

SPECIFICATION

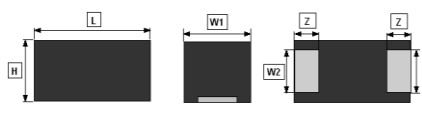
- Supplier : Samsung Electro-Mechanics
- Product : Polymer Tantalum Capacitor

- Samsung P/N : TCPBL1E475MRAR0500
- Description : CAP,TANTAL,4.7 μ F,25V, \pm 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 μ F							
⑤ Capacitance tolerance	\pm 20%							
⑥ Case size code	2012-09	L: 2.0 \pm 0.2 mm H: 0.9 \pm 0.1 mm	W1: 1.25 \pm 0.2 mm W2: 0.9 \pm 0.1 mm	Z: 0.5 \pm 0.2 mm				
⑦ Packing code	7" reel							
⑧ Taping code	Taping direction code							
⑨ ESR	500 m Ω							



B. Reliability Test and Judgment Condition

Item	Performance	Test condition
Capacitance	Within specified tolerance	120Hz, maximum 1.0Vrms, 1.0~2.0V D.C at 25 $^{\circ}$ C
Tan δ (DF)	Within specified value	120Hz, maximum 1.0Vrms, 1.0~2.0V D.C at 25 $^{\circ}$ C
Impedance(Z) & ESR	Within specified value	100kHz at 25 $^{\circ}$ C
Leakage current	Within specified value	The rated DC voltage shall be applied to terminals across the test capacitor. Charge time : 5min.
Temperature Characteristics	"-55 $^{\circ}$ C : Δ C/C -20~0% "+105 $^{\circ}$ C : Δ C/C 0~+30%	From -55 $^{\circ}$ C to 105 $^{\circ}$ C
Adhesion Strength (Shear Strength)	No peeling shall be occur on the terminal electrode	1005mm size : 2N, for 10 \pm 1 sec. 1608~7343mm size : 5N, for 10 \pm 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 \pm 2 $^{\circ}$ C, 3 \pm 0.3sec
Resistance to Soldering heat	Capacitance change : within \pm 20% Tan : 1.3 times of Initial specification. LC : 3 times of Initial specification.	Solder pot : 260 \pm 5 $^{\circ}$ C, 10 \pm 1sec.
Vibration	Capacitance change : within \pm 5% Tan δ , LC : initial spec.	Amplitude : 1.5mm From 10Hz to 55Hz (return : 1min.) 2hours \times 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 \pm 2 $^{\circ}$ C, 90~95%RH, 500 +8/-0hrs
Load life (High Temperature Resistance)	Capacitance change : -20~+30% Tan : 85 $^{\circ}$ C \rightarrow 1.5times of Initial specification. 105 $^{\circ}$ C \rightarrow 3 times of Initial specification. LC : 1.5 times of Initial specification.	Rated voltage at 85 $^{\circ}$ C Derated voltage(0.8Vr) at 105 $^{\circ}$ C 2000 +48/-0hrs
Temperature Cycling	Capacitance change : within \pm 20% Tan : within initial specification. LC : 3 times of Initial specification.	1 cycle condition (-55 $^{\circ}$ C \rightarrow 25 $^{\circ}$ C \rightarrow 105 $^{\circ}$ C \rightarrow 25 $^{\circ}$ C) 10 cycles

C. Recommended Soldering method

Reflow (Reflow Peak Temperature : 250 +0/-5 $^{\circ}$ C, 10sec max)

D. Ratings & Part Number Reference

Part Number	Capacitance	Leakage Current	DF	ESR
TCPBL1E475MRAR0500	4.7 μ F	11.8 μ A	10%	500m Ω

Allowable ripple current (100kHz @25 $^{\circ}$ C): 280mArms