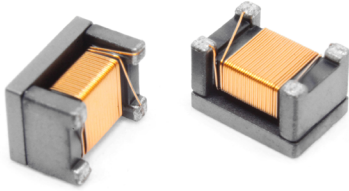


Automotive Chip Choke

EMI Suppression for CAN-Bus Networks

2-Line Common Mode Chokes

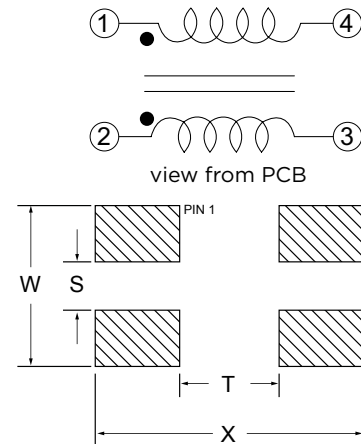
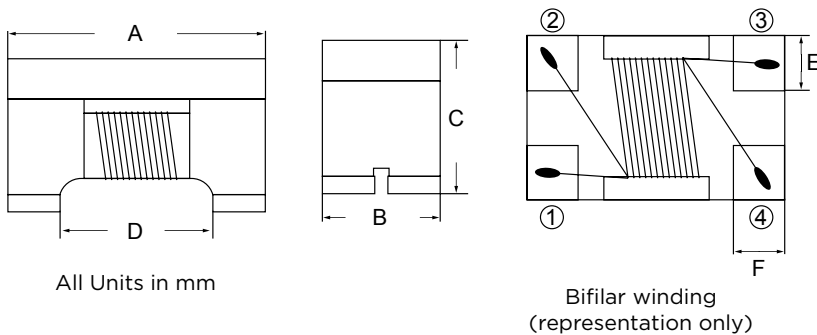


- Ⓜ Meets AEC-Q200 Requirements
- Ⓜ Suppression of common mode noise without attenuating the signal
- Ⓜ Magnetically shielded versions for lower Rdc and higher current
- Ⓜ Supports CAN-Bus, A2B and other IVN high speed differential signal lines (LVDS)

| Electrical Specifications @ 25°C | | | | | | | | | |
|---|-------------------------------|------|-----------------|--------------------|-------------|-----------------------------|-------------|-------------------------------|-----------------------|
| Part Number | Common Mode Impedance (10MHZ) | | Inductance (uH) | Standard Tolerance | RDC (Ω Max) | Leakage Inductance (nH) MAX | IDC (A MAX) | Isolation Resistance (MΩ) Min | Rated Voltage (V) Max |
| | Min | Typ | | | | | | | |
| Operating Temperature Range -40°C to +125°C | | | | | | | | | |
| PE-1812ACC110STS | 300 | 600 | 11 | +50/-30% | 0.5 | 45 | 0.36 | 10 | 50 |
| PE-1812ACC220STS | 600 | 1200 | 22 | +50/-30% | 0.6 | 50 | 0.31 | 10 | 50 |
| PE-1812ACC510STS | 1500 | 3500 | 51 | +50/-30% | 1 | 150 | 0.23 | 10 | 50 |
| PE-1812ACC101STS | 3000 | 7500 | 100 | +50/-30% | 2 | 200 | 0.2 | 10 | 50 |

Mechanical

Schematic



| Series | Component Dimensions (mm) | | | | | | SOLDER PAD (mm) | | | |
|----------|---------------------------|-------------|---------|-------------|--------------|--------------|-----------------|------|------|------|
| | A | B | C | D | E | F | X | T | W | S |
| 1812 ACC | 4.5 +/-0.20 | 3.2 +/-0.20 | 3.0 MAX | 3.1 +/-0.20 | 0.65 +/-0.15 | 0.70 +/-0.15 | 5.90 | 3.20 | 3.40 | 1.60 |

Automotive Chip Choke

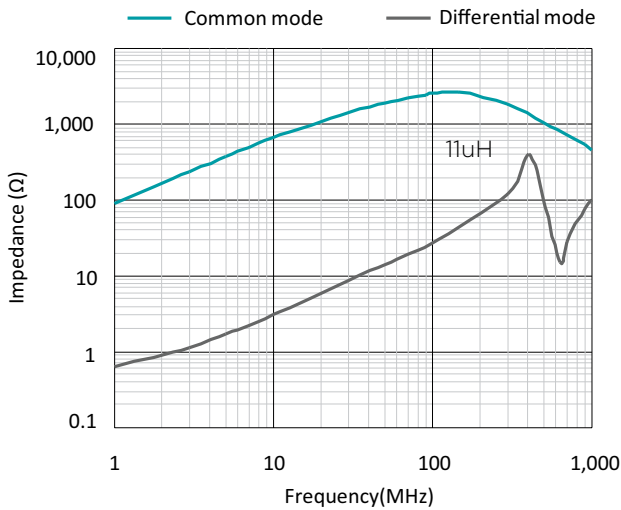
EMI Suppression for CAN-Bus Networks

2-Line Common Mode Chokes

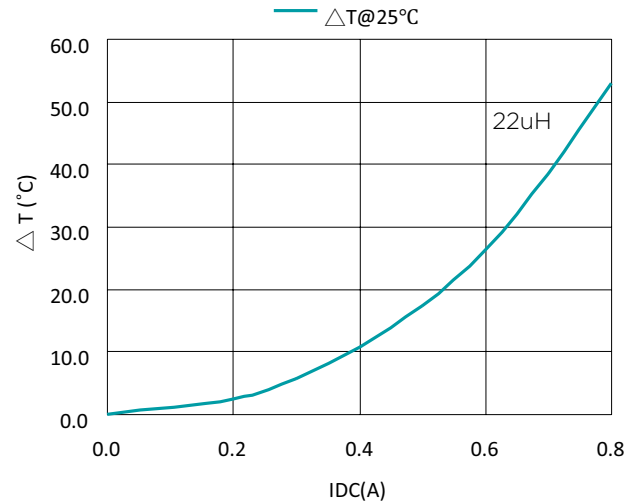
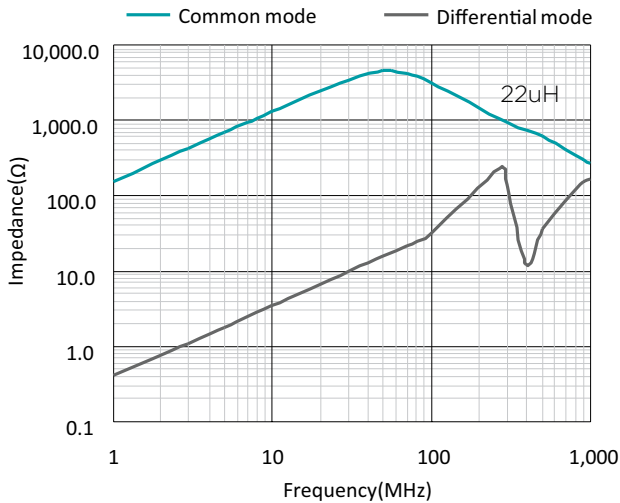
Impedance vs Frequency

Temp vs DC Current

PE-1812ACC110STS



PE-1812ACC220STS



Automotive Chip Choke

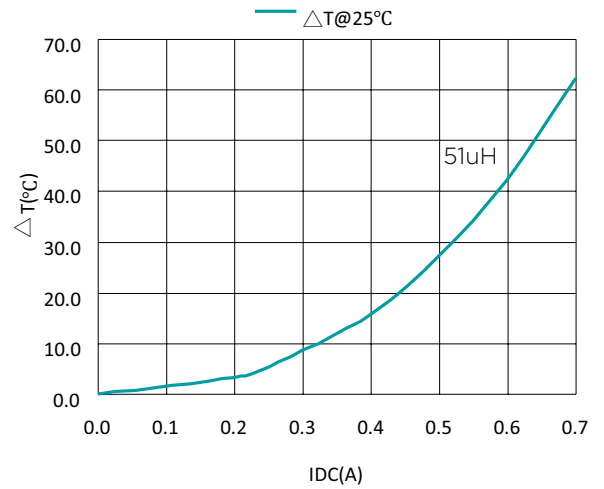
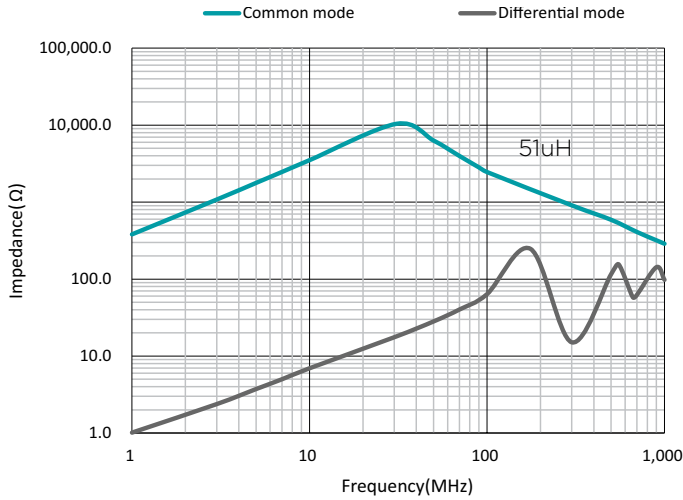
EMI Suppression for CAN-Bus Networks

2-Line Common Mode Chokes

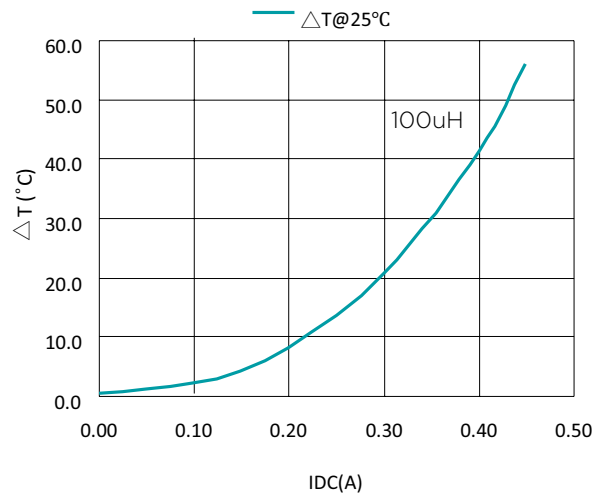
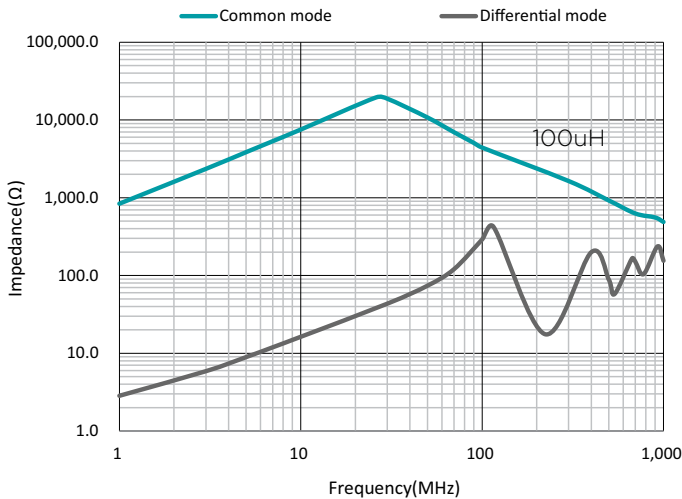
Impedance vs Frequency

Temp vs DC Current

PE-1812ACC510STS



PE-1812ACC101STS



Automotive Chip Choke

EMI Suppression for CAN-Bus Networks

2-Line Common Mode Chokes

Reliability Test

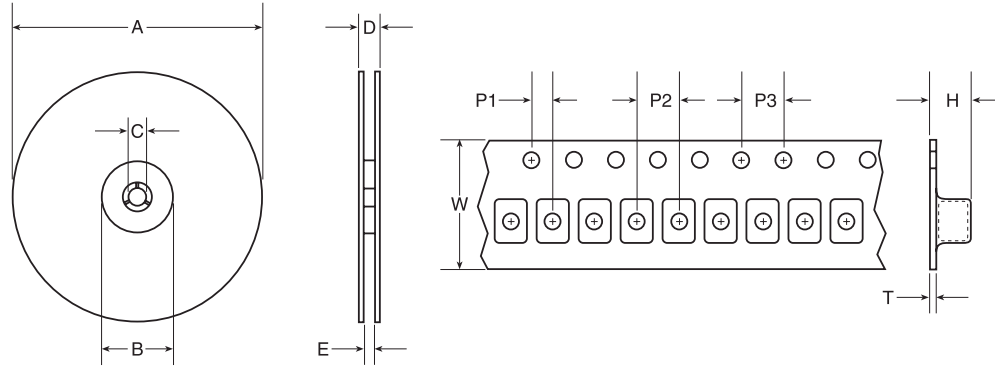
| Item | Reference documents | Test Condition | Test Specification |
|--------------------------------------|-------------------------|---|--|
| 1. High Temperature Exposure | MIL-STD-202 Method 108 | 1. Temperature: 125°C 2. Time: 1000 hours | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 2. Temperature Cycling | JESD22 Method JA-104 | 1. Temperature: -40°C-125°C 2. Number of cycles: 1000 cycle 3. Dwell time: 30 minutes | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 3. Biased Humidity Test | MIL-STD-202 Method 103 | 1. Temperature: 85 ± 5 °C 2. Time: 1000 hours 3. Humidity: 85 $\pm 5\%$ RH | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 4. Operational Life | MIL-PRF-27 | 1. Temperature: 125°C 2. Time: 1000 hours 3. Apply rated current | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 5. External Visual | MIL-STD-883 Method 2009 | Inspect product construction, marking and workmanship | Per product specification standard |
| 6. Physical Dimensions | JESD22 Method JB-100 | Verify physical dimensions to the applicable product detail specification | Per product specification standard |
| 7. Resistance to solvents | MIL-STD-202 Method 215 | Immerse into solvent for 3 ± 0.5 minutes & brush 10 times for their cycles. | 1. No body change in appearance 2. No marking blurred. 3. Inductance shall not change more than $\pm 30\%$ |
| 8. Vibration Test | MIL-STD-202 Method 204 | 1. Frequency and Amplified: 10-2000-10 Hz, 1.5mm 2. Direction: X, Y, Z 3. Test duration: 2 hours for each direction, 6 hours in total | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 9. Resistance to Soldering Heat Test | MIL-STD-202 Method 210 | 1. Temperature: 250 ± 5 °C 2. Time: (temp. ≥ 217 °C) 92-109 Seconds 3. IR reflow times: 3 times | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 10. Rated Current | MIL-STD-202 Method 330 | Apply rated current for 5 seconds. | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 11. Temperature Rise | MIL-PRF-27 | Apply rated current for 10 minutes. | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 12. Over load | MIL-PRF-27 | Apply twice as rated current for 5 minutes. | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 13. Solderability Test | J-STD-002 | 1. Baking in pre-testing: 150 ± 5 °C / 16Hours ± 30 min. 2. Peak temperature: 245°C 3. Time: (temp. ≥ 217 °C) 112 Second 4. IR reflow times: 1 time | The terminal shall be at least 95% covered with fresh solder. |
| 14. Electrical Characterization | User Spec. | 1. Operating temperature: -40°C-125°C 2. Room Temperature: 25°C | 1. No mechanical and electrical damage 2. Inductance shall not change more than $\pm 30\%$ |
| 15. Withstanding Voltage Test | MIL-STD-202 Method 201 | 1. DV: 500V 2. Time: 1 minute | 1. During the test no breakdown. 2. The characteristic is normal after test. |
| 16. Drop | JESD22-B111 | Package & Drop down from 1m. In 1 angle 1 ridge & 2 surfaces orientation | 1. No case deformation or change in appearance. 2. Inductance shall not change more than $\pm 30\%$ |
| 17. Terminal Strength Test | JIS-C-6429 | 1. Apply push force to samples mounted on PCB. 2. Force of 1.8 kg for 60 ± 1 seconds. | After test, inductors shall be on mechanical damage. |

Automotive Chip Choke

EMI Suppression for CAN-Bus Networks

2-Line Common Mode Chokes

Tape and Reel Specifications



| Series | Parts per Reel | Reel Dimensions (mm) | | | | | Tape Dimensions (mm) | | | | | |
|----------|----------------|----------------------|----|----|----|----|----------------------|----|----|----|---|------|
| | | A | B | C | D | E | W | P1 | P2 | P3 | H | T |
| 1812 ACC | 500 | 178 | 60 | 13 | 17 | 14 | 12 | 2 | 8 | 4 | 4 | 0.35 |

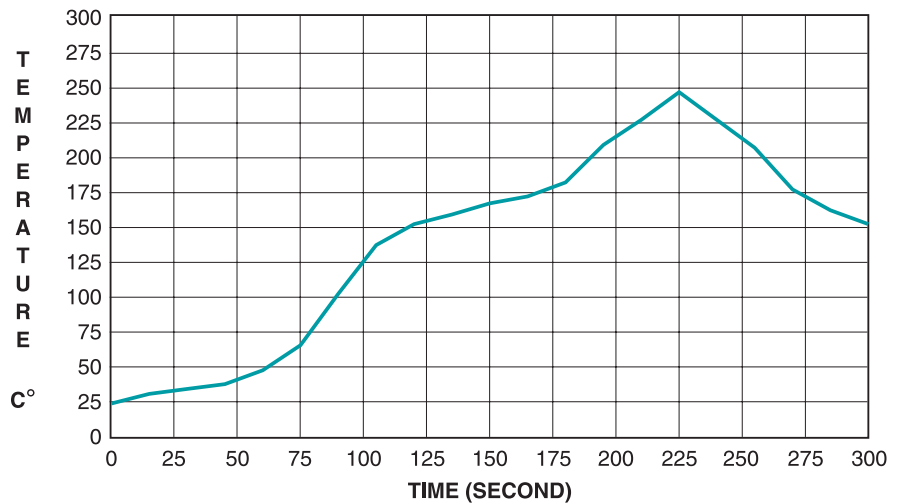
I. Description:

- a. Ferrite drum core construction
- b. Magnetically shielded
- c. Enameled copper wire: H class
- d. Product weight: 0.15g (ref.)
- e. Moisture sensitivity Level 1
- f. Products comply with RoHS' requirements
- g. Halogen Free available

II. General specification:

- a. Storage temp: -40°C to +125°C
- b. Operating temp: -40°C to +125°C
(Temp. rise included)
- c. Resistance to solder heat: 250°C 10 secs.

Recommended Solder Heat Resistance Profile



For More Information:

Americas - prodinfo@networkamericas@pulseelectronics.com | Europe - comms-Apps-Europe@pulseelectronics.com | Asia - prodinfo@networkapac@pulseelectronics.com

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