

TPB Series

Surface mount type

RoHS compliance, Halogen free
Standard products

Specifications

Items	Condition	Specifications		
Rated voltage (V)	-	4.0	6.3	10
Surge voltage (V)	-	4.6	7.2	12
Category temperature range (°C)	-	-55 to +105		
Capacitance tolerance (%)	120Hz/20°C	M : ±20		
Rated capacitance range (μF)	120Hz/20°C	33 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 _{20°C}	0.6 to 2.0
		+105°C	Z/Z _{20°C}	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

※1 The rated voltage is as follows.

R.V.	4.0	6.3	10
Mark	g	j	A

※2 Lot.No.shows roughly manufacturing date.

※3 The rated capacitance is as follows.

Capacitance(μF)	33	47	68
Mark	N7	S7	W7

Size code	L ±0.3※1	W ±0.2	H ±0.2※2	S ±0.2	W1 ±0.1
B2	3.5	2.8	1.9	0.8	2.2
D3L	7.3	4.3	2.8	1.3	2.4
D4	7.3	4.3	3.8	1.3	2.4

(unit : mm)

※1 ±0.2 : B2 ※2 ±0.1 : B2

Recommended land pattern dimension of PWB

Size code	a	b	c
B2	1.6	2.7	1.4
D3L	2.4	2.9	3.7
D4	2.4	2.9	3.7

(unit : mm)

Size list

RV:Rated voltage

μF	RV	4.0	6.3	10.0
33				B2
47				B2
68	B2		B2	
150				D3L
220			D3L	D3L,D4
330	D3L	D3L,D4		D4
470			D4	

TPB 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
B2	10TPB47M	10	105	47	10	105	8.0	47.0	70	1100	3	3
	10TPB33M	10	105	33	10	105	8.0	33.0	70	1100	3	3
	6TPB68M	6.3	105	68	6.3	105	8.0	42.8	70	1100	3	3
	4TPB68M	4.0	105	68	4.0	105	8.0	27.2	70	1100	3	3
D3L	10TPB220ML	10	105	220	10	105	10	220.0	40	2000	—	2a
	10TPB150ML	10	105	150	10	105	10	150.0	40	2000	3	2a
	6TPB330ML	6.3	105	330	6.3	105	10	207.9	40	2000	3	2a
	6TPB330MAL	6.3	85	330	5.0	105	10	207.9	40	2000	3	2a
	6TPB220ML	6.3	105	220	6.3	105	10	138.6	40	2000	3	2a
	4TPB330ML	4.0	105	330	4.0	105	10	132.0	40	2000	3	2a
D4	10TPB330M	10	105	330	10	105	10	330.0	35	3000	—	2a
	10TPB220M	10	105	220	10	105	10	220.0	40	3000	3	2a
	6TPB470M	6.3	105	470	6.3	105	15	296.1	35	3000	3	2a
	6TPB330M	6.3	105	330	6.3	105	10	207.9	40	3000	3	2a

※1 100k to 500kHz,45°C