SAMSUNG ELECTRO-MECHANICS

SPECIFICATION

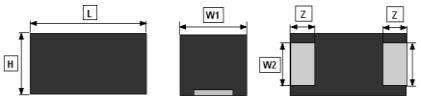
RoHS+Halogen Compliant ecoparts

- **Supplier : Samsung Electro-Mechanics**
- **Product : Polymer Tantalum Capacitor**
- **Samsung P/N : TCPBL1E475MRAR0500**
- **Description : CAP,TANTAL,4.7㎌,25V,±20%,2012-09**

A. Samsung Part Number

TC	PBL	1E	475	M	R	A	R	0500
①	②	③	④	⑤	⑥	⑦	⑧	⑨

①	**Tantalum Capacitor**	TC			
②	**Series**	PBL			
③	**Rated Voltage**	25V			
④	**Capacitance**	4.7㎌			
⑤	**Capacitance tolerance**	±20%			
⑥	**Case size code**	2012-09	L: 2.0±0.2 mm H: 0.9 ± 0.1 mm	W1: 1.25±0.2 mm W2: 0.9 ± 0.1 mm	Z: 0.5 ± 0.2 mm
⑦	**Packing code**	7" reel			
⑧	**Taping code**	Taping direction code			
⑨	**ESR**	500 mΩ			



B. Reliability Test and Judgment Condition

Item	Performance	Test condition
Capacitance	Within specified tolerance	120㎐, maximum 1.0Vrms, 1.0~2.0V D.C at 25℃
Tan δ(DF)	Within specified value	120㎐, maximum 1.0Vrms, 1.0~2.0V D.C at 25℃
Impedance(Z) & ESR	Within specified value	100㎑ at 25℃
Leakage current	Within specified value	The rated DC voltage shall be applied to terminals across the test capacitor. Charge time : 5min.
Temperature Characteristics	"-55℃ : △C/C -20~0% "+105℃ : △C/C 0~+30%	From -55℃ to 105℃
Adhesion Strength (Shear Strength)	No peeling shall be occur on the terminal electrode	1005mm size : 2N, for 10±1 sec. 1608~7343mm size : 5N, for 10±1 sec.
Electrode Strength (Bending Strength)	Within specified tolerance Tan δ, LC : initial spec.	Bending to the limit (3mm) with 1.0mm/sec.
Solderability	More than 95% of terminal surface is to be soldered newly	Sn-3Ag-0.5Cu solder : 245±2℃, 3±0.3sec
Resistance to Soldering heat	Capacitance change : within ±20% Tan : 1.3 times of Initial specification. LC : 3 times of Initial specification.	Solder pot : 260±5℃, 10±1sec.
Vibration	Capacitance change : within ±5% Tan δ, LC : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours ´3 direction (x, y, z)
Resistance to Moisture	Capacitance change : -20~+35% Tan : 1.5 times of Initial specification. LC : 3 times of Initial specification.	40±2℃, 90~95%RH, 500 +8/-0hrs
Load life (High Temperature Resistance)	Capacitance change : -20~+30% Tan : 85℃ → 1.5times of Initial specification. 105℃ → 3 times of Initial specification. LC : 1.5 times of Initial specification.	Rated voltage at 85℃ Derated voltage(0.8Vr) at 105℃ 2000 +48/-0hrs
Temperature Cycling	Capacitance change : within ±20% Tan : within initial specification. LC : 3 times of Initial specification.	1 cycle condition (-55℃ → 25℃→ 105℃ → 25℃) 10 cycles

C. Recommended Soldering method

Reflow (Reflow Peak Temperature : 250 +0/-5℃, 10sec max)

D. Ratings & Part Number Reference

Part Number	Capacitance	Leakage Current	DF	ESR
TCPBL1E475MRAR0500	**4.7㎌**	**11.8㎂**	**10%**	**500mΩ**

Allowable ripple current (100kHz @25℃): 280mArms