

## **Reliability and Test Condition**

ltem	Performance	Test Condition				
Electrical Performance	e Test					
Inductance	Refer to standard electrical characteristics	HP4284A,CH11025,CH3302,CH1320,CH1320S LCR Meter				
DCR	list	CH16502,Agilent33420A Micro-Ohm Meter				
Saturation Current (Isat)	Approximately $ riangle$ L30%.	Saturation DC Current (Isat) will cause L0 to drop $\triangle$ L(%)				
Heat Rated Current (Irms)	Approximately ∆T40°C	Heat Rated Current (Irms) will cause the coil temperature rise $\triangle T(^{\circ}C)$ 1.Applied the allowed DC current 2.Temperature measured by digital surface thermometer				
Operating Temperature	-40°C~+125°C (Including self - temperature	rise)				
Storage Temperature	110~+40°C,50~60% RH (Product without ta 240~+125°C (on board)	aping)				
Reliability Test						
Life Test		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature : 125±2°C (Inductor) Applied current : rated current Duration : 1000±12hrs Measured at room temperature after placing for 24±2 hrs				
Load Humidity		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Humidity : $85\pm2\%$ R.H Temperature : $85^{\circ}C\pm2^{\circ}C$ Duration : 1000hrs Min. with 100% rated current Measured at room temperature after placing for 24±2 hrs				
Moisture Resistance	Appearance : No damage. Inductance : within±10% of initial value Q : Shall not exceed the specification value RDC : within ±15% of initial value and shall not exceed the specification value	<ul> <li>Preconditioning: Run through IR reflow for 2 times.</li> <li>(IPC/JEDEC J-STD-020D Classification Reflow Profiles)</li> <li>1. Baked at50°C for 25hrs, measured at room temperature after placing for 4 hrs.</li> <li>2. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs.</li> <li>3. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs, keep at 25°C for 2 hrs then keep at -10°C for 3 hrs</li> <li>4. Keep at 25°C 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.</li> </ul>				
Thermal shock		Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020D Classification Reflow Profiles) Condition for 1 cycle Step1 : $-40\pm2^{\circ}C$ 30 $\pm5$ min Step2 : $25\pm2^{\circ}C \leq 0.5$ min Step3 : $125\pm2^{\circ}C$ 30 $\pm5$ min Number of cycles : 500 Measured at room temperature after placing for 24 $\pm2$ hrs				
Vibration		Oscillation Frequency: 10~2K~10Hz for 20 minutes Equipment : Vibration checker Total Amplitude:1.52mm±10% Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)				



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Reliability Test	-							
		, T	Туре	Peak value (g's)	Normal duration (D)	Wave	Velocity change	
Shock	Appearance : No damage. Inductance : within±10% of initial value Q : Shall not exceed the specification value RDC : within ±15% of initial value and shall not exceed the specification value	S	SMD	50	(ms) 11	Half-sine	(Vi)ft/sec 11.3	
		L	Lead	50	11	Half-sine	11.3	
Bending		Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm						
Soderability	More than 95% of the terminal electrode should be covered with solder	duration of 10 sec. Preheat: 150°C,60sec Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245±5°C Flux for lead free: Rosin. 9.5% Dip time: 4±1sec Depth: completely cover the termination						
Resistance to Soldering Heat		Ter	h: compl mperature (°C) 260 ±5 Ider temp	e Time (s)	ramp/im and eme	ation erature mersion rsion rate ±6 mm/s	Number of heat cycles 1	
Terminal Strength	Appearance : No damage. Inductance : within±10% of initial value Q : Shall not exceed the specification value RDC : within ±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) With the component mounted on a PCB with the device to be tested, apply a force (>0805:1kg , <=0805:0.5kg)to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.						

Note : When there are questions concerning measurement result measurement shall be made after 48 ± 2 hours Of recovery under the standard condition.



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Soldering and Mounti	ng	-				
Soldering	Mildly activated rosin fluxes are preferred. The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate. JANTEK terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.					
Solder re-flow:	Recommended temperature profiles for re-flow soldering in Figure 1.					
Soldering Iron:	Products attachment with a soldering iron is discouraged due to the inherent process control limitations. If a soldering iron must be employed the following precautions are recommended. for Iron Soldering in Figure 2. Note : • 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	S SOLDERING NATURAL COOLING	Iron Soldering PRE-HEATING	SOLDERING NATURAL COOLING within 4~5s			

