

# Surface mount type TPC Series

RoHS compliance, Halogen free  
Low profile: 1.1mm (B1)

## Specifications

Items	Condition	Specifications			
Rated voltage (V)	—	6.3	8.0	10	12.5
Surge voltage (V)	—	7.2	9.2	12	14
Category temperature range (°C)	—	-55 to +105			
Capacitance tolerance (%)	120Hz/20°C	M : ±20			
Rated capacitance range (μF)	120Hz/20°C	10 to 470			
Dissipation Factor (DF)	120Hz/20°C	Please see the attached characteristics list			
Leakage current	Rated voltage applied, after 5 minutes	Please see the attached characteristics list			
Equivalent series resistance (ESR)	100kHz/+20°C	Please see the attached characteristics list			
Characteristics of impedance ratio at high temp. and low temp.	100kHz/20°C	-55°C	Z/Z <sub>20°C</sub>	0.6 to 2.0	
		+105°C	Z/Z <sub>20°C</sub>	0.6 to 2.0	
Endurance	105°C, 2,000h B2 size :105°C, 1,000h, Rated voltage applied ※Rated temp. 85°C products: 85°C, 1,000h, rated voltage applied	ΔC/C	Within±20% of the initial value		
		DF	≤ 1.5 times of the initial limit		
		LC	Within the initial limit		
Damp heat (Steady State)	60°C, 90 to 95%RH, 500h, No-applied voltage	ΔC/C	Within+40%, -20% of the initial value		
		DF	≤ 1.5 times of the initial limit		
		LC	≤ 3 times of the initial limit		
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied ※Rated temp. 85°C products:85°C	ΔC/C	Within±5% of the initial value		
		DF	Within the initial limit		
		LC	≤ 3 times of the initial limit		

## Marking and dimensions

(unit : mm)

Size code	L ±0.2	W ±0.2	H ±0.1	S ±0.2	W1 ±0.1
B1	3.5	2.8	1.1	0.8	2.2
D2	7.3	4.3	1.9	1.3	2.4

**B1size**

Rated capacitance※3  
Anode (+)  
Rated voltage※1

**D2size**

Rated capacitance  
Anode (+)  
Rated voltage※1

※1 The rated voltage is as follows.

R.V.	6.3	8.0	10	12.5
Mark	j	k	A	B

※2 Lot.No.shows roughly manufacturing date.

※3 The rated capacitance is as follows.

Capacitance(μF)	10	15	22	33	47
Mark	A7	E7	J7	N7	S7

## Recommended land pattern dimension of PWB

(unit : mm)

Size code	a	b	c
B1	1.6	2.7	1.4
D2	2.4	2.9	3.7

## Size list

RV:Rated voltage

μF \ RV	6.3	8.0	10.0	12.5
10				B1
15				B1
22		B1		
33	B1		B1	
47	B1			
68			D2	
100	D2		D2	
150	D2	D2		
330	D2			

## TPC series characteristics list

Size code	Part number	Rated voltage (V)	Rated temperature (°C)	Rated capacitance (μF)	Category voltage (V)	Category temperature (°C)	DF (% max)	LC (μA) max/5min.	ESR (mΩ max) 100kHz/20°C	Maximum allowable ripple current (mA rms) 100kHz※1	MSL	
											Reflow temp. ≤ 260°C	Reflow temp. ≤ 250°C
B1	12TPC15M	12.5	85	15	10	105	10	18.8	80	800	3	3
	12TPC10M	12.5	85	10	10	105	10	12.5	80	800	3	3
	8TPC22M	8.0	85	22	6.3	105	10	17.6	70	1000	3	3
	6TPC47MB	6.3	85	47	5.0	105	10	29.6	70	1000	3	3
	6TPC47M	6.3	85	47	5.0	105	10	29.6	55	1100	3	3
D2	10TPC100M	10	105	100	10	105	10	100.0	45	1700	3	2a
	10TPC68M	10	105	68	10	105	10	68.0	45	1700	3	2a
	8TPC150M	8.0	105	150	8.0	105	10	120.0	40	1900	3	2a
	6TPC330MA	6.3	85	330	5.0	105	10	207.9	40	1900	3	2a
	6TPC150M	6.3	105	150	6.3	105	10	94.5	40	1900	3	2a
	6TPC100M	6.3	105	100	6.3	105	10	63.0	45	1700	3	2a

※1 100k~500kHz,45°C