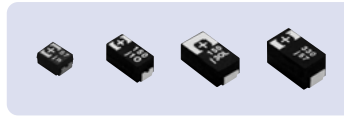


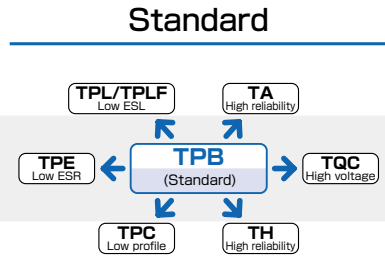
Conductive polymer type / Surface mount type

RoHS compliance

TPB Series



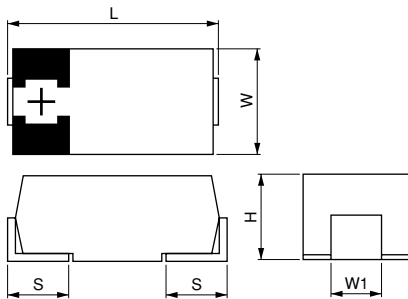
TPB series are the standard products corresponding to the diversification of the needs.
B2 size is the miniaturized version of TPB series.



Specifications

Items	Condition	Specifications				
		2.5	4.0	6.3	8.0	10
Rated voltage (V)	—	2.5	4.0	6.3	8.0	10
Surge voltage (V)	—	3.2	5.0	8.0	10	13
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	≤ 1.5 times of 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 *4TPB150MA:85°C	ΔC/C	Within ±5% of the initial value			
		DF	≤ The initial limit			
		LC	≤ 3 times of the initial limit			

Dimensions



Size list

RV : Rated voltage

μF \ RV	2.5	4.0	6.3	8.0	10.0
33					B2
47					B2,C
68		B2	B2		C
82				C	
100	B2				D3L
150		B2,C			D3L
220	C		D3L		C,D3L,D4
330		D3L	D3L,D4		D4
470			D4		

(unit: mm)

Size code	L ±0.2*1	W ±0.2	H ±0.2	S ±0.2	W1 ±0.1
B2	3.5	2.8	1.9	0.8	2.2
C	6.0	3.2	2.8	1.3	1.8
D3L	7.3	4.3	2.8	1.3	2.4
D4	7.3	4.3	3.8	1.3	2.4

*1 ±0.3:D3L,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 (mΩmax) 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
	4TPB150MA	4.0	85	150	3.2	105	8.0	60.0	70	1100	3	3
	4TPB68M	4.0	105	68	4.0	105	8.0	27.2	70	1100	3	3
	2R5TPB100M	2.5	105	100	2.5	105	8.0	25.0	70	1100	3	3
C	10TPB68MC	10	105	68	10.0	105	8.0	68.0	55	1500	3	3
	10TPB47MC	10	105	47	10.0	105	8.0	47.0	55	1500	3	3
	8TPB82MC	8.0	105	82	8.0	105	8.0	65.6	45	1700	3	3
	4TPB150MC	4.0	105	150	4.0	105	8.0	60.0	45	1700	3	3
	2R5TPB220MC	2.5	105	220	2.5	105	8.0	55.0	45	1700	3	3
D3L	10TPB220ML	10	105	220	10	105	10.0	220.0	40	2000	—	2a
	10TPB150ML	10	105	150	10	105	10.0	150.0	40	2000	3	2a
	10TPB100ML	10	105	100	10	105	8.0	100.0	55	1900	3	2a
	6TPB330ML	6.3	105	330	6.3	105	10.0	207.9	40	2000	3	2a
	6TPB220ML	6.3	105	220	6.3	105	10.0	138.6	40	2000	3	2a
	4TPB330ML	4.0	105	330	4.0	105	10.0	132.0	40	2000	3	2a
D4	10TPB330M	10	105	330	10	105	10.0	330.0	35	3000	—	2a
	10TPB220M	10	105	220	10	105	10.0	220.0	40	3000	3	2a
	6TPB470M	6.3	105	470	6.3	105	15.0	296.1	35	3000	3	2a
	6TPB330M	6.3	105	330	6.3	105	10.0	207.9	40	3000	3	2a

Please refer to page 71 for the compensation coefficient of maximum allowable ripple current.

※1 100k to 500kHz,45°C