/IP68 versatile rating • UL 61058-1 certified • Integrated panel seal for extra protection • Superior oil and fuel resistance • High strength, heat resistant housing | <ul style="list-style-type: none"> • Off-road, construction/ agricultural vehicles • Material handling equipment • Articulating, scissor and bucket lift controls • Outdoor radio equipment • Lift gate controls |
| PBA series for avionic applications | | | |
|  | PBA Series Illuminated push-button | <ul style="list-style-type: none"> • Illuminated display • Small size • Tactile feedback | <ul style="list-style-type: none"> • Avionic • Instrument panel and overhead controls • Aircraft cockpit controls |
| MIL-S-83731 Toggle Switches | | | |
|  | MIL-S-83731 Toggle Switch Toggle switches for military and aerospace applications | <ul style="list-style-type: none"> • Qualified to MIL-S-83731 • 50µ inch selective gold contact plating • Epoxy sealed terminals for process compatibility • Rated for logic level to 5 amp resistive loads and 2 amp inductive loads • Flame retardant housing material | <ul style="list-style-type: none"> • Military • Aerospace |

Harwin

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|---|
| Datamate J-Tek and L-Tek | | | |
|  | M80 – lightweight and compact 2mm Pitch High-Reliability Signal Connectors | <ul style="list-style-type: none"> • 4-finger contact capable of 3A • Beryllium copper with gold plating • Jackscrew or latching hardware options • Shock and vibration rating – 100G for 6 minutes and 10G for 6 hours • Temperature range of -55°C to +125°C • Excellent outgassing properties | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |
| Datamate T-Contact | | | |
|  | M80 – female power contacts Increased power on a 2mm pitch | <ul style="list-style-type: none"> • 6-finger contact capable of 8.5A • Beryllium copper with heavy gold plating, 30µ” • Compatible with existing Datamate housings • Shock rating of 100G for 6 minutes • Increased vibration rating, 40G for 6 hours • Temperature range of -55°C to +125°C | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |
| Datamate Power | | | |
|  | M80 – power in a lightweight and compact package, 4mm pitch High-Reliability Connector | <ul style="list-style-type: none"> • 20A and 40A contact options • Beryllium copper with gold plating • Jackscrew security for maximum strain relief • Shock and vibration rating – 100G for 6 minutes and 10G for 6 hours • Temperature range of -55°C to +125°C • Excellent outgassing properties | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |
| Datamate Coax | | | |
|  | M80 – ganged 50Ω coax on a 4mm pitch High-Reliability Connector | <ul style="list-style-type: none"> • High-quality 50Ω, 6GHz gold plated contacts • Jackscrew security for maximum strain relief • Shock rating of 100G for 6 minutes • Vibration rating of 10G for 6 hours • Temperature range of -55°C to +125°C • Excellent outgassing properties | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |
| Datamate Metal Backshells | | | |
|  | M80 – for use with J-Tek, Power, Coax and Mix-Tek For EMI/RFI Screening | <ul style="list-style-type: none"> • Cable-to-board and panel mount options • Ensures reliability, strength and performance • Machined from aluminium alloy • Electroless nickel plating • Braid retention feature at cable entrance • Screen termination by stainless steel micro-band | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |
| Datamate Cable Assemblies | | | |
|  | M80 – lightweight and compact on a 2mm or 4mm pitch High-Reliability Connectors | <ul style="list-style-type: none"> • Fully assembled cable assemblies • Signal, power and coax configurations • 150mm single or double-ended options • 100% electrically tested and inspected • Ideal for prototyping, small builds or high volume • Designed for extreme environments | <ul style="list-style-type: none"> • Defense and security • Robotics • Avionics • Commercial space • Drives and controls • Automation |

| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|---|
| Gecko | | | |
|  | G125 – secure, robust and miniature 1.25mm pitch high-reliability signal connector | <ul style="list-style-type: none"> Up to 45% space and 75% weight savings vs Micro-D 4-finger beryllium copper contact capable of 2A Jackscrew or latching hardware options Shock and vibration rating – 100G for 6 minutes and 20G for 6 hours Temperature range of -65°C to +150°C Excellent outgassing properties | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |
| Gecko-MT | | | |
|  | G125 – secure, robust and miniature 1.25mm pitch mixed layout connector | <ul style="list-style-type: none"> Mixed current capacity of 10A and 2A per contact Beryllium copper signal contact with gold plating Jackscrew security for maximum strain relief Shock and vibration rating – 100G for 6 minutes and 20G for 6 hours Temperature range of -65°C to +150°C Excellent outgassing properties | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |
| Gecko Cable Assemblies | | | |
|  | G125 – secure and robust ready-to-use cables 1.25mm pitch high-reliability connectors | <ul style="list-style-type: none"> Fully assembled cable assemblies 150mm or 450mm single-ended 150mm or 300mm double-ended Jackscrew and latching options Ideal for prototyping, small builds or high volume Designed for extreme environments | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |
| Gecko-SL Metal Backshell | | | |
|  | G125 – lightweight shielding For EMI/RFI screening | <ul style="list-style-type: none"> Cable-to-board and panel mount options Ensures reliability, strength and performance Machined from aluminium alloy 2-piece cable backshell construction Braid retention feature at cable entrance Screen termination by stainless steel micro-band | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |
| M300 | | | |
|  | M300 – power in a lightweight and compact package 3mm pitch high-reliability power connector | <ul style="list-style-type: none"> 10A per contact (5A for 22 AWG) Beryllium copper signal contact with gold plating Jackscrew security for maximum strain relief Shock and vibration rating: 100G for 6 minutes and 10G for 6 hours Temperature range of -65°C to +175°C Excellent outgassing properties | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |
| M300 Cable Assemblies | | | |
|  | M300 – power in a lightweight and compact package 3mm pitch high-reliability power connectors | <ul style="list-style-type: none"> 10A per contact (5A for 22 AWG) Single and double row options 18, 20 and 22 AWG cables in 150mm, 300mm and 450mm Shock and vibration rating: 100G for 6 minutes and 10G for 6 hours Temperature range of -65°C to +175°C Excellent outgassing properties | <ul style="list-style-type: none"> Defense and security Robotics Avionics Commercial space Drives and controls Automation |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|--|
| GAPS – Next Generation Proximity Sensors | | | |
|  | GAPS Proximity Sensor Series RTCA DO-160 compliant, operating temperature of 115°C and EMI/EMC protection and platform selection nomenclature | <ul style="list-style-type: none"> • Integral health monitoring capability • Continuous health monitoring and value to customers hermetic sealing helps to increase revenue, reduce cost to serve and cost of goods • Industry-leading indirect lightning and dielectric ruggedness • Design eliminating mechanical failure mechanisms, reducing wear, minimizing downtime, increasing durability and increasing reliability | <ul style="list-style-type: none"> • Landing gear • Aircraft doors • Hydraulics • Primary flying surfaces • Evacuation slides • Primary flying surfaces |
| HAPS – Next Generation Proximity Sensors | | | |
|  | HAPS Proximity Sensor Series Configurable platform, RTCA DO-160 compliant, operating temperature 115°C and EMI/EMC protection and fire detection/integrity | <ul style="list-style-type: none"> • Environmentally rugged • Hermetic package eliminating the potential for contamination of the sensor environment • Enhanced vibration ruggedness • Industry-leading indirect lightning and dielectric ruggedness • Integral health monitoring capability • Continuous health monitoring helps to increase revenue, reduce cost to serve and cost of goods | <ul style="list-style-type: none"> • Thrust reverser actuation systems • Actuators • Nacelles • Engine • Ground vehicles • Valves |
| Aero LVDT Platform (Linear Variable Differential Transformers) | | | |
|  | Single Channel, Dual Parallel, Dual Tandem Series Configurable LVDT platform, operating temperature 200°C, designed for harsh environments and RTCA/DO-160 compliant | <ul style="list-style-type: none"> • Pre-validated configurable LVDT platform approach to reduce design cycle time and get to market faster • Single channel, dual channel and dual tandem offerings ensure a wide-variety of configurations and applications can be accommodated • Enhanced reliability • Life requirements MTBF (1million hours minimum) • Designed for use in harsh environments • Reduced installation time by engineering design | <ul style="list-style-type: none"> • Flight control systems • Engines (mechanisms/valves) • Nose-wheel steering • Pilot controls • Landing gear • Hydraulics |
| Precision Thermostats | | | |
|  | 3000 Series High-end aerospace applications, high reliability to meet stringent military requirements, hermetic and non-hermetic devices and customized configurations | <ul style="list-style-type: none"> • Designed to meet or exceed military and aerospace critical specifications for space flight use • Hermetically sealed • Tight tolerances • Tight differentials • Pre-set and tamper proof • Wide variety of mounting brackets and terminals | <ul style="list-style-type: none"> • Battery charging systems temperature monitoring • Flight decks, cargo holds, landing gear • Aerospace engines • Rocket thrusters, radar • Temperature control, satellite systems, airframe, radio, antenna arrays • Environmental and flight controls |
| Military Toggle & Sealed Switches | | | |
|  | HE Series, EN Series, HM Series, HR Series, HS Series, XE Series. Commercial military vehicles and FAA/ PMA products | <ul style="list-style-type: none"> • Hermetic sealing per MIL-PRF-8805 symbol 5 and environmentally sealed • Electrical connection/termination • Variety of integral actuators • Circuitries from single-pole double-throw (SPDT) up to six-pole double-throw (6PDT) • Silver contacts standard | <ul style="list-style-type: none"> • Landing gear (uplock, downlock, and Weight on Wheels (WOW)) • Aircraft doors, cargo doors (open/closed position, locked status) • Flight controls (flap/slat, spoilers) • Valves • Engine bleed air • Refuelling |
| Aero Speed Sensors VRS (Variable Reluctance Speed Sensors) | | | |
|  | Simple, rugged devices and direct conversion of actuator speed to output frequency | <ul style="list-style-type: none"> • Measure speed, position and presence detection • Utilizing magnetoresistive, variable reluctance • Self powered operation • No moving parts • Operates over wide speed range • Operates wide temperature – 230°C possible | <ul style="list-style-type: none"> • Turbine engine and motor RPM • Gear speed measurement • Fuel pump speed measurement • APU turbine speed • Propeller speed • Wheel slip |

| Product | Series & Description | Features & Benefits | Applications |
|--|--|---|--|
| Copperhead Series Transceiver Modules | | | |
| | TMXXXXXX Buffers, reconditions and isolates a high speed data line | <ul style="list-style-type: none"> Enhance distance and signal integrity with convenient one-package solution to replace several components on PCB Supports for data rates from 30 Mbps to 2125 MBps Supports for cable interfaces from 60Ω to 150Ω impedances (differential and coax) Meets MIL-PRF 21038 environmental requirements, MIL-STD-981 compliance on request Lead finish: tin-lead (Sn/Pb) Low transmit/receive jitter, power dissipation, and EMI emission | <ul style="list-style-type: none"> Fibre channel (over copper) IEEE 1394B firewire Gigabit ethernet Digital video (SMPTE-292M, HDTV) |
| Ethernet Transformers | | | |
| | Please visit www.incore.com for further information Discrete footprint, ruggedized in transfer molding or pour-filled construction | <ul style="list-style-type: none"> Meets MIL-PRF 21038 environmental requirements, MIL-STD-981 compliance on request Highest insulation discrete Ethernet transformer available on market (10KVAC insulation) Lead finish: tin-lead (Sn/Pb), ROHS and REACH compliance versions on request Multiple package and configuration options | <ul style="list-style-type: none"> 10Base-T (IEEE 802.3i) 100Base-TX (IEEE 802.3u) 1000Base-T (IEEE 802.3ab) PoE (IEEE 802.3af) AFDX Time triggered ethernet |
| MIL-STD-1553 Transformers | | | |
| | XX1553-XX iNRCORE has the most complete MIL-STD-1553 transformer line available | <ul style="list-style-type: none"> Designed, built and tested to MIL-PRF-21038 Supports all major 1553 transceivers Support for +12V, +5V and +3.3V core voltage Low profile and stacked versions available Custom design, testing and screening upon request | <ul style="list-style-type: none"> MIL-STD-1553 data bus |
| High Frequency Baluns | | | |
| | HFBXXXXXX Designed for SMPTE-292M, SMPTE-424M/425M applications and standard testing equipment | <ul style="list-style-type: none"> Support for data rates up to 2.97 Gbps Low insertion loss High data rate transmission Good impedance match over wide bandwidth Available for flight application with ruggedized packaging Custom packaging and connectors on request | <ul style="list-style-type: none"> SMPTE-424/425M application at 2.97 Gbps SMPTE-292M application at 1.485 Gbps Bench test 150Ω fibre channel 100Ω gigabit ethernet |
| Planar Transformers | | | |
| | PL102XX, PL103XX, PL104XX Incorporated with 2 additional clips for secure board mounting every time | <ul style="list-style-type: none"> Ruggedized to meet MIL-PRF-27 Grade 6 requirements Rated power up to 250W Tin-Lead (Sn/Pb) finish on leads. RoHS and REACH compliance versions on request Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |
| Power Inductors | | | |
| | PL81XX, PL83XX – PL9XX, PL101XX iNRCORE offers a wide variety of inductor sizes and current ratings | <ul style="list-style-type: none"> 13 different physical sizes available Specifically designed to meet MIL-PRF-27 Grade 6 requirements Tin-Lead (Sn/Pb) finish on leads. RoHS and REACH compliance versions on request Incorporates additional PCB mounting clips for superior performance in applications with shock and vibration requirements Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |

| Product | Series & Description | Features & Benefits | Applications |
|---------------------------------------|--|--|--|
| Common Mode Chokes | | | |
| | PL82XX iNRCORE's SLIC Series common mode chokes meet MIL-PRF-27 requirements | <ul style="list-style-type: none"> Ruggedized to meet MIL-PRF-27 Grade 6 requirements Tin-Lead (Sn/Pb) finish on leads. RoHS and REACH compliance versions on request Comprehensive range of inductance and rated current options available Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |
| SMT Current Sense Transformers | | | |
| | PL3XXX iNRCORE's current sense transformers have an additional clip for secure core halves bonding | <ul style="list-style-type: none"> Ruggedized to meet MIL-PRF-27 Grade 6 requirements 10A and 20A current rating available Tin-lead (Sn/Pb) finish on leads. RoHS and REACH compliance versions on request Comprehensive range of inductance and rated current options available Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |
| Gate Drive Transformers | | | |
| | Please visit www.incore.com for further information Ruggedized to meet MIL-PRF-27 Grade 5 requirements | <ul style="list-style-type: none"> ET (volt-time product) up to 60V*μsec Basic and Functional insulation offered, Reinforced insulation available on request Tin-Lead (Sn/Pb) finish on leads. RoHS and REACH compliance versions on request Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |
| Delay Lines | | | |
| | Please visit www.incore.com for further information Active and Passive Delay Lines to meet MIL-PRF-83531 and MIL-PRF-83532 | <ul style="list-style-type: none"> Delay value range from 25nS to 500nS 50Ω and 100Ω impedance available Tin-Lead (Sn/Pb) finish on leads Multiple packages (SIP, DIP, SMT) available Custom design, testing and screening upon request | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |
| MIL-STD-1553 Data Bus Couplers | | | |
| | DBCL-XXXX Developed with bench test applications in mind | <ul style="list-style-type: none"> Available in 1,2,3 or 4 stubs Impedance > 7.2K Ω from 75KHz to 1MHz over extended temperature range Termination resistor integrated versions available Multiple packages (SIP, DIP, SMT) available PCB mount and connectorised modules available MIL-STD-981 versions available on request | <ul style="list-style-type: none"> MIL-STD-1553 data bus |
| Switch Mode Power Transformers | | | |
| | Please visit www.incore.com for further information PulseR provides custom wire-wound transformers for a variety of different applications | <ul style="list-style-type: none"> Support switching mode power supply application Support 50/60Hz, 400Hz single phase and 3 phase up to 10KVA Ruggedized to meet MIL-PRF-27 Grade 6 requirements Custom designs upon request Lead/terminal finish: tin-lead (Sn/Pb) | <ul style="list-style-type: none"> AC-DC converter DC-DC converter |

| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|---|
| KP Series - High Density Miniature Connectors | | | |
|  | KPT, KPSE, KPTC, VG95328, D26482-Style Ultra-rugged signal solutions | <ul style="list-style-type: none"> Secure 3-point locking system TTI in-house assembly / VAS Five-way polarization for precise alignment Sealing up to IP67 Full range of tooling, back shells and accessories Multiple plating options including VG approved Tin Zinc J plating High insert arrangement contact density Various plating options including VG approved Tin Zinc J plating | <ul style="list-style-type: none"> Military ground vehicles Military aviation Ground support systems |
| MKJ Series - Miniaturized Circular Connectors | | | |
|  | MKJ0 UN Thread, MKJ1 Double Start, MKJ3 Bayonet, MKJ4 Breakaway, MKJ5 Triple Start Reduction in weight and size without the loss of reliability | <ul style="list-style-type: none"> Available in rear-release crimp, PC tail or solder cup contacts Shells and jam nuts available in aluminum alloy or corrosion resistant stainless steel GOSSRA and NATO STANAG 4695 qualified. Nett Warrior qualified. Plating: Aluminum/Anodize (Black), Electroless Nickel (Pass or Black), Stainless Steel, Teflon Nickel, OD Cad, Black Zinc Nickel | <ul style="list-style-type: none"> Soldier-worn technology and connectivity Military aircraft Surveillance and missile systems Ground defense equipment UAVs |
| CGE Series – High Power Connectors | | | |
|  | CGE, VG96929 Single pole ultra-rugged solution | <ul style="list-style-type: none"> Fully VG96929 certified Ideal for high power low voltage applications up to 900A Proven bayonet coupling design for fast mating and vibration resistance Visual, audible and tactile locking system Water pressure tightness to 1 Bar Multiple plating options including VG approved Tin Zinc J plating | <ul style="list-style-type: none"> Military ground vehicles Shipboard and marine Industrial equipment Starter motors Engines |
| CA Bayonet Series – Reverse Bayonet Connectors | | | |
|  | CAB, VG95234, CA COM, CGL Exceptional vibration protection, by a simple 120° turn | <ul style="list-style-type: none"> Box mount, wall mount, jam nut, thru- bulkhead, straight, cable-to-cable, right angle TTI in-house assembly / VAS Sealing up to IP69k Wide variety of shell sizes, layouts and accessories Solder, PCB and crimp Multiple plating options including VG approved Tin Zinc J plating | <ul style="list-style-type: none"> Military land vehicles Heavy equipment Production equipment Controls systems Power distribution units |
| MDM Series – High Density Micro Connectors | | | |
|  | MDM, MDSM, MIL-DTL-83513, MDLM, MDMH, TMDM High Temp (+200°C), Ultra High Temp (+230°C) Ultra lightweight, space-saving connectors | <ul style="list-style-type: none"> Mixed power, coax, filter, hermetic and signal layouts Wire size: AWG 24 thru AWG 32 Current rating 3A / max. voltage 600 VAC (40A) Standard arrangements: 9, 15, 21, 25, 31, 37, 51, 69 and 100 Micro Twist Pin Contact System recessed into plug insulators Approved to MIL-DTL-83513 specifications | <ul style="list-style-type: none"> Missiles and ordnance Aerospace launch vehicles Oil and gas exploration Industrial automation |
| D-Sub Series - High-Reliability Connectors | | | |
|  | Crimp or Solder: Combo – D, MIL-DTL-24308, Stainless Steel, Hermetic, Filter, Space Grade, & Industrial Ideal high-reliability I/O solution | <ul style="list-style-type: none"> Configurations – Signal/power combo, crimp, solder, pc tail, filter/ hermetic Up to 104 contact positions Power contacts to 70 amps Standard, high density, double density versions Accessory: back shells w/locking hardware, guide plates & polarization options Qualified to MIL-DTL-24308 | <ul style="list-style-type: none"> Missile systems Military aviation Shipboard Commercial aerospace Communication and data systems |

| Product | Series & Description | Features & Benefits | Applications |
|--|---|---|---|
| Nemesis Series - Miniaturized Circular Connectors | | | |
| | Nemesis II. Power, signal and data breakaway connectors submersible up to 20 meters. | <ul style="list-style-type: none"> • Dual Coupling with positive locking or Cannon Break Away for rapid mating and demating • High sealing capability to 20 meter submersible • 500 hour salt spray resistant plating • Sealed in the mated and un-mated conditions • Reliability up to 10,000 mating cycles | <ul style="list-style-type: none"> • Soldier-worn technology and connectivity • Surveillance systems • Missiles and ordnance • UAVs |
| Rack and Panel Series - ARINC Connectors | | | |
| | ARINC 600, ARINC 404, BKA, DPX, SGA, DPK, DPA Space and weight optimized blind-mate connectors. | <ul style="list-style-type: none"> • High contact density with up to 800, size 22 contacts in one connector • Low insertion force contacts • Environmental and non-environmental versions • High vibration resistance • Off-the-shelf and custom versions | <ul style="list-style-type: none"> • Commercial aviation - IFE, avionics, control systems • Military aviation - Avionics, control systems, radar |
| CIR Series - Bayonet Connectors | | | |
| | Veam CIR, Veam FRCIR, Veam CIR M12. Versatile high shock and vibration resistant connectors. | <ul style="list-style-type: none"> • VG95234-style • Positive lock / quick disconnect coupling mechanism • 1 to 150 solder or crimp contacts and 256 layout options • High shock and vibration resistance • Wide range of accessories • +2,000 mating cycles | <ul style="list-style-type: none"> • Military land vehicles • Heavy equipment • Production equipment • Controls systems • Power distribution units |

Trust VG Qualified Products at TTI Europe





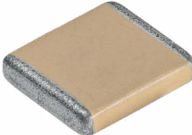

Designed for the highest reliability when civilian standards aren't enough.

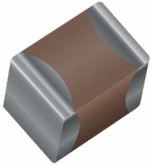
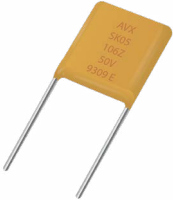
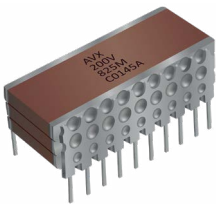





The IP&E Specialist

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|--|
| MIL-PRF Polymer Electrolytic Capacitor | | | |
|  | T580/T581 New non established and established reliability conductive polymer, SMD capacitors for mission critical applications | <ul style="list-style-type: none"> • Very low ESR values down to 10mΩ • Failure rates available • Surge current testing options • Group A and Group C available • 100% accelerated steady state aging • High frequency capacitance retention | <ul style="list-style-type: none"> • Decoupling, filtering and hold-up in defense and aerospace applications with low ESR or a benign failure mode requirement |
| Polymer Electrolytic Capacitors for High Reliability Applications | | | |
|  | T540/T541 (HRA – High Reliability Alternative) Conductive polymer, surface mount capacitors | <ul style="list-style-type: none"> • Approved for DLA Drawing 04051/04052 • B, C and D failure rates available • 100% accelerated steady state aging • Improved humidity capability 85°C/85% RH, 1.0VR (in black colour epoxy) available • Very low ESR values down to 5mΩ • Surge current testing options | <ul style="list-style-type: none"> • Decoupling, filtering and hold-up in defense and aerospace applications with low ESR or a benign failure mode requirement |
| Polymer hermetically sealed and SMD capacitors | | | |
|  | T550/T551 and T555/T556 Axial leaded and Surface mount polymer hermetically sealed (PHS) devices for High Reliability Applications | <ul style="list-style-type: none"> • DLA drawing 13030 qualified parts available (T550) • 100% simulated breakdown screening • 100% constant voltage conditioning (240 hours) • 100% surge current tested • Approximately 25% lighter than equivalent wet tantalum • Extremely low ESR | <ul style="list-style-type: none"> • High voltage power management applications • Buck/boost converter applications • Filtering applications • Hold-up capacitors applications • High ripple current applications |
| Automotive Grade Polymer Electrolytic Capacitors | | | |
|  | T598/T599 Harsh conditions, such as high humidity and temperature, are a concern | <ul style="list-style-type: none"> • Ultra low ESR • Full compliance with AEC-Q200 qualification test plan • (T598 125°C, T599 150°C) • Qualification plan based on AEC-Q200 with 85°C/85% RH load for 1.000hours • Subject to PPAP/PSW and change control • Volumetrically efficient • Meets or exceeds EIA standard 535BAAC | <ul style="list-style-type: none"> • Decoupling and filtering applications with harsh conditions • Automotive applications such as infotainment, ADAS, chassis and safety & powertrain with harsh conditions |
| MIL-PRF-32535 MLCCs | | | |
|  | MIL-PRF-32535 High Reliability Surface Mount Capacitors, qualified per MIL-PRF-32535 M and T level | <ul style="list-style-type: none"> • Patented BME technology • Qualified per MIL-PRF-32535 (QPL), M and T Level • Flexible termination option available • EIA 0402, 0603, 0805, 1206, 1210, 1812, 2220 case sizes • C0G, BP and X7R Dielectrics available • Over 55-fold increase in capacitance over MIL-PRF-55681 | <ul style="list-style-type: none"> • Critical timing • Decoupling • Bypass • Filtering • Transient voltage suppression • Circuits requiring low loss |
| KEMET Power Solutions (KPS) Automotive Series | | | |
|  | KPS KEMET Power Solutions (KPS) | <ul style="list-style-type: none"> • AEC Q200 automotive qualified • -55°C to +125°C operating temperature range • DC voltage ratings of 500V and 630V • EIA 2220 case size • Higher capacitance in the same footprint • Proprietary lead-frame technology to vertically stack one or two multilayer ceramic chip capacitors into a single compact surface mount package | <ul style="list-style-type: none"> • Switch mode power supplies (input filters, resonators, tank circuits, snubber circuits, output filters) • High voltage coupling and DC blocking • Voltage multiplier circuits |

Knowles





| Product | Series & Description | Features & Benefits | Applications |
|---|---|--|---|
| Hi Rel MLCCs | | | |
|  | Hi Q, Hi-Temp IECQ-CECC AEC-Q200 ESCC 3009 MIL Grade | <ul style="list-style-type: none"> • 100% electrically inspected to ascertain conformance to a strict performance criteria • IECQ-CECC-QC32100 Qualified • QPL to MIL-PRF-55681 and MIL-PRF-123 • Testing to meet ESCC 3009 requirements • DSCC | <ul style="list-style-type: none"> • Aerospace • Defense • Space • Medical implantables |
| EMI Filters | | | |
|  | SF Panel Mount High Frequency Performance | <ul style="list-style-type: none"> • High Frequency Performance >10GHz • LC, C, Pi, T Configurations • Hermetic Options • Hi-Rel Testing IAW M28861 and M31033 • High Voltage and Current Ratings | <ul style="list-style-type: none"> • Aerospace • Defense • Medical • Space • Telecommunications |
| MLPS 105°C Flatpack - Low profile aluminum electrolytic | | | |
|  | MLPS Flatpack: High capacitance density in a low-profile package | <ul style="list-style-type: none"> • Military-grade flat electrolytics optimized for 105 °C applications • Life tested to 10,000 hours @ 105 °C, Rated Vdc • High vibration resistance up to 20g (HV Option) • High reliability burn-in available (48 hrs @ Vr, 105 °C) • Welded seal resists “dry-out” typical of conventional electrolytics | Power supplies for: <ul style="list-style-type: none"> • Military and commercial aircraft • Shipboard / ground-based radar systems • Ruggedized compact power system • Telecom circuit packs • Voltage holdup or filtering in military SEM-E modules |
| High Voltage MLCCs | | | |
|  | AEC-Q200, 16V to 5kV High Capacitance StackiCap X7R (1812 - 3640) | <ul style="list-style-type: none"> • High voltage, high capacitance MLCC, stable dielectric type II • Deliver better reliability and compactness to replace stacked or film cap • Capacitance range to 5.6uF; voltage range 200V to 2kV • Available with a range of termination options, including tin/lead • FlexiCap™ termination designed to reduce stress damage to MLCC | <ul style="list-style-type: none"> • New Space • Military • General usage for DC-DC converter, AC-DC converter circuits in military equipment • Automotive |
| High Q MLCCs | | | |
|  | Low-ESR COG Q and U Series (0402 - 3640); H Series (stable X8G) AEC-Q200 Qualified High power RF high Q and custom RF power assemblies MIL Standards | <ul style="list-style-type: none"> • Low dissipation for high frequency, stable High Q material • Low loss performance in systems below 3GHz • Available in vast range of sizes up to 1.3”x1.3” • Ultra-low ESR and high temperature (150°C) available in 0402, 0603, 0805 and 1111 • 2225 and 4040 extended range voltages up to 10kV • Termination option with Knowles FlexiCap™ to enhance board flexure capability | <ul style="list-style-type: none"> • Military Radar and Radio Communication Systems • RF circuit impedance matching, DC blocking, coupling and decoupling |
| Pulse Energy MLCCs | | | |
|  | Single or multiple pulse applications | <ul style="list-style-type: none"> • Small size • More energy in cold temperature detonation • Low ESR • Low Inductance | <ul style="list-style-type: none"> • Military detonation • Rocket ignition |






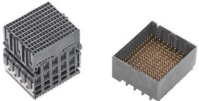
| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|--|
| Surface Mount Ceramic Capacitors | | | |
|  | NASA MIL/DSCC/ COTS-PLUS ESA ESCC QPL CECC | <ul style="list-style-type: none"> • QPL BME technology available • High CV technology enabling case size downsizing/PCB weight and size reduction • Low ESR/ESL compared to other technologies • Au, PdAg, tin lead or pure tin termination • FLEXITERM® for enhanced mechanical stress resistance | <ul style="list-style-type: none"> • Space/satellite systems • Aircraft/marine/land • Communication • Munitions • Radars • Power supplies |
| Leaded Ceramic Capacitors | | | |
|  | MIL/DSCC/ DLA/BS9100/ COTS-PLUS ESA ESCC/CECC | <ul style="list-style-type: none"> • Radial and axial epoxy encapsulated for harsh environment • QPL PME technologies available • Excellent reliability and low ESR/ESL • High voltage range 1–5kV also available | <ul style="list-style-type: none"> • Space/satellite systems • Aircraft/marine/land • Sonars • Munitions • Power supplies • Rovers |
| Switch Mode Power Supply Capacitors (SMPS) | | | |
|  | MIL/DSCC/BS9100 ESA ESCC/CECC | <ul style="list-style-type: none"> • Designed for programs requiring high reliability performance in harsh environment • Suitable for high current, high power and high temperature applications • Low ESR/ESL and excellent high frequency performance compared to other technologies • A range of lead types: Leaded Radial (Epoxy coated, Polyurethane Varnish), Straight Dual in-line, L Dual in-line | <ul style="list-style-type: none"> • Space/satellite systems • Aircraft/marine/land • Launch vehicle • Rovers • Engine controls • Power supplies |
| RF Surface Mount Ceramic Capacitors | | | |
|  | MIL/DSCC/DLA/ COTS-PLUS | <ul style="list-style-type: none"> • High Q ultra low ESR • High current handling • High self resonance • Tight tolerances from $\pm 0.01\text{pF}$ • BG and BP dielectrics • Au, PdAg, tin lead or pure tin terminations | <ul style="list-style-type: none"> • Command, control and communications • Guidance • Telemetry • SINCGARS • Radars • Weapon systems |
| Surface Mount Tantalum | | | |
|  | MIL/DSCC/SRC/ DLA/COTS-PLUS ESA ESCC/CECC | <ul style="list-style-type: none"> • Standard SMD MnO₂ or polymer or multianode chip capacitor • Long term stability and high capacitance in small case sizes • Polymer offers low ESR and higher inrush current robustness • Excellent reliability | <ul style="list-style-type: none"> • Power supplies • Space/satellite systems • Aircraft/marine/land • Rovers • Radars • Night vision |
| Leaded Tantalum | | | |
|  | CECC Through hole technology/leaded product | <ul style="list-style-type: none"> • Tantalum capacitors with dipped resin encapsulation with SnPb terminations • Optional radial lead wire terminations • Low leakage current • Very small physical sizes • Excellent temperature stability | <ul style="list-style-type: none"> • Power supplies • Communication • Exploration • Scientific • Instrumentation |


Kyocera AVX

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|--|
| Wet Electrolytic Tantalum | | | |
|  | SRW/MIL/DSCC/ DLA/COTS-PLUS/ Leaded product | <ul style="list-style-type: none"> Includes a welded tantalum can and header assembly that provides a hermetic seal to withstand harsh shock and vibration requirements of MIL-PRF-39006 Customised capacitance and voltage ratings are possible, module options TWM High temp option in TWC-Y and TWA-Y 200°C, TWA-X 230°C | <ul style="list-style-type: none"> Radar energy support Aircraft/marine/land Power supplies Scientific High temperature electronics Exploration |
| Hermetically Sealed SMT Tantalum | | | |
|  | COTS-PLUS | <ul style="list-style-type: none"> TWD 175°C super high capacitance TCH Low ESR Polymer Hermetic Series 125°C THH MnO₂ Hermetic Series 230°C Designed for Aerospace and Hi-Rel applications Very long life time in harsh environments Excellent stability under humidity and ambient conditions due to ceramic case hermetic packaging Effective up-screen testing for high reliability | <ul style="list-style-type: none"> Aircraft/marine/land Space/satellite Military Rovers Radars Power supplies Exploration |
| RF Thin Film Capacitors and Inductors | | | |
|  | DLA | <ul style="list-style-type: none"> Capacitors with low ESR at VHF, UHF and microwave frequencies and offer high stability with respect to time, temperature, frequency Inductors with high Q and low DC resistance Enhanced RF power handling capability Ultra-tight tolerances | <ul style="list-style-type: none"> Command, control and communications Radars systems Instrumentation/communication Navigation/location systems RF amplifiers Filters |
| EMI Filters | | | |
|  | MIL | <ul style="list-style-type: none"> High temperature construction withstands 300°C installation temperatures Rugged monolithic discoidal MIL-C-31033 capacitor construction Glass hermetic seal on one end with epoxy seal on the opposite end | <ul style="list-style-type: none"> Space/satellite systems Aircraft/marine/land Guidance systems Command, control and communications Radars systems Weapon systems |
| Antennas | | | |
|  | On-Board, Off-board, External and Custom specific solutions | <ul style="list-style-type: none"> SMT antennas – ceramic, PCB based, stamped metal, patch FPC and PCB with cable, connectors: w.fl or u.fl compatible, SMA,MMCX External antennas: cabled, direct connection, screw mounted, magnet mounted. Ruggedized mechanics for critical environments Custom antennas Testing services | <ul style="list-style-type: none"> GSM, 3G, LTE / 4G, WiFi, BT, GNSS Multiband (L1/L2/L5), Iridium, ISM, LPWAN, 5G, Satellite Ka band Frequency: 433, 868, 915 MHz; 0.7–2.7 GHz; 5.1–5.9 GHz; 20–67 GHz Communication equipment Radios Navigation/location systems |
| Multilayer Organics Filters | | | |
|  | Low-, High-, Band- Pass Filters Diplexers, Custom Filters | <ul style="list-style-type: none"> Expansion matched to PCB Wide frequency range Low profile High attenuation/low insertion loss LC integrated filters – diplexers, filters, couplers defined with significant improvements over LTCC Replace LC filters from discrete components with integrated solution | <ul style="list-style-type: none"> Command, control and communications Telemetry Radars Satellite receivers Instrumentation Location systems |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|---|
| AQHVxx-01ETG / AQHVxx-01ETG-C for automotive ESD protection | | | |
|  | AQHVxx-01ETG and AQHVxx-01ETG-C Series Unidirectional and bidirectional diode array for automotive ESD protection | <ul style="list-style-type: none"> • Low clamping voltage • Low leakage current • Small SOD882 packaging helps save board space | <ul style="list-style-type: none"> • Automotive applications |
| AQ24-01FTG and AQ24C-01FTG for LIN Bus Protection | | | |
|  | AQxx-01FTG , AQxxC-01FTG Unidirectional and bidirectional diode array for LIN bus protection | <ul style="list-style-type: none"> • Low clamping voltage • Low leakage current • Small SOD323 package fits 0805 footprints | <ul style="list-style-type: none"> • Automotive electronics • LIN bus protection |
| AQ24CANFD and AQ24CANA Diode Array for CAN Bus | | | |
|  | AQ24CANFD and AQ24CANA series Diode arrays for CAN bus protection | <ul style="list-style-type: none"> • Automotive grade components • Low clamping voltage • Low leakage current | <ul style="list-style-type: none"> • CAN bus protection • Automotive applications • Electronic control units • Body control units • ADAS control units • PowerTrain control units |
| SZ Families Automotive SMT TVS Diode from 200W to 1500W | | | |
|  | SZ1SMA, SZ1SMB, SZ1SMCxxA, SZ1.5SMCxxA, SZP6SMB, SZSMFxxA Popular power dissipation rating for automotive applications | <ul style="list-style-type: none"> • Standard package and compact footprint allow quick and easy layout ideally suited for use in automotive equipment and many other industrial/consumer applications • SMA, SMB, SMC and SMF packages | <ul style="list-style-type: none"> • Automotive applications |
| TPSMx Families Automotive SMT TVS Diode from 400W to 1500W | | | |
|  | TPSMF4L, TPSMA6L, TPSMB, TPSMC Popular power dissipation rating for automotive applications | <ul style="list-style-type: none"> • Standard package and compact footprint allow quick and easy layout in high reliability applications • SMA6L, SMF, SMB and SMC packages • Large range standoff voltage options to pick from | <ul style="list-style-type: none"> • Electronic Control Units (ECUs) • Automotive sensors • BCMs/LIN Bus/ CAN bus • On-board entertainment systems |




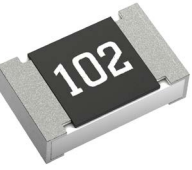

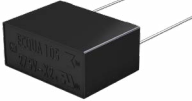
| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|---|
| SLD8S SMT TVS for Load Dump Protection | | | |
|  | SLD8S automotive SMT TVS diode Meets ISO7637-2 5a/5b protection and ISO16750 load dump test | <ul style="list-style-type: none"> • 7000W (10/1000µs) or 2200W (load dump) peak pulse power dissipation ratings • SMT package is ideal for automatic pick and place assembly and reflow processes • Meets ISO7637-2 5a/5b protection and ISO16750 load dump test | <ul style="list-style-type: none"> • Inductive load switching protection • Alternator load dump protection |
| 3000W High REL TVS in SMT DO-214AB Package for Transient Voltage Protection | | | |
|  | SMDJ-HR/ SMDJ-HRA High Reliability Series TVS Diode 5V-150V (SMDJ-HR) / 5V-170V (SMDJ-HRA) reverse stand off voltage | <ul style="list-style-type: none"> • AS9100 certified and TS16949 certified facility • 100% screen test sorting • Group B test sorting (SMDJ-HR Series) • Ready to order 3000W peak pulse power rating in P600 Package • Allows for easy design in compliance with the RTCA/DO-160 Standard • Long history of use in the aerospace industry | <ul style="list-style-type: none"> • Higher reliability performance under harsh conditions |
| 30000W High REL TVS in P600 Package for Transient Voltage Protection | | | |
|  | 30KPA-HR/30KPA-HRA High Reliability Series TVS Diode 28V-345V reverse stand off voltage | <ul style="list-style-type: none"> • AS9100 certified and TS16949 certified facility • 100% screen test sorting • Group B test sorting (30KPA-HR Series) • Ready to order 30000W peak pulse power Rating in P600 package • Allows for easy design in compliance with the RTCA/DO-160 standard | <ul style="list-style-type: none"> • Higher reliability performance under harsh conditions |
| 5000W High REL TVS in P600 Package for Precision Overvoltage Protection | | | |
|  | TLP / TLP A High Reliability Series TVS Diode 10V-40V reverse stand off voltage | <ul style="list-style-type: none"> • DO-160/DC protection & MIL-STD-704 compliance • AS9100 certified and TS16949 certified facility • 100% screen test sorting • Group B test sorting (TLP Series) • Ready to order 5000W peak pulse power rating in P600 package • Allows for easy design in compliance with the RTCA/DO-160 standard | <ul style="list-style-type: none"> • Designed to protect sensitive electronics from 50ms² test waveform • Applications require higher reliability performance under harsh conditions |

| Description & Product | Features & Benefits | Applications | |
|---|---|--|--|
| Easy-On FFC/FPC Connectors | | | |
|  | <p>Reliable, robust and easy-to-use connector solutions with improved design flexibility.</p> | <ul style="list-style-type: none"> • High operating temperatures • Compact size affords space savings • Extensive combination of actuators • Circuit sizes (2 to 120) for design flexibility • Features that deliver secure connectivity | <ul style="list-style-type: none"> • Audio and navigation equipment • Flat panel displays • Portable audio devices • Monitoring equipment • Instrument panels |
| Power and Signal Cable Assemblies | | | |
|  | <p>Broad offering of Molex connectors and various cable lengths for prototyping and global production.</p> | <ul style="list-style-type: none"> • Discrete cable assemblies with a range of Molex Connectors available off the shelf • Meets current cable assembly industry standards • Meets 2011/65/EU RoHS Compliance • UL 1061 and UL 1007 discrete wires • Pin-to-pin mapping from receptacle to PCB header | <ul style="list-style-type: none"> • Dash panels • Diagnostic equipment • Security systems • High-end computing |
| PowerPlane Busbar Connectors | | | |
|  | <p>High-current performance with configurations and features ideal for power-distribution applications.</p> | <ul style="list-style-type: none"> • High-conductivity Copper alloy • Dimensionally compatible with competitors' connectors • Float-mount design • One part number mates with 3.00- and 3.18mm thick busbar tabs • Multiple, independent points of contact | <ul style="list-style-type: none"> • Networking equipment • Power supplies • Vehicle charging stations • Device communications • Base stations |
| Mega-Fit Power Connectors | | | |
|  | <p>Delivering 30.0A per circuit whilst offering unique keying options to ensure proper mating.</p> | <ul style="list-style-type: none"> • Power-dense design with high-current terminals, tight pitch and row spacing • Terminal interface with six independent points of contact (splitbox terminal design) • Fully isolated header pins and receptacle terminals • Flexible wire gauge options • Sacrificial contacts | <ul style="list-style-type: none"> • Power supplies and distribution • Machinery and heavy equipment • Unsealed electronic control modules • Power converters |
| 5G mmWave RF Flex-to-Board Connectors | | | |
|  | <p>Excellent signal integrity (SI) performance for high-speed and extreme RF applications</p> | <ul style="list-style-type: none"> • Superior shield design enables industry-leading SI performance up to 25 GHz • Robust connectivity features • Highly versatile to replace multiple coaxial cables when used over an FPC cable • Wide alignment tolerance of 0.30mm (pitch)/0.30mm (span) facilitates proper alignment and mating Unique contact design of RF terminal with shielding | <ul style="list-style-type: none"> • Drones • Unmanned vehicles • Aircraft avionics • Smart communications systems • Portable audio and navigation equipment |
| Impact Backplane Connectors | | | |
|  | <p>Meeting next generation high-speed demands with one of the most versatile offerings in the market.</p> | <ul style="list-style-type: none"> • Density up to 30 differential pairs per cm (80 differential pairs per linear inch) • Versatile configuration options available • Three compliant-pin options • Impact data rates scalable up to 25 Gbps; Impact zX2 data rates scalable up to 28 Gbps • Broad-edge-coupled, differential-pair design | <ul style="list-style-type: none"> • Telecommunications hardware • IT equipment • Diagnostics equipment • Networking devices |

| Description & Product | Features & Benefits | Applications |
|--|--|--|
| RF Coaxial Connectors | | |
|  <p>Complete solutions from DC to mmWave with superior RF performance for the most rugged and demanding environments and applications</p> | <ul style="list-style-type: none"> • Available from DC to microwave and mmWave frequencies • Full range of sizes and interface types • Custom highly-engineered assemblies • Custom connector design solutions • Modeling to meet customer unique requirements • Ruggedized solutions | <ul style="list-style-type: none"> • Soldier Manpack Radios and Systems • Satellite • Ground, Airborne, Shipboard, and Space Systems • Radar and Electronic Warfare • Communications • UAVs • C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance) |
| High-Current, Universal-Clamp Terminal Blocks | | |
|  <p>DIN-rail or panel-mountable solution for high-current and voltage applications.</p> | <ul style="list-style-type: none"> • Tin coated Aluminum contacts • Compound coating temperatures • Partition wall on cover • Hex Screws • High temp Polyamide housing and cover | <ul style="list-style-type: none"> • Motor inverters • Motor drives • Motor control systems • Power distribution panels and cabinets • Commercial vehicles |
| EXTreme Ten60 High-Power Connectors | | |
|  <p>High-power connections that facilitate high-voltage solutions for backplane and midplane designs.</p> | <ul style="list-style-type: none"> • Highly configurable connector system • Blind-Mate top and side guides • Split power or standard blades • Configurable with dovetail design • Low-profile design (10.00mm) | <ul style="list-style-type: none"> • LED lighting • Power distribution systems • Smart LED screens • Power supplies • Cellular base stations |
| FCT D-Sub Connectors | | |
|  <p>Extensive range of D-Sub options to provide effective solutions for a variety of applications.</p> | <ul style="list-style-type: none"> • Plastic and metal backshells • Machined contacts • Many different combinations of materials and gold plating thicknesses • Water-proof IP67 available • Off-the-shelf and custom mixed layout D-Sub connectors available • Non-magnetic available | <ul style="list-style-type: none"> • Mobile applications • Applications exposed to water spray • Dense connector spacing • Long cable runs • Communications infrastructure |
| Micro-Change M12 Connectors | | |
|  <p>Rugged, compact, sealed connectors used for sensor/actuator connectivity.</p> | <ul style="list-style-type: none"> • Heavy-duty die-cast construction and IEC 61076-2-101 compliant design • Anti-vibration feature • Rated to 250V AC/DC, up to 4.0A • Water-tight panel-mount design on harsh duty receptacle | <ul style="list-style-type: none"> • Class 2 power and network circuit applications • Sensors • Robotics • Automated equipment |
| Premo-Flex Flat-Flexible Cable (FFC) | | |
|  <p>Premo-Flex Flexible Solutions deliver reliable flat flexible cables (FFC) optimal for a variety of dynamic applications with an extensive range of standard off-the-shelf and custom options.</p> | <ul style="list-style-type: none"> • Terminates to fully mate with a wide range of Molex Easy-On connectors • Product offerings range from 50,000 to 2.5 million flex life cycles • Custom and off-the-shelf solutions are available to match customer performance and scheduling needs • Contact area can be configured on the same side (type A) or opposite sides (type D) of the flexible cable jumper | <ul style="list-style-type: none"> • Personal navigation equipment • VR/AR devices • UAVs (drones) • GPS devices |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|---|
| Low Profile TO-252 Resistor | | | |
| | TKH45 Series Thick film 45 watt resistor | <ul style="list-style-type: none"> • Elimination of thermal layers for greater performance • No wire bonds for increased reliability • Larger resistance area for increased surge handling • 45 watts of thermal dissipation with proper heatsinking non inductive thick film construction. Also available with a 55-watt version | <ul style="list-style-type: none"> • Pre-charge • Snubbers • Motor control inverters • In-rush current protection |
| Aluminum Housed Resistors | | | |
| | HS Series aluminum housed resistors available with different terminations and power ratings | <ul style="list-style-type: none"> • High power to volume • Wound to maximize High Pulse Capability • Values from R005 to 100K | <ul style="list-style-type: none"> • Motor control • Battery chargers • Frequency converters |
| Force Sense Resistor | | | |
| | FSR Series Resistance based sensor for touch or load sensing | <ul style="list-style-type: none"> • Sense range from 20g to 5Kg • 7 different sizes and shapes life cycle testing to 10M actuations • Several different connection types | <ul style="list-style-type: none"> • Object or human detection • HMI (Human-Machine Interface) • MMI (Machine-Machine Interface) |
| Metal Foil 4 Terminal Chip | | | |
| | FC4L Series Kelvin connection for precision measurement | <ul style="list-style-type: none"> • Great size range from 0306 to 2043 • Long edge electrodes for greater current capacity • Values down to 1m ohm and tolerances down to 0.5% • Excellent stability down to 50ppm • Wattage range from 0.25 watts to 5 watts | <ul style="list-style-type: none"> • Power supplies • Battery management • Telecommunications • Consumer devices |
| High Power TO-247 Resistor | | | |
| | TEH140 Series Thermally efficient TO-247 packaged resistor | <ul style="list-style-type: none"> • 140 watts of power dissipation • 0.10 ohms to 510K ohms resistance range • 0.9°C/W of thermal resistance from resistor to flange • 2500 VAC of withstanding voltage | <ul style="list-style-type: none"> • Inverters • UPS • Motor controls • Green energy • Snubbers |
| Metal Element Current Sense SMD Resistor | | | |
| | MCS Series Ultra low values, tight tolerances and stable TCR values | <ul style="list-style-type: none"> • Precision resistance alloy material with low TCR • Low inductance, low thermo EMF • Flame-retardant epoxy protective coat • Excellent long term stability | <ul style="list-style-type: none"> • Battery Charging • Motor Controls • Industrial power supplies • AC/DC converter or DC/DC converter |

Panasonic Industry

| Description & Product | Features & Benefits | Applications |
|---|--|---|
| Hybrid Capacitors | | |
|  | <p>EEHZ***</p> <ul style="list-style-type: none"> - Stable performance in harsh condition - High vibration up to 30G - High temperature resistance | <ul style="list-style-type: none"> • High ripple up to 6.1 Arms • High capacitance 1000μF • High temperature up to 150°C |
| Electrolytic Capacitors | | |
|  | <p>EEE***</p> <ul style="list-style-type: none"> - High performance with low ESR - Larger capacitance - High Temp-Reflow - Minituarized | <ul style="list-style-type: none"> • Lifetime up to 10,000h • 6.3V - 100V |
| Thick Film Resistors | | |
|  | <p>ERJ***</p> <ul style="list-style-type: none"> - High Power in small size - Anti-pulse/anti-surge - High temp & voltage - Long time stability | <ul style="list-style-type: none"> • Power up to 2W, down to 5mΩ • High temperature up to 175°C • Large power dissipation • Soft Terminal structure/Better Solder Joint reliability • Anti-sulfure structure |
| Thin Film Resistors | | |
|  | <p>ERA***</p> <ul style="list-style-type: none"> - High precision - High reliability and low drift - Stability over lifetime (85°C/ RH85%) | <ul style="list-style-type: none"> • Precision down to \pm 5ppm/K • High voltage up to 500V@1MΩ • Anti-sulfure structure |
| Inductors | | |
|  | <p>ETQP*</p> <ul style="list-style-type: none"> - High vibration up to 50G - High temperature resistance | <ul style="list-style-type: none"> • High temperature up to 180°C • No hard saturation • Low DCR • High current up to 103A |
| Film Capacitors | | |
|  | <p>EZPV* ECWFG*</p> <ul style="list-style-type: none"> - Low self-heating - Self-healing fuse function | <ul style="list-style-type: none"> • 600V - 1300V • Up to 30 Arms |

| Product | Series & Description | Features & Benefits | Applications |
|--|---|---|---|
| Pan-Steel® Stainless Steel Installation Tools | | | |
| | RT2HT and BT2HT Series Industry-leading ergonomic tools to promote worker safety and improve productivity | <ul style="list-style-type: none"> • Superior cutter design reduces cutting effort by 50%, diminishing operator fatigue • Adjustable tension control provides consistent bundle tension • Narrow nose design allowing access to confined space • Multi-position rear handle provides flexibility for a one or two hand installation • Cable tie side entry for immediate positioning of tie and tool to speed installation | <ul style="list-style-type: none"> • Indoor, outdoor and direct burial • Resistance to chemicals, vibration, radiation, weathering and extreme temperatures • Resistance to extreme temperatures, chemicals, salt-water spray and ultra-violet light • Ships, submarines, aircraft, chemical plants, refineries, industrial facilities, oil rigs and refineries |

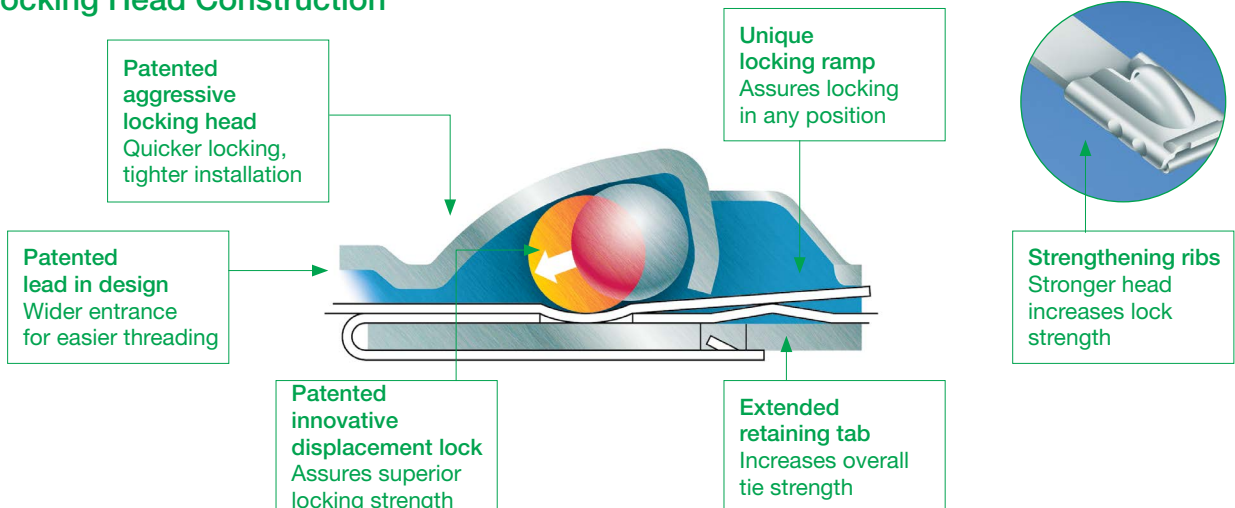
| | | | |
|---|--|--|---|
| Pan-Steel® Double Wrapped Self-locking Cable Tie | | | |
| | MLTD Series Double wrapped cable tie | <ul style="list-style-type: none"> • Self-locking head design speeds installation and locks into place at any length along the tie body • Cable tie body passes through the head two times for additional strength • Available in heavy, extra-heavy and super-heavy cross section • Available in AISI 304 stainless steel for general-purpose application • Available in AISI 316 stainless steel for the most corrosive environments • Super-heavy double wrapped tested for short circuit applications up to 71.5kA | <ul style="list-style-type: none"> • Indoor, outdoor and direct burial • Resistance to chemicals, vibration, radiation, weathering and extreme temperatures • Resistance to extreme temperatures, chemicals, salt-water spray and ultra-violet light • Ships, submarines, aircraft, chemical plants, refineries, industrial facilities, oil rigs and refineries |

| | | | |
|---|---|--|---|
| Pan-Steel® Self-Locking Cable Ties | | | |
| | MLT Series Self-locking head design speeds installation | <ul style="list-style-type: none"> • Self-locking head design speeds installation and locks into place at any length along the tie body • Provides a strong, durable method of cable bundling • Smooth surfaces and rounded edges assures cable protection and worker safety • Available in AISI 304 stainless steel for general-purpose applications • Available in AISI 316 stainless steel for the most corrosive environments | <ul style="list-style-type: none"> • Indoor, outdoor and direct burial • Resistance to chemicals, vibration, radiation, weathering and extreme temperatures • Resistance to extreme temperatures, chemicals, saltwater spray and ultraviolet light • Ships, submarines, aircraft, chemical plants, refineries, industrial facilities, oil rigs and refineries |

Features & Benefits – Pan-Steel® Self-Locking Cable Ties

Panduit® Pan-Steel® Stainless Steel Ties are engineered for safety, productivity and durability by providing round edges and smooth surfaces, easy threading, high loop tensile strength and tight clamping.

Self-Locking Head Construction








Radiall

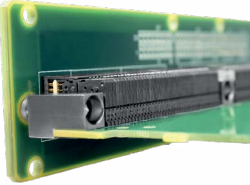

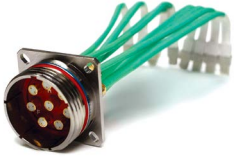


| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|---|
| Modular Rectangular Multipin Connectors | | | |
|  | EPX™ – EN4644 | <ul style="list-style-type: none"> • High density solution compared to circular connectors • High modularity with many shell sizes • Combines compactness and very high density • Wide range of contacts covering any technology • Time savings and cost effectiveness | <ul style="list-style-type: none"> • Panel integration on EWIS applications • Disconnect panel, rack and panel • Galley applications • Line Replaceable Unit (LRU) • Line Replaceable Module (LRM) |
| Rack And Panel Multipin Connectors | | | |
|  | NSX – ARINC 600 | <ul style="list-style-type: none"> • Mix and match selective plated contacts • Cost effective inserts • Fully qualified under Arinc 600 specifications • RoHS compliant, environmentally friendly solution • Widest range of Arinc 600 connectors on the market | <ul style="list-style-type: none"> • Avionics bay on commercial airplanes • Line Replaceable Unit (LRU) |
| Miniature Multipin Connectors | | | |
|  | QUICKFUSIO™ | <ul style="list-style-type: none"> • Lightweight design with only 20 grams per pair • Extreme compactness and contact density • Tool-less locking slide, one finger mating • 10 Gb/s version available, outstanding signal integrity | <ul style="list-style-type: none"> • Perfect connector solution for EWIS and cabin interior • Seat actuation systems • In-Flight Entertainment (IFE) • In-seat power supply and network • Lighting and Passenger Service Units (PSU) |
| High Density MT Based Connectors | | | |
|  | C-MTitan™ and Q-MTitan™ ARINC 846 | <ul style="list-style-type: none"> • High density of standard MT ferrule (12 or 24 fibres) • Innovative design to protect the MT ferrule • Durability up to 500 mating cycles • Fits size 8 Quadrax cavity • Base design for the industry standard: ARINC 846 • Robust and cost-effective solution per optical channel | <ul style="list-style-type: none"> • Radars • In-Flight Entertainment (IFE) • Displays • Unmanned aircraft |
| Active Optics | | | |
|  | D-Lightsys® transceivers, F-Light, WildcatFMC | <ul style="list-style-type: none"> • Data rate up to 10 Gbps • Use 850 nm VCSEL emitters • Low power consumption • Compatible with vibration up to 50GRMS • Operating temperature range -40°C to +95°C • Very small form factor | <ul style="list-style-type: none"> • Avionics • Radars and on-board electronic warfare systems • In-Flight Entertainment (IFE) • Heads Up Display (HUD) • High speed data networking • Power and flight management |
| Optical Interconnect Solutions | | | |
|  | LuxCis® ARINC 801/EN4639-101 | <ul style="list-style-type: none"> • Complete ruggedized product range • Includes hybrid and hermetic connectors • Singlemode APC version with excellent performance • High density solution (circular #25 fits 32 channels) • Wide range of MIL-DTL-38999 with LuxCis® contacts • Hybrid and hermetic harnesses available | <ul style="list-style-type: none"> • Avionics • In-Flight Entertainment (IFE) • Heads Up Display (HUD) • Power and flight management • Radar (RF over fibre) • Sensors |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|--|
| RF Coaxial Connectors | | | |
|  | SMP, SMPM, SMPW, SMP-LOCK, TNC Self-Lock, SMA, BMA | <ul style="list-style-type: none"> • Frequency range available up to 100 GHz • Locking connectors for high mechanical stress • Hermeticity guaranteed, leak rate less than 10-8 cc/sec • Smallest board-to-board x-band solutions • High misalignment board-to-board coaxial links • Size #12 40GHz coaxial contacts for 38999 and multipin | <ul style="list-style-type: none"> • Radar and electronic warfare • Munition • Unmanned aircraft • Airborne multi-mission • Airborne surveillance |
| RF Cable Assemblies | | | |
|  | Hand-Formable, Semi-Rigid, SHF | <ul style="list-style-type: none"> • SHF ultra low loss, optimized up to 67GHz • Phase matching option, typical $\pm 0.28^\circ/\text{GHz}$ • Armoured, lightweight and airframe versions • Short-bend solutions for limited space • Hermetically-sealed cable assemblies • Ultra flexible SHF cable, flexure life cycle 140,000 | <ul style="list-style-type: none"> • Radar and electronic warfare • Munition • Unmanned aircraft • Airborne surveillance • Naval radar systems |
| Optical Interconnect Solutions | | | |
|  | Luxcis® Arinc 801, Q-MTitan™ Arinc 846, ExoBeam™, EB-Luxcis®, D-Lightsys®, F-Light | <ul style="list-style-type: none"> • Ruggedized FO contacts for 38999 and multipin • High density MT based size #8 sealed contact • Single-mode APC contacts: IL 0.1dB / RL > 65dB • Free-space optical, data rates up to 5Gbps • Expanded Beam solutions, up to 3000 mating cycles • MT ferrule solutions to withstand -55°C to +105°C | <ul style="list-style-type: none"> • Radar and electronic warfare • Munition • Unmanned aircraft • Airborne multi-mission • Airborne surveillance • Tactical radio systems |
| Multipin Mil-Aero Connectors | | | |
|  | EPXB2, MPX, DSX, QuickFusio™ | <ul style="list-style-type: none"> • Weight and space saving rectangular connector solutions • High temperature range solutions -65°C to +150°C • Quick mate miniature connector easy to install • Salt spray resistance 500 hours • High density connectors for limited space • Permanent sealing when the connector is installed | <ul style="list-style-type: none"> • Radar and electronic warfare • Munition • Unmanned aircraft • Airborne multi-mission • Airborne surveillance |
| RF and Microwave Components | | | |
|  | Terminations, Attenuators, Power Divider, Quartz Relays, RF Couplers and Coaxial switches | <ul style="list-style-type: none"> • Frequency range from DC up to 67 GHz • Power up to 1000 W • Qualified for harsh environments per MIL-DTL-39030 • High RF performance, robust design • SM RF relay featuring 5 million typical switching cycles | <ul style="list-style-type: none"> • Radar and electronic warfare • Munition • Tactical radio systems • Airborne multi-mission • Naval radar systems |
| Antennas | | | |
|  | GNSS Antennas, Radio Antennas | <ul style="list-style-type: none"> • Form factors available: whip, blade and overmolded • Wide radio range: VHF, UHF, L and S Band • Suitable for harsh environmental conditions • Sealed IP67/68 • Multi GPS frequencies: L1/L2, Galileo, Glonass, Beidou | <ul style="list-style-type: none"> • Tactical radio systems • Soldier radios |

Smiths Interconnect

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|--|
| HPH and HPW Series | | | |
|  | High and Medium density Signal & Power PCB Connectors | <ul style="list-style-type: none"> • 20 to 303 contact positions • Mixed power & signal PCB connectors • Qualified at a system level on both civil and military programs • Low contact resistance under high levels of shock and vibrations and over 2000 mating cycles | <ul style="list-style-type: none"> • Harshest environments of the commercial aerospace and defense markets. |
| High reliability 2mm / cPCI connectors | | | |
|  | NASA approved rugged 2mm footprint cPCI backplane system | <ul style="list-style-type: none"> • Interchangeable with cPCI COTS Systems • Modular design for standard 3U/6U configurations immune to shock and vibration fretting • Available in NASA GSFC qualified versions • Reverse gender to commercial 2mm products • Keying feature for proper mating • Qualified for space flight under NASA-GSFC specs S311-P-822, EEE-INST-002 | <ul style="list-style-type: none"> • Industrial • Commercial aerospace • Defense • Instrumentation • Data acquisition • Communications • Machine control • Human machine interfaces |
| MIL-DTL-55302 Compliant PCB Connectors – KN | | | |
|  | High reliability NASA and ESA qualified 55302 compliant connectors with mixed signal, power and coaxial contacts | <ul style="list-style-type: none"> • Over 2,500 models can be constructed with available components • 0.60 diameter pins/sockets rated at 4 Amps • Straight dip, right angle solder, crimp, solder cup and Wire Wrap® terminations • Alignment and keying provided by the end guides – 36 combinations • Immunity to shock and vibration fretting • Average insertion/extraction force of 1 ounce per contact" | <ul style="list-style-type: none"> • Cockpit, engine and flight controls and in-flight entertainment (IFE) • Avionics engine controls and fire control systems • Missiles, missile detection and guidance • Military ground support, ship-board torpedoes and communications equipment • International space station, spacecraft/satellites |
| High Density PCB Signal Connectors – CMD Series | | | |
|  | High density standard MIL compliant PCB connectors designed for high performance applications in harsh environments | <ul style="list-style-type: none"> • Conforms to MIL-DTL-55302 general requirements and TPR 02013 • High shock and vibration proof (no micro interruptions – test: 2ns) • 0.6mm contact diameter, available from 42 to 316 contact positions • Immunity to detrimental fretting due to shock and vibration • High contact density and lightweight connector | <ul style="list-style-type: none"> • Aerospace, military/defense: conforms to MIL-DTL-55302 • Space: CSD conforms to ESA ESCC 3401 |
| Filter Circular and D-Sub Connectors | | | |
|  | Filter Circular and D-sub Connectors in compliant with the most stringent requirement of military standards | <ul style="list-style-type: none"> • MIL-DTL-24308, MIL-DTL-26482, MIL-DTL-83723 and MIL-DTL-83513 filter connectors EMI/RFI filtering and transient protection | <ul style="list-style-type: none"> • Designed to meet or exceed all applicable requirements of the military specifications |
| HDLP Series | | | |
|  | High density, low profile, lightweight PCB signal connectors | <ul style="list-style-type: none"> • Up to 2000 mating cycles • Polarized and scoop proof insulator • Low component count & low insertion force • IP67 sealing when mated • Featuring Hypertac® hyperboloid contact technology" | <ul style="list-style-type: none"> • Specifically designed for applications where space and weight is at a premium for board to board interconnections. |
|  | We integrate the highest performance contact technologies into a broad range of high power, high speed quadrax/twinax, fibre optic, EMI/EMP filter, spring probe interconnect solutions. | | |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|---|
| Miniature Snap Fit Connectors – SnapTac® Series | | | |
|  | Lightweight, robust, quick release, miniature connector designed to meet demanding specifications | <ul style="list-style-type: none"> Available in both circular (7, 13, 19 way) and rectangular (12, 21, 30 ways) Equipped with Hypertac Hyperspring contacts IP67 sealed according to IEC529 when mated and unmated, EMI shielding Offered with and without over-moulding and cabling | <ul style="list-style-type: none"> Demanding defense market programs, including communication and identification/recognition |
| High density ESA qualified PCB connectors – MHD/MDD/MDP Series | | | |
|  | ESA qualified, high density board to board and board to wire interconnect available in up to 400 positions mixing signal, power and coaxial contacts | <ul style="list-style-type: none"> SA qualified: ESCC 3401/065 available from 52 to 400 signal contacts with straight, surface mount tail and 90° termination styles support up to 32 power or coaxial contacts (2.00 contact diameter) Two housing versions: ruggedized metal shell and plastic shell Signal and HE 807 cavities for power and coaxial contacts | <ul style="list-style-type: none"> Designed for the harshest environments of commercial aerospace ESA satellites |
| Rugged High speed, VITA Backplane Connector System – KVPX Series | | | |
|  | Shielded, high-density, high-speed, modular interconnect system that provides unrivalled performance in harsh environments while adapting to the VITA standard design requirements | <ul style="list-style-type: none"> Compatible with VITA 46, 47 and 78 (space) standards High Speed up to 16 Gbps Flexible modular design for standard 3U and 6U as well as custom configurations Faceplate to protect daughter card pins; press-fit termination | <ul style="list-style-type: none"> Intelligence, Surveillance and Reconnaissance (ISR) Signals Intelligence (SIGINT) Radar applications Electronic Counter Measures (ECM) |
| Twinax and Quadrax high-speed rugged D-Sub Series | | | |
|  | High impedance D-Sub connectors designed to ground the outer shield of a twinax or quadrax contact directly to the shell of the connector | <ul style="list-style-type: none"> Low RF noise and high durability over 500 mating cycles Offered with 100 ohm quadrax and/or differential pair twinax contacts Meet MIL-STD-202 requirements for shock and vibration Optimized impedance matching for signal integrity Cable assembly options available | <ul style="list-style-type: none"> High speed applications of defense, space and commercial aerospace markets |
| Differential MIL-DTL-38999 Twinax and Quadrax Connectors | | | |
|  | MIL-DTL-38999 Quadrax/Twinax connectors with data rates up to 3 Ghz for board-to-board high speed data transfer | <ul style="list-style-type: none"> Bandwidth up to 3 GigaHertz Cable assembly options available High speed matched impedance data-on-demand applications High speed data filters: Quadrax and Twinax High speed multi-contact MIL-DTL-38999 compliance QPL plug sub assembly MIL-DTL-38999 compliance | <ul style="list-style-type: none"> Ideal for reliable, high-speed transfer of digital audio/video signals in defense, space and commercial aerospace markets |
| Spring Probe Interposers and Connectors | | | |
|  | Spring probe technology in custom interposers and connectors | <ul style="list-style-type: none"> Low profile, high compliance ratio High insertion life Suited for blind mate connections Ideal for high shock and vibration environments From few to over 300 contact positions Contact termination: solder cup, straight Through Board Solder (TBS) | <ul style="list-style-type: none"> Defense: communication and radar Space: satellites GEO and MEO and launchers |

| Product | Series & Description | Features & Benefits | Applications |
|---|---|--|--|
| EN3646/MIL-C-26462 Series II Connectors | | | |
|  | 852 Series Bayonet coupling lightweight connectors | <ul style="list-style-type: none"> • Quick mating – bayonet coupling • High contact density – up to 61 contacts #20 • High performance shielding – Metal housing and 360° teeth option • Various PC tail contacts length, with backshells, shunted available. • High sealing – fuel tank, resin sealed, hermetic available | <ul style="list-style-type: none"> • Airframe pressurized area • Aircraft cabin/IFE • Fuel management • Military aerospace systems • Radar and detection |
| EN2997 / ESC Qualified Connectors | | | |
|  | 853 Series High temperature fire wall connectors | <ul style="list-style-type: none"> • High temperature – up to 260°C (500°F) and 20 minutes in fire • Corrosion resistance – 500 hours salt spray • Upgraded vibration performances – Self locking coupling mechanism • EMI resistance – 65dB and 40kA lightning indirect peak • Qualified per ASD Cert EN2997 and ESC. Based on MIL-83723 Series III with additional features • Integrated backshell version available | <ul style="list-style-type: none"> • Power and actuation • External lighting • Landing gear • Fuel management • Sensors • Engines |
| MIL-DTL-38999 Series I and VG96912 Connectors | | | |
|  | 8LT and 8ST Series MIL spec aerospace and military bayonet connectors | <ul style="list-style-type: none"> • Quick and secure mating – 3 point bayonet locking system • Mis-mating, error proof positioning – 5 keyway polarization positions • Large choice of insert arrangements • 7 different shell types available • RoHS version available • PCB contacts available in standard or potted connector for high sealing | <ul style="list-style-type: none"> • Civil and military aerospace • Marine equipment • Communications equipment • Medical instrumentation • Test equipment • Ground military |
| MIL-DTL-38999 Series II connectors | | | |
|  | 8T Series MIL spec low profile bayonet connectors | <ul style="list-style-type: none"> • Wide range of shell sizes & layouts. High contact density, up to 128 • Fast and secure mating – Bayonet quick coupling, audible, sensitive and visible coupling • Lightweight, lower profile connector design (30% shorter than 8LT) • EMI shielding and high resistance to vibration and fluids • RoHS QPL approved cadmium-free alternative | <ul style="list-style-type: none"> • Civil and military aerospace • Missiles and weapons systems • Armoured carrier and tanks • Communication equipment • Medical instrumentation • Marine equipment |
| MIL-DTL-38999 Series III Standard Connectors | | | |
|  | 8D Series MIL spec aerospace and defense connectors | <ul style="list-style-type: none"> • Metal contact retention clip – vibration and high temperature resistance • Standardized insert for all series metal clip – better availability and flexibility • Wide contact platform metal clip – a large array of different contact technologies available • RoHS compliant finish – QPL approved cadmium-free alternative • Miniature version also available: micro38999 | <ul style="list-style-type: none"> • Civil aeronautics • Military aeronautics • Defense • Ground military • Industrial – railway • Marine – offshore |
| MIL-Spec Backshells | | | |
|  | AS85049 Backshells Strain relief, band adapter, EMI/ RFI for MIL-Spec connectors | <ul style="list-style-type: none"> • AS85049, D38999 & MS Qualified • 2 self-locking mechanisms to withstand high vibrations • Lightweight aerospace grade aluminium and composite • Surface finishes compliant with environmental regulations • Signal integrity – EMI/RFI protection and corrosion resistance | <ul style="list-style-type: none"> • Civil aviation • Military aviation • Ground transport • Ground army • Military marine • Industry |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|--|
| Fiber Optics | | | |
|  | <p>Fiber Optic Products for Rugged Applications Rugged end-to-end solutions for more bandwidth, more distance, more performance</p> | <ul style="list-style-type: none"> • Gigabit Ethernet data transmission components • HD and 3D video uncompressed transmission components and modules • Serial and analogue data transmission solutions • Chassis-based systems for maximum flexibility and aggregation of all data protocols over fiber | <ul style="list-style-type: none"> • Commercial aerospace • Military • Military marine • Marine oil and gas |
| Optical Modules for VITA 66 | | | |
|  | <p>VPX standard rugged optical system VITA 66.1 / .2 / .3</p> | <ul style="list-style-type: none"> • MT array connectors • ARINC 801 termini • Expanded beam option • Up to 248 fibers in a 6U system | <ul style="list-style-type: none"> • Embedded computing • Avionics • C4ISR • Space • Inflight entertainment • Unmanned aerial vehicles |
| Identification solutions | | | |
|  | <p>Wiring identification and labelling Cable labels, markers, tags and printers</p> | <ul style="list-style-type: none"> • Designed for the most rigorous indoor or outdoor use • You can choose from an array of flexible options including adhesive-backed labels • Printable heat-shrink tubing • Cable markers and hardware/software systems for onsite customization | <ul style="list-style-type: none"> • Aerospace • Rail – trains and trackside • Defense • Industrial equipment • Infrastructure installations |
| Backshells | | | |
|  | <p>Circular Backshells Unscreened and screened backshells and Hexashield</p> | <ul style="list-style-type: none"> • Two-part components • Simple and fast termination • Low profile • Boot groove for lip of sealing boot • Variety of sizes and types • Rotating coupling nut – uncouple for repairs without damaging the boot • Low manufacturing cost • Uniform boot recovery – saves space • Strain-relief & sealing against environment • Fits various shell sizes and platings | <ul style="list-style-type: none"> • Repair • Sealing • Strain relief • EMI protection |
| MULTIGIG RT Connectors | | | |
|  | <p>MULTIGIG RT 3 and RT 2-S VPX advances with TE MULTIGIG RT connector platform</p> | <ul style="list-style-type: none"> • Data transfer rates to 32+ Gb/s • Modular design with backward interoperability • Ruggedized multipoint contact system meets VITA vibration standards | <ul style="list-style-type: none"> • Military electronics/C4ISR • Avionics • Ground defense • Missile defense • Space |
| CeeLok FAS-T Connectors | | | |
|  | <p>10 Gb/s Ethernet Connectivity, compact, rugged and reliable</p> | <ul style="list-style-type: none"> • 1Gig-E to 10Gig-E • Small, lightweight and rugged • Field terminable • Mil-38999 style size 8 • Simple shield termination options • Modular and scalable | <ul style="list-style-type: none"> • Military • Commercial aircraft |



TE Connectivity


| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|---|
| MICRODOT Connectors | | | |
|  | Small Form Factor Connector Series Durability & Flexibility | <ul style="list-style-type: none"> • Adaptable to a numerous variety of form factors • Low engaging force is achieved by the manner in which Twist Pin Contacts are designed • The metal shell and plastic shell are available with solder cup and solid or stranded wire terminations • Mating force maximum is 10oz. [2.78N] times the number of contacts • Durability • Current rating – 3 amps max per contact | <ul style="list-style-type: none"> • Military • Space • Downhole offshore oil and gas • Geophysical exploration • Commercial satellites • Commercial aerospace |
| AD&M High Performance Wire and Cable | | | |
|  | SPEC 44, SPEC 55 Wire and FlexLite Cables | <ul style="list-style-type: none"> • Reduced size and weight • Shortened design cycle • Increased reliability • Design for manufacturability • Custom designs offer optimal solutions | <ul style="list-style-type: none"> • Special vehicles • Commercial aerospace • Motorsports • Space • Ground defense • Marine |
| Heat Shrink Tubing | | | |
|  | Protect from abrasion, corrosion and noise | <ul style="list-style-type: none"> • Spool lengths, non-standard cut lengths, expanded/recovered I.D.s • Multiple products are offered in flame-retardant (FR) versions • Meet AS23053 and MIL-PRF-46846 standards – single wall • Comply with AS23053 standards – dual wall, heavy duty, harnessing and specialty • Most are UL recognized/CSA certified • Custom specs and tolerances | <ul style="list-style-type: none"> • Single wall tubing • Dual wall tubing • Heavy duty tubing • Harnessing tubing • Auto & truck heat shrink tubing • Specialty tubing |
| High Performance Relays and Contactors | | | |
|  | Flipping the switch on relays | <ul style="list-style-type: none"> • Designed specifically to operate in extremely rigorous environments • Includes COTS (commercial off-the-shelf), Mil-Spec, plus highly specialized and custom-designed products • Designed to withstand extreme shock, vibration, temperature and altitude • Hermetically sealed • Qualified to QPL L, M & P levels | <ul style="list-style-type: none"> • Aerospace • Defense • Space • Alternative energy and hybrid drives • Special vehicles |
| Axicom IM Relays | | | |
|  | <ul style="list-style-type: none"> • 50 – 200mW coil power, often also bistable (latching) versions • SMT design for reflow soldering is common • Small in size • Typically 2 form C contacts • 2A/ max 5A rated current • High contact reliability • Low and stable contact resistance | <ul style="list-style-type: none"> • Data communications, telecom, consumer and office • Equipment, intelligent buildings and medical • Network systems • Modems • Test equipment • Wireless infrastructure • Antenna switching • High speed routers • Medical ultrasound equipment • Printers • IP phones • Thermostats • Emergency lighting • Fire & security control • Cameras | |

| Product | Features & Benefits | Applications |
|---|--|--|
| AXICOM HF Relays | | |
|  | <ul style="list-style-type: none"> • Frequency range DC to 6 GHz • Impedance defined at 50 and 75 Ohm • Scalable design, Small size, simple circuitry • Excellent isolation by gas isolated open contacts • Low insertion loss through metal contacts • No signal distortion by switching device • Hot switching capability • High power carry capability • Fully automated, no touch, highly repeatable manufacturing to ensure high quality | <ul style="list-style-type: none"> • Antenna switching • Channel selection • Power amplifiers • Instrumentation • Hi-speed test systems • Satellite/audio/video tuners • Wireless base stations and antennas • Cable modems and line cards/CATV |
| ESAP-ESA PROBE-400601408 (TE Part number GAG15K4D489) | | |
|  | <p>Surface Sensor for High rel & Aerospace</p> | <ul style="list-style-type: none"> • Matched Glass Coated NTC Thermistor Beads mounted on an aluminum alloy housing and encapsulated in Epoxy Resin. • Wire connection by 26AWG stranded / insulated leads. • Lead wire in accordance with ESCC Detail Specification no. 3901/012 variant 03 • Temperature range -60°C to +160°C |
|  | <p>Surface Mount Sensor for Constellation Aerospace applications</p> | <ul style="list-style-type: none"> • Glass Coated NTC Thermistor Bead with 15K Ohms nominal at +25°C • 26AWG 19/36 SPC with black cross-linked fluoropolymer insulation • Proven stability and reliability • Encapsulated in thermally conductive epoxy resin |
| Probe, Surface Mount 15K4 (TE Part number 20012616-00) | | |
|  | <p>Miniature Pressure Transducer</p> | <ul style="list-style-type: none"> • Aerospace & defense • Rocket engines • Downhole exploration • Test benches • Cooling regulation systems |
|  | <ul style="list-style-type: none"> • Small size & light weight • Pressure ranges available up to 700 bar (10,000 PSI) • Gage and absolute pressure references • Operating temperature up to 150 °C • Variety of pressure ports • 0.5 to 4.5V or 4-20mA amplified output | <ul style="list-style-type: none"> • Aerospace & defense • Rocket engines • Downhole exploration • Test benches • Cooling regulation systems |
| EPRB-2 Miniature Pressure Sensors | | |
|  | <p>High temperature miniature pressure sensor</p> | <ul style="list-style-type: none"> • Aerospace & defense • Oil and gas • Engines • Test benches • Cooling regulation systems |
| <ul style="list-style-type: none"> • Operating temperature range of -40 to 220 °C • Small size & light weight • For static and dynamic applications • Pressure ranges available up to 500 Bar (7500 PSI) • Linearity up to +/-0.25 FS • Optional IP67 ingress protection • Low installation torque sensitivity | <ul style="list-style-type: none"> • Aerospace & defense • Oil and gas • Engines • Test benches • Cooling regulation systems | |
| XPC10 Miniature Pressure Sensors | | |



TE Connectivity



| Product | Series & Description | Features & Benefits | Applications |
|---|--|---|--|
| High Reliability Potentiometers | | | |
|  | <p>Rotary potentiometers are a type of rotary position sensor that provides the position feedback signal of a rotating shaft or object. TE Connectivity (TE) sensors are available in standard options, as well as offering customized solutions for your design needs.</p> | <ul style="list-style-type: none"> • Industrial / Military Grade Rotary Position Sensor • Rotational Operating Life 100 x 10⁶ Revolutions Min. • Anodized Aluminum Housing • Stainless Steel Shaft & Ball Bearings • General Requirements IAW MIL-PRF-39023 | <ul style="list-style-type: none"> • Fin actuation • Flight controls • Valve position measurement • Aircraft Cockpit Instruments • Weapons Guidance Systems • Remote Piloted Vehicle Actuators • Vehicle Joysticks • Space Launch Fuel Controls • Space Craft Position Sensing Requirements • Space Craft Landing Leg Position Sensing |






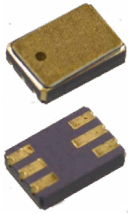

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Learn more about our efforts and proactive steps protect the environment and ensure a sustainable future.



[LEARN MORE](#)



| Description & Product | Features & Benefits | Applications | |
|---|--|---|---|
| MIL PFC Resistors | | | |
|  | MIL PFC Resistors | <ul style="list-style-type: none"> • Now qualified to MIL-PRF-55342 Space Level T • Four industry standard sizes available • MIL-PRF-55342 Characteristics E, H, K, and M • MIL-PRF-55342 extended reliability levels C, M, P, R, S and T | <ul style="list-style-type: none"> • Analogue circuits • Signal amplification • Sensor signal input processing • A-D conversion |
| OMH3075B / OMH3075S | | | |
|  | OMH3075B / OMH3075S – Hall effect Magnetic Sensor, ceramic package | <ul style="list-style-type: none"> • Designed for non-contact switching operations • Operates over a broad range of supply voltages • Excellent temperature stability operates in harsh environments • Suitable for military and space applications • B and S versions are processed and screened to MIL-STD-883 | <ul style="list-style-type: none"> • Non-contact switching operations • Brushless DC motors • Multiple pole magnets • Assembly line automation • Machine automation • Home sensor for actuators Fins sensors |
| OP224S / OP604S | | | |
|  | OP224S / OP604S – Space level hermetically sealed pill-package IR pair | <ul style="list-style-type: none"> • Hermetically sealed package • Mechanically and spectrally matched to each other • Designed for direct mount to PCBoard • Operating temperature range -65 C to +125C • Narrow beam angle | <ul style="list-style-type: none"> • Critical position sensors for all moving parts in satellites • Door interlocks • Non-contact reflective object • Sensor • Machine automation • Machine safety • End of travel sensor |
| 4N49U / 4N49UTX and JANTX4N49U | | | |
|  | 4N49U / 4N49UTX and JANTX4N49U – SMD optical isolator – hermetically sealed ceramic package | <ul style="list-style-type: none"> • Surface Mount (SM), Leadless Chip Carrier (LCC) • 1 kV electrical isolation • Base contact provided for conventional transistor biasing • TX and TXV devices processed to MIL-PRF-19500 | <ul style="list-style-type: none"> • Analogue feedback for power supplies • Military equipment • High-Reliability environments • High voltage isolation between input and output • Electrical isolation in dirty environments • Signal isolation |
| 3C92CTX | | | |
|  | 3C92CTX – through hole optical isolator – hermetically sealed metal can TO-72 | <ul style="list-style-type: none"> • TO-72 hermetically sealed package • 1 kVDC electrical isolation • High current transfer ratio • TX devices processed to MIL-PRF-19500 • Operating temperature range -55 deg. C to +125 deg. C | <ul style="list-style-type: none"> • Analogue feedback for power supplies • Military equipment • High-Reliability environments • High voltage isolation between input and output • Electrical isolation in dirty environments • Electrical isolation of microelectronic signals |
| New Space Electronics® | | | |
|  | New Space Electronics® Industry recognised recognisable discrete components alongside standard multi-chip array configurations. | <ul style="list-style-type: none"> • Fully traceable die, with space grade heritage • Known radiation performance • High reliability and reduced cost solution • Made and tested in accordance with MILSTD-19500 and ESCC specifications • Environmental screening to meet mission requirements | <ul style="list-style-type: none"> • Survivable systems • Communication systems • Navigation systems • Power rectification • Amplifiers |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|--|
| MIL-PRF-55342 Qualified Thick Film Chip Resistor | | | |
|  | RCWPM (Military M/D55342) Thick Film Chip Resistors, Military/Established Reliability MIL-PRF-55342 Qualified, Type RM | <ul style="list-style-type: none"> Fully conforms to the requirements of MIL-PRF-55342 Established reliability – verified failure rate; M, P, R, U, S, V and T levels Construction is sulfur impervious against a high sulfur environment (ASTM B 809-95 test method) 100% group A screening per MIL-PRF-55342 Termination style B – tin / lead wraparound over nickel barrier | <ul style="list-style-type: none"> Aircraft Avionics Missile systems Surveillance Communication systems Naval vessels |
| MIL-PRF-55342 Qualified Thin Film Chip Resistor | | | |
|  | E/H T-Level Military M/D55342 QPL MIL-PRF-55342 Qualified Thin Film Resistor, Surface-Mount Chip | <ul style="list-style-type: none"> T-level (space) qualified Passes outgassing requirements of ASTM-E595 TCR to $\pm 25\text{ppm}/^\circ\text{C}$ Tolerances to $\pm 0.1\%$ 100% power conditioning | <ul style="list-style-type: none"> Aircraft Avionics Satellites Missile systems Weaponry and other combat equipment Space exploration |
| MIL-PRF-55342 Qualified Thin Film Chip Resistor | | | |
|  | E/H (Military M/D55342) QPL MIL-PRF-55342 Qualified Thin Film Resistor, Surface-Mount Chip | <ul style="list-style-type: none"> Established reliability, ‘S’ and ‘V’ failure rate level (10ppm), C = 2 High purity alumina substrate Wraparound termination featuring a tenacious adhesion layer covered with an electroplated nickel barrier layer for +150°C operating conditions Very low noise and voltage coefficient (< -25dB, 0.5ppm/V) Non-inductive Laser-trimmed tolerances $\pm 0.1\%$ | <ul style="list-style-type: none"> Missile/air flight control Communication systems Ground support radar Guidance and navigation control |
| Space Grade Composite Power Inductors | | | |
|  | SGIHLP New Space Grade SGIHLP - MIL-STD-981 class S compliant | <ul style="list-style-type: none"> Meet the requirements of MIL-STD-981 class S High operating temperature to +180°C Magnetically shielded construction Rugged package Available in 7 case sizes | <ul style="list-style-type: none"> Low profile, high current power supplies High current POL converters DC/DC converter in distributed power systems “Flight-ready” solar inverters Noise suppression filters |
| High Precision Wraparound Thin Film Chip Resistors | | | |
|  | P Wide Ohmic Value Range resistors | <ul style="list-style-type: none"> Load life stability 0.02% typical at 8000h at 70°C under Pd Low temperature coefficient down to 5ppm/°C (-55°C; +155°C) Very low noise < -35dB and voltage coefficient < 0.01ppm/V Wide resistance range: 10Ω to 86MΩ depending on size Tolerances down to $\pm 0.01\%$ Sulfur resistant | <ul style="list-style-type: none"> Avionics Military Space Industrial Medical |
| High-Precision Thin Film Chip Resistor Arrays | | | |
|  | PRA Sulfur Resistant, High-stability and High-precision Resistor Arrays | <ul style="list-style-type: none"> Networks of 2 to 8 resistors, with same or different ohmic values (Custom PRA network) Unique ultra-stable resistive layer: 0.02% drift on ratio after 1000 hours at nominal power at 70°C Tight TCR (10ppm/°C) and TCR tracking (down to 1ppm/°C) Very low noise < -35dB and voltage coefficient < 0.01ppm/V Ratio tolerance down to 0.01% Sulfur resistant | <ul style="list-style-type: none"> Instrumentation Calibration Data conversion Avionics, military and space |

| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|---|
| ESCC Qualified High Precision Thin Film Chip Resistors | | | |
|  | PFRR ESCC 4001/023 Qualified R failure rate thin film chip resistors | <ul style="list-style-type: none"> • ESA qualified • TCR down to 10ppm (-55°C to +155°C) • Tolerances down to 0.05% • Load life stability: less than 0.25% at Pn at 70°C after 2000 hours • Resistance range: 100Ω to 3,01MΩ • Very low noise (< -35dB) and voltage coefficient (< 0.01ppm/V) | <ul style="list-style-type: none"> • Space • Military • Medical |
| High-Temperature, High-Precision Wraparound Thin Film Chip Resistors | | | |
|  | PHT Sulfur resistant, high stability, high temperature thin film wraparound chip resistors | <ul style="list-style-type: none"> • Operating temperature range of -55°C to +215°C • Storage temperature range of -55°C to +230°C • Temperature coefficient down to 25 ppm (-55°C to +215°C) • Tolerance down to 0.05% • Wide ohmic range (10Ω – 7,5MΩ) • Load life stability: 0.35% max. after 2000h at 220°C (ambient) at Pn | <ul style="list-style-type: none"> • Down hole drilling instruments • Avionics and military (braking systems) |
| CH Microwave Resistor | | | |
|  | CH High frequency 50 GHz thin film chip resistor | <ul style="list-style-type: none"> • High Frequency performances up to 70GHz • 02016, 0402 and 0603 sizes available • All sizes available in tape and reel packaging • Single side termination (Flip Chip) available • Large resistance range from 10Ω to 500Ω | <ul style="list-style-type: none"> • 5G base stations and small cells • RF & microwave test systems • Internet Of Things (IoT) • Connected cars, automotive RADARS • Space and satellite radio-communication systems |
| Electro-Pyrotechnic Initiator Thin Film Chip Resistor | | | |
|  | EPIC The electro-pyrotechnic initiator thin film chips (EPIC) are resistors dedicated to pyrotechnic applications | <ul style="list-style-type: none"> • Predictable, reproducible and reliable behaviour • Firing energy down to 50μJ • Very fast firing time down to 50μs • No fire/all fire ratio up to 70% • Surface mount design for standard assembly process | <ul style="list-style-type: none"> • Automotive safety systems • Pilot seat ejection systems • Explosive bolt disengagement of airborne missiles • Projectile activators • Mining and demolition • Fireworks |
| Polymer Capacitors for High Reliability Applications | | | |
|  | T54/T56 Hi-Rel COTS, DLA offering | <ul style="list-style-type: none"> • High Reliability Screening • Stacked version combine high capacitance (up to 2800μF), high voltage (up to 75v) and low ESR (down to 5 mΩ) in a single package. • Leading edge CV offering • Double anode structure for very low ESR • L-Shape termination available | <ul style="list-style-type: none"> • Decoupling, Filtering and Energy Backup for military and space application: Airplanes, Ground Vehicules, Power conversion, LEO Satellites. • Flight Controllers / Transponders / IFF-Systems / Laser / Phased Array Radars |
| Automotive Grade Polymer Capacitors | | | |
|  | T51 Designed for harsh environment conditions | <ul style="list-style-type: none"> • AEC-Q200 qualified (PPAP available) • High humidity performance: • Certified to 85°C/85%RH/1000h at Ur • Operating Temperature up to +125°C | <ul style="list-style-type: none"> • Decoupling and filtering applications in harsh conditions • Power conversion for military vehicles, Avionics and LEO Satellites. |



| Product | Series & Description | Features & Benefits | Applications |
|---|---|---|---|
| Military Qualified Tantalums | | | |
| | Wet, Solid, Polymer MIL/DLA/CECC | <ul style="list-style-type: none"> • Polymer Tantalum: MIL-PRF-32700 & MIL-PRF-04051 • Solid Tantalum MnO2: MIL-PRF-55365 & MIL-PRF-39003 • Wet Tantalum: MIL-PRF-39006 & High energy axials | <ul style="list-style-type: none"> • Power Conversion in Orbit Space • Missile Systems • Military Aircraft • Radar Systems • Avionics • Energy Backup • Actuators • Military Vehicles |
| Hermetically Sealed SMD | | | |
| | T27 and T22 Series | <ul style="list-style-type: none"> • High Energy Density • High reliability test options • Long term stability • Hermetically Sealed | <ul style="list-style-type: none"> • Space / Satellite Systems • Power Conversion • Energy Backup • Missile Systems |
| HI-REL COTS Solid Tantalum SMD | | | |
| | T83, T97, T98 Series | <ul style="list-style-type: none"> • Extended capacitance • Molded and Conformal case • Hi-rel screened • Tin/lead terminations available • Built in fuse series available | <ul style="list-style-type: none"> • Radars • Communication • Military Aircraft • Ammunition • Power Conversion & Distribution • LEO Satellite Systems |
| High Energy Wet Tantalum Capacitors | | | |
| | EP Series | <ul style="list-style-type: none"> • Highest capacitance in a single wet tantalum package • Highest energy density • Oper. Temp: -55°C to +125°C • Cap Range: 2.000 µF - 72.000 µF • Voltage Rating: 25 - 125 VDC | <ul style="list-style-type: none"> • Pulse Power • Energy Hold-Up • Military • Avionics • Missile Systems |
| Axial Wet Tantalum Capacitors High Reliability | | | |
| | T16, T18, STH Series | <ul style="list-style-type: none"> • Hermetically Sealed Tantalum Case • 500g shock, 80g sine, • 54g random vibration • 300 thermal shock • Available in DLA 13017 & DLA 15005 • Space Grade series 20001 | <ul style="list-style-type: none"> • Filtering • Switching • Hold-up • Avionics • Military • Space |

| Product | Series & Description | Features & Benefits | Applications |
|---|--|--|---|
| MLCCs for DAS Applications | | | |
|  | MIL-PRF-123 | <ul style="list-style-type: none"> • US defense supply center approved QPL • 4,000 hour life test to qualify @ 125°C and 2X rated voltage • Each production lot passes 1,000 hour life test • Each piece must pass Hot IR with IR measured at 125°C • Each piece must pass an internal structure examination • Aggressive lead-times through TTI | <ul style="list-style-type: none"> • Space systems • Satellite systems • Avionic systems • Sonar systems • Missiles applications |
| MLCCs for DAS Applications | | | |
|  | CDR (MIL-PRF-55681) Established Reliability MLCC | <ul style="list-style-type: none"> • US defense supply center approved QPL • 0402 (CDR37) and 0603 (CDR36) case sizes are available • Failures rate as high as "S" level • Stable BP, BR and BX dielectrics | <ul style="list-style-type: none"> • Mission critical military and aerospace applications • Military Aircraft, vehicles, radios and communication equipment • Radar systems • Satellite systems |
| MLCCs for DAS Applications | | | |
|  | DLA Series 03028, 03029, 05001, 05002, 05003, 05006, and 05007 | <ul style="list-style-type: none"> • US defense supply center approved QPL • 0402, 0603, 0805, and 1206 case sizes available • Includes MLCCs for high frequency applications • Stable BP, BR and BX dielectrics • Excellent aging characteristics • Reliable Noble Metal Electrode (NME) system | <ul style="list-style-type: none"> • Mission critical military and aerospace applications • Military Aircraft, vehicles, radios and communication equipment • Radar systems • Satellite systems |
| Hi-Reliability Series | | | |
|  | Hi-Reliability Series Widest product offering to meet customized requirements | <ul style="list-style-type: none"> • MIL-PRF-55681 qualified production line • Customized testing, certification, and reporting including Group A and Group C available • Reliability maintenance testing to verify consistent quality • Built with Reliable Noble Metal Electrode (NME) system and wet build process | <ul style="list-style-type: none"> • Mission critical military and aerospace applications • Military Aircraft, vehicles, radios and communication equipment • Radar systems • Satellite systems |
| VJ...32 Series | | | |
|  | VJ...32 Series AEC-Q200 Certification with Sn-Pb Termination Finish | <ul style="list-style-type: none"> • Tin / lead termination finish • Minimum 4 % lead for tin whisker mitigation • AEC-Q200 qualified with PPAP available • Available in 0402 to 1210 body size • Reliable Noble Metal Electrode (NME) system and wet build process • NP0 and X7R temperature characteristics | <ul style="list-style-type: none"> • Low earth orbit satellites (LEO) • Tin whisker mitigation • Space / Aerospace • Avionic • Military |



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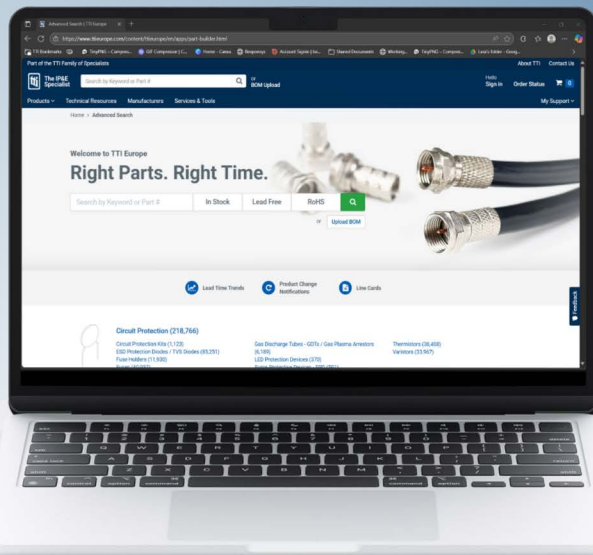
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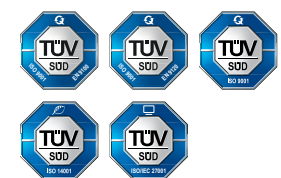
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