

Reliability and Test Condition

Item	Performance	Test Condition								
Operating Temperature	-55~+125°C (For products in unopened tape package, less than 40°C)									
Electrical Performance Test										
Inductance	Refer to standard electrical characteristics list	Agilent-4291, Agilent-4287 Agilent-4192, Agilent-4285								
DCR		Agilent-4338								
Saturation Current (Isat)	Base on temp. rise & $\Delta L/L0A \leq 30\%$.	Saturation DC Current (Isat) will cause L0 to drop approximately $\Delta L(\%)$.								
Heat Rated Current (Irms)	ΔT 40°C Max	Heat Rated Current (Irms) will cause the coil temperature rise approximately $\Delta T(^{\circ}C)$ without core loss. 1. Applied the allowed DC current. 2. Temperature measured by digital surface thermometer.								
Mechanical Performance Test										
Solder Heat Resistance	Appearance : No damage. Inductance : within $\pm 10\%$ of initial value RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value	<table border="1"> <thead> <tr> <th>Temperature (°C)</th> <th>Time (s)</th> <th>Temperature ramp/immersion and emersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>260 \pm 5 (solder temp)</td> <td>10 \pm 1</td> <td>25mm/s \pm 6 mm/s</td> <td>1</td> </tr> </tbody> </table> Depth: completely cover the termination	Temperature (°C)	Time (s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 \pm 5 (solder temp)	10 \pm 1	25mm/s \pm 6 mm/s	1
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260 \pm 5 (solder temp)	10 \pm 1	25mm/s \pm 6 mm/s	1							
Solderability Test	More than 95% of terminal electrode should be covered with solder.	Preheat: 150°C, 60sec. ◦ Solder: Sn99.5%-Cu0. 5% ◦ Temperature: 245 \pm 5°C ◦ Flux for lead free: Rosin. 9.5% ◦ Dip time: 4 \pm 1sec ◦ Depth: completely cover the termination								
Reliability Test										
Life Test		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature : 125 \pm 2°C (Bead) Temperature : 85 \pm 2°C (Inductor) Applied current : rated current Duration : 1000 \pm 12hrs Measured at room temperature after placing for 24 \pm 2 hrs								
Thermal shock	Appearance : No damage. Inductance : within $\pm 10\%$ of initial value RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Step1 : -40 \pm 2°C 30 \pm 5min Step2 : 25 \pm 2°C \leq 0.5min Step3 : 105 \pm 2°C 30 \pm 5min Number of cycles : 500 Measured at room fempraturc after placing for 24 \pm 2 hrs								
Humidity Resistance Test		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature : 85°C \pm 2°C Duration : 1000hrs Min. with 100% rated current Measured at room temperature after placing for 24 \pm 2 hrs								

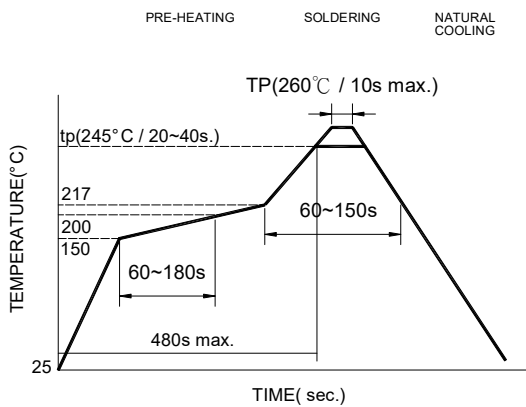
Reliability and Test Condition

Item	Performance	Test Condition
Vibration Test	Appearance : No damage. Inductance : within $\pm 10\%$ of initial value RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Oscillation Frequency: 10~2K~10Hz for 20 minutes Equipment : Vibration checker Total Amplitude: 1.52mm $\pm 10\%$ Testing Time : 12 hours (20 minutes, 12 cycles each of 3 orientations) °

Soldering and Mounting

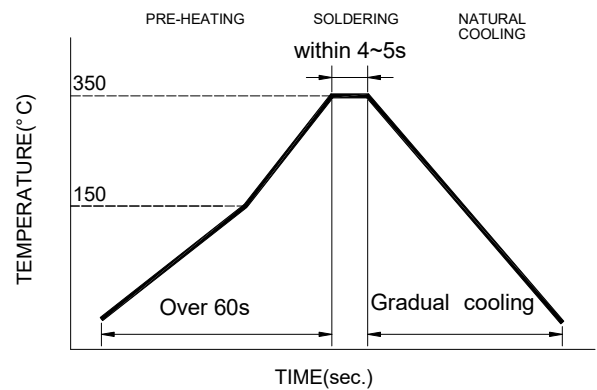
Soldering	Mildly activated rosin fluxes are preferred. JANTEK terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.
Lead Free Solder re-flow:	Recommended temperature profiles for re-flow soldering in Figure 1.
Soldering Iron (Figure 2):	<p>Products attachment with a soldering iron is discouraged due to the inherent process control limitations.</p> <p>In the event that a soldering iron must be employed the following precautions are recommended.</p> <p>Note :</p> <ul style="list-style-type: none"> • Preheat circuit and products to 150°C • Never contact the ceramic with the iron tip • Use a 20 watt soldering iron with tip diameter of 1.0mm • 355°C tip temperature (max) • 1.0mm tip diameter (max) • Limit soldering time to 4~5 sec

Reflow Soldering



Reflow times: 3 times max
Fig.1

Iron Soldering



Iron Soldering times : 1 times max
Fig.2