

# TPB Series

Standard Products (B2 Size)

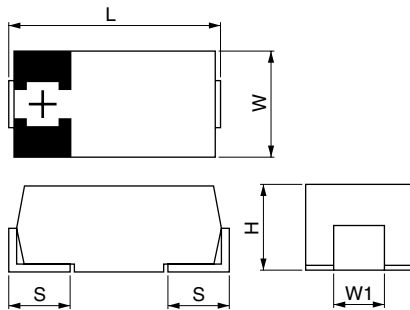


B2 size is the miniaturized version of TPB series.

## Specifications

Items	Condition	Specifications				
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 220				
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, 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 the initial limit			
		LC	≤ 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 the initial limit			
		LC	≤ 3 times the initial limit			
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied ※ 6TPB100MA, 4TPB150MA, 2R5TPB220MA: 85°C	ΔC/C	Within±5% of the initial value			
		DF	≤ The initial limit			
		LC	≤ 3 times the initial limit			

## Dimensions



(unit: mm)

Size code	L ±0.2	W ±0.2	H ±0.1	S ±0.2	W ±0.1
B2	3.5	2.8	1.9	0.8	2.2

## Size List

RV : Rated voltage

RV μF	2.5	4.0	6.3	8.0	10
33				B2	B2
47			B2	B2	B2
68		B2	B2		
100	B2	B2	B2		
150		B2			
220	B2				

TPB Series Characteristics List

Size code	SANYO 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		
	8TPB47M	8.0	105	47	8.0	105	8.0	37.6	70	1100		
	8TPB33M	8.0	105	33	8.0	105	8.0	26.4	70	1100		
	6TPB100MA	6.3	85	100	5.0	105	8.0	63.0	55	1200		
	6TPB100MAV	6.3	85	100	5.0	105	8.0	63.0	45	1400		
	6TPB68M	6.3	105	68	6.3	105	8.0	42.8	70	1100		
	6TPB47M	6.3	105	47	6.3	105	8.0	29.6	70	1100		
	4TPB150MA	4.0	85	150	3.2	105	8.0	60.0	70	1100		
	4TPB100M	4.0	105	100	4.0	105	8.0	40.0	70	1100		
	4TPB100MV	4.0	105	100	4.0	105	8.0	40.0	45	1300		
	4TPB68M	4.0	105	68	4.0	105	8.0	27.2	70	1100		
	2R5TPB220MA	2.5	85	220	2.0	105	8.0	55.0	55	1200		
	2R5TPB100M	2.5	105	100	2.5	105	8.0	25.0	70	1100		

Please refer to page 141 for the compensation coefficient of maximum allowable ripple current.

\*\*1 100k to 500kHz, 45°C

Tantalum Solid Capacitors with Conductive Polymer  
POSCAP

SMD Type  
TPB Series

# TPB Series

Standard Products

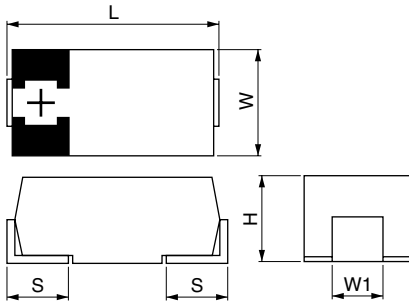


TPB series are the standard products corresponding to the diversification of the needs.

## Specifications

Items	Condition	Specifications				
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	47 to 1,000				
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, Rated voltage applied	ΔC/C	Within±20% of the initial value			
		DF	≤ 1.5 times the initial limit			
		LC	≤ The initial limit			
Damp heat (Steady State)	60°C, 90 to 95%RH, 500h, No-applied voltage	ΔC/C	Within+50%, -20% of the initial value (2R5TPB1000M)			
			Within+40%, -20% of the initial value (Except for the above model)			
		DF	≤ 1.5 times the initial limit			
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied	ΔC/C	Within±5% of the initial value			
		DF	≤ The initial limit			
		LC	≤ 3 times the initial limit			

## Dimensions



(unit: mm)

Size code	L ±0.2*1	W ±0.2	H ±0.2	S ±0.2	W1 ±0.1
C	6.0	3.2	2.8	1.3	1.8
D3L	7.3	4.3	2.8	1.3	2.4
D3	7.3	4.3	3.1	1.3	2.4
D4	7.3	4.3	3.8	1.3	2.4

\*1 ±0.3:D3L,D4

## Size List

RV : Rated voltage

μF \ RV	2.5	4.0	6.3	8.0	10.0
47					C
68					C
82				C	
100			C		D3,D3L
150		C	C,D3,D3L		D3L
220	C	C,D3,D3L	D3L		C,D3L,D4
330	D3,D3L	D3L	D3L,D4		D4
470	D3L	D3L,D4	D4		
680	D3L,D4	D4			
1000	D4				

TPB Series Characteristics List

Size code	SANYO 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 <sup>※1</sup>	MSL	
											Reflow Temp. ≤ 260°C	Reflow Temp. ≤ 250°C
C	10TPB220MC	10	105	220	10	105	10.0	220	55	1500	※2	3
	10TPB68MC	10	105	68	10.0	105	8.0	68.0	55	1500	3	
	10TPB47MC	10	105	47	10.0	105	8.0	47.0	55	1500		
	8TPB82MC	8.0	105	82	8.0	105	8.0	65.6	45	1700		
	6TPB150MC	6.3	105	150	6.3	105	8.0	94.5	45	1700		
	6TPB100MC	6.3	105	100	6.3	105	8.0	63.0	45	1700		
	4TPB220MC	4.0	105	220	4.0	105	8.0	88.0	45	1700		
	4TPB150MC	4.0	105	150	4.0	105	8.0	60.0	45	1700		
	2R5TPB220MC	2.5	105	220	2.5	105	8.0	55.0	45	1700		
D3L	10TPB220ML	10	105	220	10	105	10.0	220.0	40	2000	※2	2a
	10TPB150ML	10	105	150	10	105	10.0	150.0	40	2000	3	
	10TPB100ML	10	105	100	10	105	8.0	100.0	55	1900		
	6TPB330ML	6.3	105	330	6.3	105	10.0	207.9	40	2000		
	6TPB220ML	6.3	105	220	6.3	105	10.0	138.6	40	2000		
	6TPB150ML	6.3	105	150	6.3	105	8.0	94.5	55	1900		
	4TPB470ML	4.0	105	470	4.0	105	10.0	188.0	40	2000		
	4TPB330ML	4.0	105	330	4.0	105	10.0	132.0	40	2000		
	4TPB220ML	4.0	105	220	4.0	105	8.0	88.0	55	1900		
	2R5TPB680ML	2.5	105	680	2.5	105	10.0	170.0	40	2000		
	2R5TPB470ML	2.5	105	470	2.5	105	10.0	117.5	40	2000		
	2R5TPB330ML	2.5	105	330	2.5	105	8.0	82.5	55	1900		
D4	10TPB330M	10	105	330	10	105	10.0	330.0	35	3000	※2	3
	10TPB220M	10	105	220	10	105	10.0	220.0	40	3000	3	
	6TPB470M	6.3	105	470	6.3	105	15.0	296.1	35	3000		
	6TPB330M	6.3	105	330	6.3	105	10.0	207.9	40	3000		
	4TPB680M	4.0	105	680	4.0	105	15.0	272.0	35	3000		
	4TPB470M	4.0	105	470	4.0	105	10.0	188.0	40	3000		
	2R5TPB1000M	2.5	105	1000	2.5	105	15.0	250.0	30	3000		
	2R5TPB680M	2.5	105	680	2.5	105	10.0	170.0	40	3000		

Please refer to page 141 for the compensation coefficient of maximum allowable ripple current.

※1 100k to 500kHz, 45°C

※2 Under evaluation