

PRESIDIO COMPONENTS, INC.

AVAILABLE TEST ROUTINES

	Presidio Standard (All Test Methods IAW Mil-PRF-49470)			DSCC Standard	
	Commercial	“HR” Stack	“SR” Stack	Mil-PRF-49470 B Level	Mil-PRF-49470 T Level
Description	For Commercial Applications	Similar to Mil-PRF-49470 B Level or Per SCD	Similar to Mil-PRF-49470 T Level or Per SCD	High Reliability Military	High Reliability Space
Chip DPA	Yes Presidio Internal Requirement	Yes Presidio Internal Requirement	Yes Presidio Internal Requirement	Not Required	Yes Specification Requirement
Ultrasonic Imaging C-Scan	Not Required	Not Required or per SCD	Optional	Not Required	Required
Thermal Shock As Part Of Group A	Not Required	Optional	20 Cycles or per SCD	5 Cycles	20 Cycles
Voltage Conditioning (Duration)	Not Required	8 Hours Min. or per SCD	168 - 264 Hours	96 Hours	168 - 264 Hours
Visual/100% Electrical (Cap/DF/IR/DWV)	Yes	Yes	Yes	Yes	Yes
IR 125°C	Not Required	Optional	Optional	Required	Required
Stack DPA	Not Required	Not Required or per SCD	Optional	Not Required	Required
Life Test	Not Required	Optional	Optional	Not Required on Lot Basis	Yes - Includes 100 Thermal Shock Cycles
Humidity, Steady State, Low Voltage	Not Required	Not Required or per SCD	Optional	Not Required	Yes
Mil-STD-790 Approved Facility	Yes	Yes	Yes	Yes	Yes

SOLDERING RECOMMENDATIONS FOR CERAMIC STACKED CAPACITORS

The following are general recommendations for soldering of ceramic stacked capacitors. In general, Presidio Components recommends against hand soldering for this type of large ceramic device. However, if hand soldering cannot be avoided, it should be done with care to avoid thermally cracking the parts. Soldering of these parts to the circuit board, if done in a careless manner, is the most likely source of reliability problems.

PREHEATING AND MOUNTING. For reflow soldering, the parts should be preheated to within 50°C - 60°C of the reflow temperature, or as close as is practical. A convection-style reflow oven with nitrogen is ideal, but other types of reflow will also work. The heat-up and cool-down rates (dT/dt) should be kept well under 4°C/sec. and preferably under 2°C/sec. After soldering, allow the parts to air cool to room temperature before cleaning.

Note: Presidio Components' parts are designed to reliably withstand reflow temperatures of 265°C maximum. If higher temperature reflow is required, consult factory.

HAND SOLDERING. If hand soldering must be used, preheat the parts as recommended above. A hot-air gun is an ideal tool for preheating. When hand soldering, avoid excessive heat, and keep the tip of the soldering iron as far away from the ceramic as possible.

As an example, for through-hole leaded parts, solder from the backside of the board. This will minimize the risk of thermally cracking the ceramic. After soldering, allow the parts to air cool to room temperature before cleaning.

PRE-TINNING LEADS. The leads do not need to be pre-tinned as they have already been tinned with Sn63 as part of our process.

In addition to the above, the following rules apply:

1. Do not dip stacked capacitors into a solder pot (to pre-tin, for example).
2. Do not touch-up a solder joint with a soldering iron. If touch up is necessary follow preheating and hand soldering recommendations above.
3. Do not deform leads or use excessive force to install parts.

Further, in accordance with Mil-PRF-49470, the following precaution should be followed:

“Precautionary Note: Capacitors covered by this specification sheet are very susceptible to thermal shock damage due to their large ceramic mass. Temperature profiles used should provide adequate temperature rise and cool-down time to prevent damage from thermal shock.”