

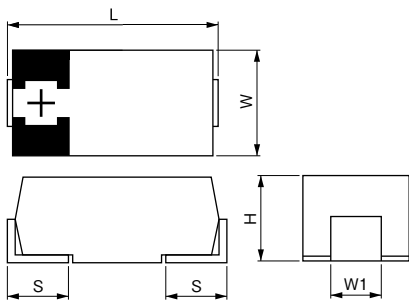
TPB series are the standard products.  
TPC series are low-profile products derived from the TPB series.  
B2 size is the miniaturized version of TPB series.



## Specifications

Items	Condition	Specifications				
		4.0	6.3	8.0	10	12.5
Rated voltage (V)	—	4.0	6.3	8.0	10	12.5
Surge voltage (V)	—	4.6	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	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 <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			

## Dimensions



(unit: mm)

Size code	L ±0.2*1	W ±0.2	H ±0.1*2	S ±0.2	W1 ±0.1
B1	3.5	2.8	1.1	0.8	2.2
B2	3.5	2.8	1.9	0.8	2.2
D2	7.3	4.3	1.9	1.3	2.4
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 ±0.2:D3L, D4

## Size list

RV : Rated voltage

μF \ RV	4.0	6.3	8.0	10.0	12.5
10					B1
15					B1
22			B1		
33		B1		B1, B2	
47		B1		B2	
68	B2	B2		D2	
100		D2		D2	
150		D2	D2	D3L	
220		D3L		D3L, D4	
330	D3L	D2, 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 (mΩmax) 100kHz/20°C	Maximum allowable ripple current (mA <sub>rms</sub> ) 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	10.0	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
	10TPB330M	10	105	330	10	105	10.0	330.0	35	3000	—	2a
D4	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
	6TPB330M	6.3	105	330	6.3	105	10.0	207.9	40	3000	3	2a

\*1 100k to 500kHz,45°C

**Selection guide**

- Series system diagram
- Image of case size
- Products list
- Packing specifications (SMD type)
- Packing specifications (Radial lead type)

**Technical data**

- Recommended soldering condition
- Fundamental structure
- Characteristics
- Reliability

**Surface mount type**

- SVPF
- SVPE
- SVPS
- SVPD
- SVPC
- SVPB
- SVPA
- SVQP
- SVP

**Radial lead type**

- SEPF
- SEPC
- SEQP
- SEP

Catalog Deletion and EOL series

**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 (mΩmax) 100kHz/20°C	Maximum allowable ripple current (mA <sub>rms</sub> ) 100kHz*1	MSL	
											Reflow temp. ≤ 260°C	Reflow temp. ≤ 250°C
B1	12TPC15M	12.5	85	15	10	105	10.0	18.8	80	800	3	3
	12TPC10M	12.5	85	10	10	105	10.0	12.5	80	800	3	3
	10TPC33MB	10	85	33	8.0	105	10.0	33.0	70	1000	3	3
	8TPC22M	8.0	85	22	6.3	105	10.0	17.6	70	1000	3	3
	6TPC47MB	6.3	85	47	5.0	105	10.0	29.6	70	1000	3	3
	6TPC47M	6.3	85	47	5.0	105	10.0	29.6	55	1100	3	3
D2	10TPC100M	10	105	100	10	105	10.0	100.0	45	1700	3	2a
	10TPC68M	10	105	68	10	105	10.0	68.0	45	1700	3	2a
	8TPC150M	8.0	105	150	8.0	105	10.0	120.0	40	1900	3	2a
	6TPC330MA	6.3	85	330	5.0	105	10.0	207.9	40	1900	3	2a
	6TPC150M	6.3	105	150	6.3	105	10.0	94.5	40	1900	3	2a
	6TPC100M	6.3	105	100	6.3	105	10.0	63.0	45	1700	3	2a

\*1 100k to 500kHz,45°C

**Selection guide**

- Series system diagram
- Image of case size
- Products list
- Explanation of part numbers
- Packing specifications

**Technical data**

- Marking
- Recommended land pattern dimension
- Recommended soldering condition
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- Characteristics
- Reliability

**Surface mount type**

- TPU
- TPH
- TPG
- TPSF
- TPE
- TPB/TPC**
- TPL·TPLF
- TPF
- TA
- TV
- TH
- TQC

Catalog Deletion and EOL models

单击下面可查看定价，库存，交付和生命周期等信息

[>>Panasonic\(松下\)](#)