



TH5 Tantalum Capacitors

ELECTRICAL PERFORMANCE CHARACTERISTICS	
ITEM	PERFORMANCE CHARACTERISTICS
Category temperature range	-55 °C to +200 °C
Category voltage	Category voltage is the same within entire temperature range and is equal to rated voltage
Capacitance tolerance	± 20 %, ± 10 %, tested via bridge method, at 25 °C, 120 Hz
Dissipation factor	Limits per Standard Ratings table. Tested via bridge method, at 25 °C, 120 Hz
ESR	Limits per Standard Ratings table. Tested via bridge method, at 25 °C, 100 kHz
Leakage current	After application of rated voltage applied to capacitors for 5 min using a steady source of power with 1 kΩ resistor in series with the capacitor under test, leakage current at 25 °C is not more than described in Standard Ratings table. <i>Note that the leakage current varies with temperature and applied voltage.</i>

ENVIRONMENTAL PERFORMANCE CHARACTERISTICS		
ITEM	CONDITION	POST TEST PERFORMANCE
Life test	500 h application of rated voltage at 200 °C	Capacitance change -30 % / +10 % of initially specified value Dissipation factor Not to exceed 150 % of initial ESR Not to exceed 125 % of initial Leakage current Not to exceed 1 mA (at 200 °C)
Moisture resistance	Cycled, 20 cycles, MIL-STD-202, method 106	Capacitance change ± 15 % of initially specified value Dissipation factor Not to exceed 150 % of initial Leakage current Not to exceed 200 % of initial
Surge voltage	85 °C, 1000 cycles at 1.3 rated voltage in series with 33 Ω resistor, MIL-PRF-55365	Capacitance change ± 5 % of initially specified value Dissipation factor Initial specified value or less Leakage current Initial specified value or less

Note

- All measurements to be performed after 24 h conditioning at room temperature

MECHANICAL PERFORMANCE CHARACTERISTICS		
ITEM	CONDITION	POST TEST PERFORMANCE
Terminal strength / Shear force test	Apply a pressure load of 17.7 N for 60 s horizontally to the center of capacitor side body.	Capacitance change Within ± 10 % of initial value Dissipation factor Initial specified limit Leakage current Initial specified limit There shall be no mechanical or visual damage to capacitors post-conditioning.
Vibration	MIL-STD-202, method 204, condition D, 10 Hz to 2000 Hz, 20 g peak	There shall be no mechanical or visual damage and the components shall meet the original electrical requirements
Resistance to solder heat	MIL-STD-202, method 210, condition K	Capacitance change ± 5 % of initially specified value Dissipation factor Initial specified value or less Leakage current Initial specified value or less There shall be no mechanical or visual damage to capacitors post-conditioning.
Solderability	MIL-STD-202, method 208, ANSI / J-STD-002, test B Applies only to solder and tin plated terminations. Does not apply to gold terminations.	All terminations shall exhibit a continuous solder coating free from defects for a minimum of 95 % of the critical area of any individual termination
Resistance to solvents	MIL-STD-202, method 215	Marking has to remain legible, no degradation of encapsulation material
Flammability	Encapsulation materials meet UL 94 V-0 with an oxygen index of 32 %	

Note

- All measurements to be performed after 24 h conditioning at room temperature