## Reliability- SMD Power Inductor-Assembly, Wire-wound



Items	Performance	Requirements
Operating Temperature Range	-40°C to +125°C (including self-heating)	
Storage Temperature Range	-40°C to +125°C	
Terminal Strength AEC-Q200-006	The terminal electrode and the ferrite core shall not be peeled off and/or damaged.	10N force Keep time: 5s
Resistance to Flexure AEC-Q200-005	No visible mechanical damage.	Pressurizing Speed: 0.5mm/sec Keep time: 30±1s Test board size: 100X40X1.0mm Unit: mm 10 <sup>-20</sup> R340 45 45 45 45
Vibration MIL-STD-202 Method 204	No visible mechanical damage. Inductance deviation: within ±10%.	Frequency: 10~55~10 Hz for 15 min. Amplitude: 1.5mm Directions: X,Y,Z directions Times: 2 hours for each orientation Total Time: 6 hours
Temperature coefficient MIL-STD-202 Method 304	Inductance coefficient 0~2000 x10 <sup>-6</sup> /℃	Temperature range: -40~+85℃
Insulating Resistance MIL-STD-202 Method 302	Over 100MΩ	100V D.C. between windings and core
Dielectric Strength MIL-STD-202 Method 301	No visible mechanical damage.	100V D.C for 1 minute between windings and core
Solderability ANSI/J-STD-002	90% or more of electrode area shall be coated by new solder.	Solder temperature: 245±5°C Duration: 5±1 sec. Solder: Sn/3.0Ag/0.5Cu Flux: 25% resin and 75% ethanol in weight Fluxed electrode shall be immersed in solder bath.
Resistance to Soldering Heat MIL-STD-202 Method 210	No visible mechanical damage. Inductance deviation: within ±10%.	Refer to Reflow Soldering Conditions: SWCD-MS003
Thermal Shock MIL-STD-202 Method 107	No visible mechanical damage. Inductance deviation: within ±10%.	Temperature and time: -40±3°C for 30±3min→125°Cfor 30±3min Transfer interval: Max. 20 sec Tested cycle: 10 cycles Measured after exposure under the room conditions for 2~3 hours

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Low Temperature Storage JESD22-A119	No visible mechanical damage. Inductance deviation: within ±10%.	Temperature: -40±3°C Duration: 500±24 hours Measured after exposure under the room conditions for 2~3 hours
High Temperature Storage MIL-STD-202 Method 108	No visible mechanical damage. Inductance deviation: within ±10%.	Temperature: 125±2°C Duration: 500±24 hours Measured after exposure under the room conditions for 2~3 hours
Humidity Test MIL-STD-202 Method 103	No visible mechanical damage. Inductance deviation: within ±10%.	Temperature: 40±2°C Humidity: 90% to 95%RH Duration: 500±24 hours Measured after exposure under the room conditions for 2~3 hours
Loading at High Temperature MIL-STD-202 Method 108	No visible mechanical damage. Inductance deviation: within ±10%.	Temperature: 85±2℃ Applied current: IDC Duration: 500±24 hours Measured after exposure under the room conditions for 2~3 hours

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