

SPECIFICATION

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

- Samsung P/N : TCPCS1A476MBAR0070
- Description : CAP,TANTAL,47 μ F,10V, $\pm$ 20%,3528-19

A. Samsung Part Number

	TC	PCS	1A	476	M	B	A	R	0070
	①	②	③	④	⑤	⑥	⑦	⑧	⑨
① Tantalum Capacitor	TC								
② Series	PCS								
③ Rated Voltage	10V								
④ Capacitance	47 μ F								
⑤ Capacitance tolerance	$\pm$ 20%								
⑥ Case size code	3528-19								
⑦ Packing code	7" reel								
⑧ Taping code	Taping direction code								
⑨ ESR	70 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	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	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) 5 cycles

C. Recommended Soldering method

Reflow (Reflow Peak Temperature : 260 +0/-5 $^{\circ}$ C, 5sec max)

D. Ratings & Part Number Reference

Part Number	Capacitance	Leakage Current	DF	ESR	Allowable Ripple Current
TCPCS1A476MBAR0070	47 μ F	47 μ A	8%	70m Ω	1100mA

Ripple current (100kHz @25 $^{\circ}$ C)