TPB Series

Update

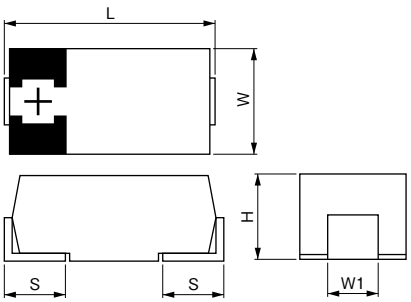
RoHS compliance
Standard

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			
Rated voltage (V)	–		2.5	4.0	6.3	10
Surge voltage (V)	–		2.9	4.6	7.2	12
Category temperature range (℃)	–		−55 to +105			
Capacitance tolerance (%)	120Hz/20℃		M : ±20			
Rated capacitance range (μF)	120Hz/20℃		33 to 470			
Dissipation Factor (DF)	120Hz/20℃		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℃		Please see the attached characteristics list			
Characteristics of impedance ratio at high temp. and low temp.	100kHz/20℃	−55℃ Z/Z20℃	0.6 to 2.0			
		+105℃ Z/Z20℃	0.6 to 2.0			
Endurance	105℃, 2,000h B2 size :105℃, 1,000h, Rated voltage applied ※Rated temp. 85℃ products: 85℃, 1,000h, rated voltage applied	△C/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℃, 90 to 95%RH, 500h, No-applied voltage	△C/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℃, 1,000 cycles, 1kΩdischarge resistance, surge voltage applied ※Rated temp. 85℃ products:85℃	△C/C	Within±5% of the initial value			
		DF	Within the initial limit			
		LC	≤ 3 times of the initial limit			

Dimensions



(unit: mm)

Size code	L ±0.2※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

※1 ±0.3:D3L,D4
※2 ±0.1:B2

Size list

RV : Rated voltage

μF \ RV	2.5	4.0	6.3	8.0	10.0
33					B2
47					B2
68		B2	B2		
100	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 (℃)	Rated capacitance (μF)	Category voltage (V)	Category temperature (℃)	DF (% max)	LC (μA) max/5min.	ESR (mΩmax) 100kHz/20℃	Maximum allowable ripple current (mArms) 100kHz※1	MSL	
											Reflow temp. ≤ 260℃	Reflow temp. ≤ 250℃
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
	2R5TPB100M	2.5	105	100	2.5	105	8.0	25.0	70	1100	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
	6TPB330ML	6.3	105	330	6.3	105	10.0	207.9	40	2000	3	2a
	6TPB330MAL	6.3	85	330	5.0	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 65 for the compensation coefficient of maximum allowable ripple current.

※1 100k to 500kHz,45℃

※ Red letters : New models