ACE2V3225

Automotive grade common-mode chip inductor

Product features

- AEC-Q200 qualified
- Compliant to OPEN Alliance 2.0
- 1210 (3225 metric) package
- Moisture sensitivity level (MSL): 1

Applications

- Ethernet architectures
- Advanced driver assistance systems (ADAS)
- Infotainment, safety cameras, sensors,
- Electric vehicle (xEV)
- Powertrain

Environmental compliance and general specifications

- Storage temperature rang (Component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant

Pb HALOGEN HF FREE RoHS

Powering Business Worldwide

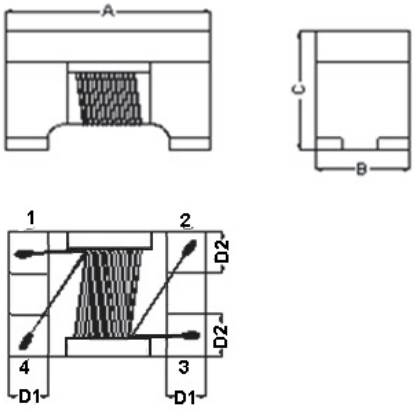
Product specifications

Part number	Common-mode impedance Z (Ω) at 10 MHz (1,4) - (2,3)	Common-mode inductance (µH) at 100 kHz, 0.1 Vrms (1-2), (3-4)	DCR[1] (Ω) @ +25 °C maximum	Irated[2] (mA) maximum	Rated voltage (Vdc) maximum	Insulation resistance (MΩ) minimum	Hipot[3] (Vdc)
ACE2V3225-101-R	1500 minimum 3000 typical	80 -30%/+50%	3.12	100	50	10	125
ACE2V3225-201-R	6500 minimum 9500 typical	200 -10%/+30%	5.5	70	50	10	125

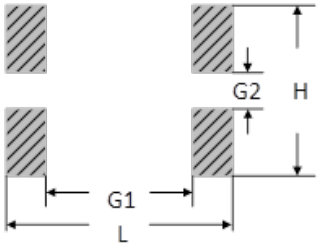
1. Direct current resistance (DCR) test parameters: (1-2), (3-4), 4-wire method, +25 °C
2. Irated: Maximum DC current for an approximate temperature rise of 40 °C: (1-2), (3-4)
3. Hi-pot test parameters: Winding - Winding, 5 s, Leakage current <1 mA
4. Part Number Definition: ACE2V3225-xxx-R
   ACE2V3225 = Product code and size
   xxx= inductance value in µH, last character equals number of zeros
   -R suffix = RoHS compliant

Mechanical parameters, schematic, pad layout (mm)

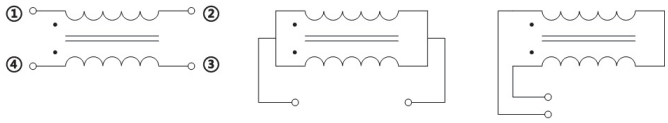
Drawing not to scale–(Pin numbers and dots are reference only-no polarity)



Recommended pad layout



Schematic



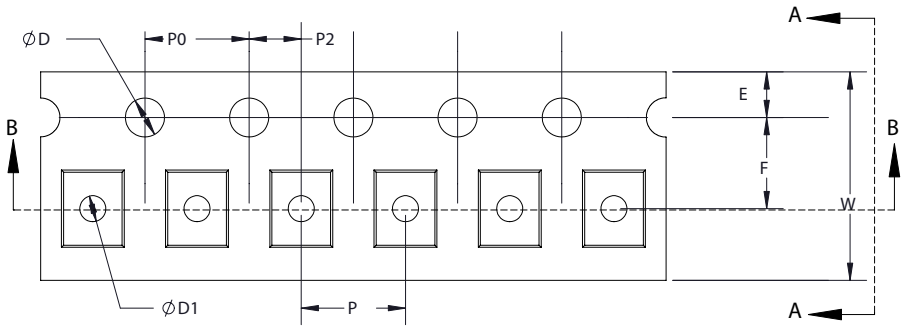
Part number	A	B	C	D1	D2	L	H	G1	G2
ACE2V3225-xxx-R	3.3 ±0.2	2.5 ±0.2	2.5 max	0.55 ±0.15	1.0 ±0.2	3.7	2.8	2.4	0.6

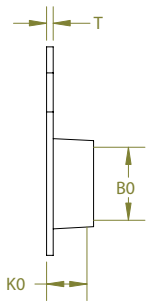
Part marking: No marking
All soldering surfaces to be coplanar within 0.1 millimeters
Tolerances are ±0.5 millimeters unless stated otherwise
Pad layout dimensions are reference only
Traces or vias underneath the inductor is not recommended

Packaging information (mm)

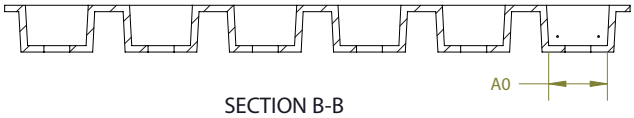
Supplied in tape and reel packaging, 2000 parts per 7" diameter reel (EIA-481 compliant)

Drawing not to scale





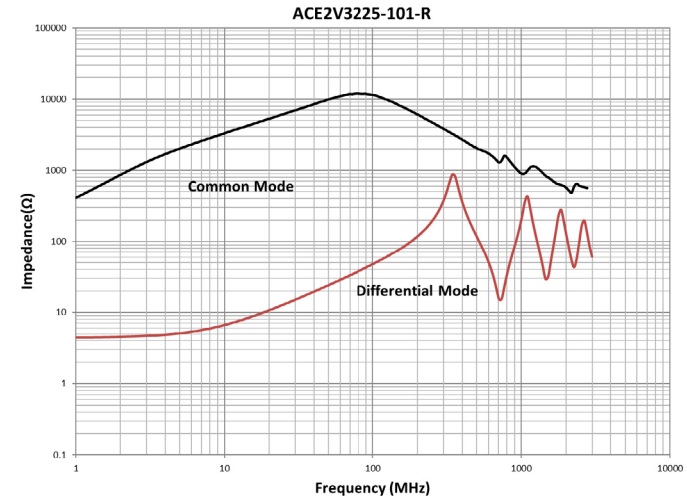
SECTION A-A

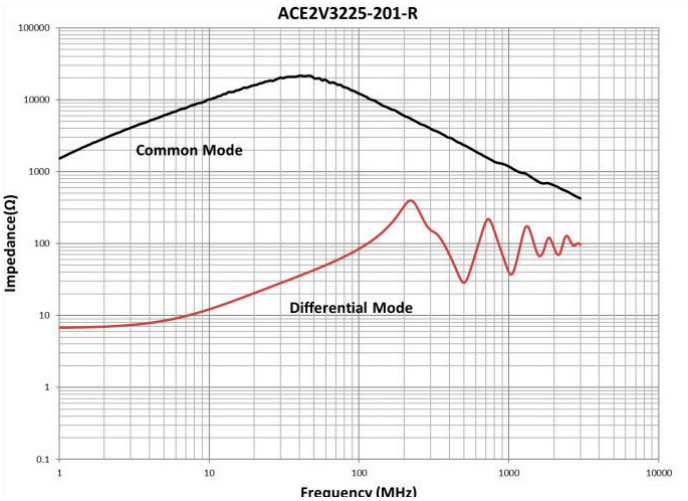


SECTION B-B

W±0.1	8.0
F±0.05	3.5
E±0.10	1.75
P0±0.10	4.0
P±0.10	4.0
P2±0.05	2.0
D+0.10/-0	1.5
D1±0.10	1.0
A0±0.10	2.88
B0±0.10	3.72
K0±0.10	2.5
T±0.05	0.26

Performance curves





Solder reflow profile

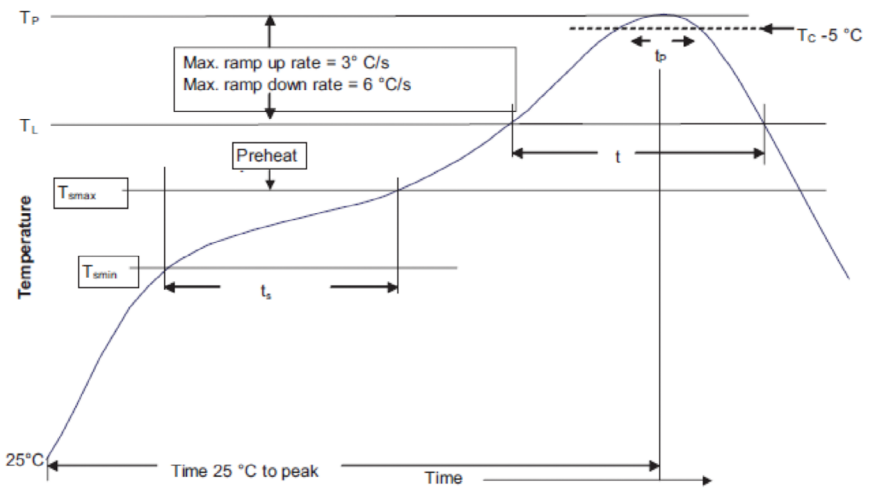


Table 1 - Standard SnPb solder (T_C)

Package thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5 mm)	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2 - Lead (Pb) free solder (T_C)

Package thickness	Volume mm³ <350	Volume mm³ 350 - 2000	Volume mm³ >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 – 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Reference J-STD-020

Profile feature		Standard SnPb solder	Lead (Pb) free solder
Preheat and soak	• Temperature min. (T_{smin})	100 °C	150 °C
	• Temperature max. (T_{smax})	150 °C	200 °C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-120 seconds
Ramp up rate T_L to T_p		3 °C/ second max.	3 °C/ second max.
Liquidous temperature (T_L) Time (t_L) maintained above T_L		183 °C 60-150 seconds	217 °C 60-150 seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)* within 5 °C of the specified classification temperature (T_C)		20 seconds*	30 seconds*
Ramp-down rate (T_p to T_L)		6 °C/ second max.	6 °C/ second max.
Time 25 °C to peak temperature		6 minutes max.	8 minutes max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com/electronics