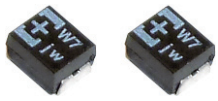
Surface Mount Type

POSCAP

Series : **TPE**
Size : **B**



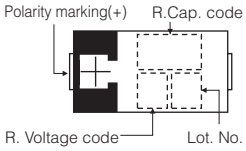
Features

- Small size (L 3.5×W 2.8×H 1.9 mm)
- Low ESR (15 mΩ)
- RoHS compliance, Halogen free

Specifications

Size code	B2	
Category temperature range	–55 °C to +105 °C	
Rated voltage range	2.0 V.DC to 10 V.DC	
Category voltage range	1.8 V.DC to 8.0 V.DC	
Rated capacitance range	47 µF to 470 µF	
Capacitance tolerance	±20 % (120 Hz / + 20 °C)	
Leakage current	Please see the attached characteristics list	
Dissipation factor (tan δ)	Please see the attached characteristics list	
Surge voltage (V.DC)	Rated voltage × 1.15	
Endurance	+105 °C, 1000 h rated voltage applied ✻ Rated temp, +85 °C Products : +85 °C, 1000 h, rated voltage applied	
	Capacitance change	Within ±20 % of the initial value
	tan δ	≦ 1.5 times of the initial limit
	DC leakage current	Within the initial limit
Damp heat (Steady State)	+60 °C, 90 % to 95 %, 500 h, No-applied voltage	
	Capacitance change	Within +50 %, –20 % of the initial value (2R5TPE220MAZB (MAPB, MAFB), 2R5TPE330MAZB, 2TPE330MAFB (MADGB), 2TPE470MAJGB (MAFB), 2TPE330MFB, ETPE330MAFB (MA9GB))
		Within +40 %, –20 % of the initial value (Except for above model)
	tan δ	≦ 1.5 times of the initial limit
	DC leakage current	≦ 3 times of the initial limit

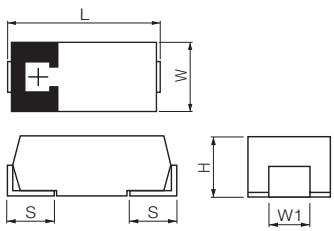
Marking



R. Voltage (V.DC)	2.0	2.5	4.0	6.3	8.0	10.0
Code	d	e	g	j	k	A

R. Cap. (µF)	47	100	120	150	220	330	470
Code	S7	A8	C8	E8	J8	N8	S8

Dimensions (not to scale)



Unit : mm

Size code	L±0.2	W±0.2	H±0.1	S±0.2	W1±0.1
B2	3.5	2.8	1.9	0.8	2.2

✻ Externals of figure are the reference.

Characteristics list

Series	Rated voltage (V.DC)	Rated temp. (°C)	Category voltage (V.DC)	Category temp. (°C)	Rated capacitance (µF)	Case size (mm) L	W	H	Size code	Specifications Ripple *1 current (mArm.s.)	ESR *2 (mΩ max.)	tan δ *3	LC *4 (µA)	Standard Part number	Min. Packaging Q'ty (pcs)
TPE	2	105	2.0	105	330	3.5	2.8	1.9	B2	2000	15	0.08	132.0	2TPE330MFB	2000
		85	1.8	105		3.5	2.8	1.9		2000	15	0.08	132.0	2TPE330MAFB	2000
		85	1.8	105		3.5	2.8	1.9		2000	13/300 kHz	0.10	132.0	2TPE330MADGB	2000
		85	1.8	105	470	3.5	2.8	1.9		2300	15	0.10	188.0	2TPE470MAFB	2000
		85	1.8	105		3.5	2.8	1.9		2300	11/300 kHz	0.08	188.0	2TPE470MAJGB	2000
	2.5	85	2.0	105	220	3.5	2.8	1.9		2000	15	0.08	110.0	2R5TPE220MAFB	2000
		105	2.5	105		3.5	2.8	1.9		1800	15/300 kHz	0.08	110.0	2R5TPE220MFGB	2000
		105	2.5	105		3.5	2.8	1.9		1700	21	0.08	55.0	2R5TPE220MLB	2000
		85	2.0	105		3.5	2.8	1.9		1600	25	0.08	55.0	2R5TPE220MAPB	2000
		105	2.5	105		3.5	2.8	1.9		1400	35	0.08	55.0	2R5TPE220MZB	2000
		85	2.0	105		3.5	2.8	1.9		1400	35	0.08	55.0	2R5TPE220MAZB	2000
		85	2.0	105	330	3.5	2.8	1.9		1400	35	0.08	82.5	2R5TPE330MAZB	2000
		85	2.0	105		3.5	2.8	1.9		3200	9/300 kHz	0.08	165.0	ETPE330MA9GB	2000
		NEW 105	2.0	105		3.5	2.8	1.9		3200	9/300 kHz	0.08	165.0	ETPE330M9GB	2000
		NEW 85	2.0	105		3.5	2.8	1.9		2700	15	0.08	165.0	ETPE330MAFB	2000
		NEW 105	2.0	105		3.5	2.8	1.9		2700	15	0.08	165.0	ETPE330MFB	2000
	4	105	4.0	105	100	3.5	2.8	1.9		1400	35	0.08	40.0	4TPE100MZB	2000
		85	3.2	105	150	3.5	2.8	1.9		1400	35	0.08	60.0	4TPE150MAZB	2000
		85	3.2	105	220	3.5	2.8	1.9		1400	35	0.08	88.0	4TPE220MAZB	2000
	6.3	105	6.3	105	100	3.5	2.8	1.9		1600	25	0.08	63.0	6TPE100MPB	2000
		85	5.0	105		3.5	2.8	1.9		1400	35	0.08	63.0	6TPE100MAZB	2000
		105	6.3	105		3.5	2.8	1.9		1400	35	0.08	63.0	6TPE100MZB	2000
		85	5.0	105	120	3.5	2.8	1.9		1400	35	0.08	75.6	6TPE120MAZB	2000
		85	5.0	105	150	3.5	2.8	1.9		1600	25	0.08	94.5	6TPE150MAPB	2000
		85	5.0	105		3.5	2.8	1.9		1400	35	0.08	94.5	6TPE150MAZB	2000
		85	5.0	105	220	3.5	2.8	1.9		1400	35	0.10	138.6	6TPE220MAZB	2000
		NEW 85	5.0	105		3.5	2.8	1.9		1600	25	0.10	138.6	6TPE220MAPB	2000
	8	85	6.3	105	100	3.5	2.8	1.9		1400	35	0.08	80.0	8TPE100MAZB	2000
	10	85	8.0	105	47	3.5	2.8	1.9		1400	35	0.08	47.0	10TPE47MAZB	2000

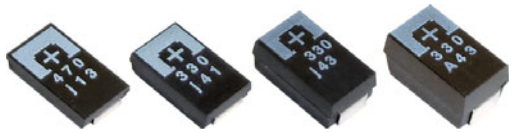
✻1 Ripple current (100 kHz/ +45 °C), ✻2 ESR (100 kHz/+20 °C) ✻3 tan δ (120 Hz/+20 °C) ✻4 After 5 minutes

◆ Please refer to each page in this catarog for “Reflow conditions” and “Taping specifications”.

Surface Mount Type

POSCAP

Series : **TPE**
Size : **D**



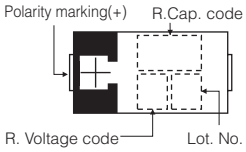
Features

- Low profile (Height 1.5 mm max.)
- Low ESR (7 mΩ)
- Large capacitance (1500 µF max.)
- RoHS compliance, Halogen free

Specifications

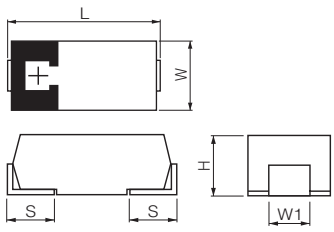
Size code	D15E	D2E	D3L	D4
Category temperature range	–55 °C to +105 °C			
Rated voltage range	6.3 V.DC	2.5 V.DC to 10 V.DC		
Category voltage range	5.0 V.DC	2.5 V.DC to 10 V.DC		
Rated capacitance range	470 µF	68 µF to 470 µF	220 µF to 680 µF	330 µF to 1500 µF
Capacitance tolerance	±20 % (120 Hz / + 20 °C)			
Leakage current	Please see the attached characteristics list			
Dissipation factor (tan δ)	Please see the attached characteristics list			
Surge voltage (V.DC)	Rated voltage × 1.15			
Endurance	+105 °C, 2000 h rated voltage applied ✻ Rated temp, +85 °C Products : +85 °C, 1000 h, rated voltage applied 6TPE330MAP, 6TPE470MAZU : +85 °C, 2000 h,			
	Capacitance change	Within ±20 % of the initial value		
	tan δ	≦ 1.5 times of the initial limit		
	DC leakage current	Within the initial limit		
Damp heat (Steady State)	+60 °C, 90 % to 95 %, 500 h, No-applied voltage			
	Capacitance change	Within +50 %, –20 % of the initial value (2R5TPE220M (I, F, 9), 2R5TPE330M (I, F, C, 9, 7), 2R5TPE470M (I, F, C, 9, 7), 2R5TPE1000MF, 2R5TPE1500M (F, C))		
		Within +40 %, –20 % of the initial value (Except for above model)		
	tan δ	≦ 1.5 times of the initial limit		
	DC leakage current	≦ 3 times of the initial limit		

Marking



R. Voltage (V.DC)	2.5	4.0	6.3	10.0
Code	e	g	j	A

Dimensions (not to scale)



Unit : mm

Size code	L±0.3	W±0.2	H±0.2*1	S±0.2	W1±0.1
D15E	7.3	4.3	1.4	1.1	2.4
D2E	7.3	4.3	1.8	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

✻ Externals of figure are the reference.
✻ 1 ±0.1 :D15E, D2E

Characteristics list

Series	Rated voltage (V.DC)	Rated temp. (°C)	Category voltage (V.DC)	Category temp. (°C)	Rated capacitance (µF)	Case size (mm) L	W	H	Size code	Specifications Ripple *1 current (mArm.s.)	ESR *2 (mΩ max.)	tan δ *3	LC *4 (µA)	Standard Part number	Min. Packaging Q'ty (pcs)
TPE	2.5	105	2.5	105	220	7.3	4.3	1.8	D2E	3900	9	0.10	55.0	2R5TPE220M9	3000
		105	2.5	105		7.3	4.3	1.8		3100	15	0.10	55.0	2R5TPE220MF	3000
		105	2.5	105		7.3	4.3	1.8		2800	18	0.10	55.0	2R5TPE220MI	3000
		105	2.5	105		7.3	4.3	1.8		2400	25	0.10	55.0	2R5TPE220M	3000
		105	2.5	105	330	7.3	4.3	1.8		4400	7	0.10	82.5	2R5TPE330M7	3000
		105	2.5	105		7.3	4.3	1.8		3900	9	0.10	82.5	2R5TPE330M9	3000
		105	2.5	105		7.3	4.3	1.8		3500	12	0.10	82.5	2R5TPE330MC	3000
		105	2.5	105		7.3	4.3	1.8		3100	15	0.10	82.5	2R5TPE330MF	3000
		105	2.5	105		7.3	4.3	1.8		2800	18	0.10	82.5	2R5TPE330MI	3000
		105	2.5	105		7.3	4.3	1.8		2400	25	0.10	82.5	2R5TPE330M	3000
		105	2.5	105	470	7.3	4.3	1.8		4400	7	0.10	117.5	2R5TPE470M7	3000
		105	2.5	105		7.3	4.3	1.8		3900	9	0.10	117.5	2R5TPE470M9	3000
		105	2.5	105		7.3	4.3	1.8		3500	12	0.10	117.5	2R5TPE470MC	3000
		105	2.5	105		7.3	4.3	1.8		3100	15	0.10	117.5	2R5TPE470MF	3000
		105	2.5	105		7.3	4.3	1.8		2800	18	0.10	117.5	2R5TPE470MI	3000
		105	2.5	105	680	7.3	4.3	2.8	D3L	3500	12	0.10	170.0	2R5TPE680MCL	2500
		105	2.5	105		7.3	4.3	2.8		3100	15	0.10	170.0	2R5TPE680MFL	2500
		105	2.5	105	1000	7.3	4.3	3.8	D4	3900	15	0.15	250.0	2R5TPE1000MF	2000
		105	2.5	105	1500	7.3	4.3	3.8		4400	12	0.15	375.0	2R5TPE1500MC	2000
		105	2.5	105		7.3	4.3	3.8		3900	15	0.15	375.0	2R5TPE1500MF	2000
	4	105	4.0	105	150	7.3	4.3	1.8	D2E	2800	18	0.10	60.0	4TPE150MI	3000
		105	4.0	105	220	7.3	4.3	1.8		3100	15	0.10	88.0	4TPE220MF	3000
		105	4.0	105		7.3	4.3	1.8		2800	18	0.10	88.0	4TPE220MI	3000
		105	4.0	105		7.3	4.3	1.8		2400	25	0.10	88.0	4TPE220M	3000
		105	4.0	105	330	7.3	4.3	1.8		2800	18	0.10	132.0	4TPE330MI	3000
		105	4.0	105		7.3	4.3	1.8		2400	25	0.10	132.0	4TPE330M	3000
		105	4.0	105	470	7.3	4.3	2.8	D3L	3500	12	0.10	188.0	4TPE470MCL	2500
		105	4.0	105		7.3	4.3	2.8		3100	15	0.10	188.0	4TPE470MFL	2500
		105	4.0	105		7.3	4.3	2.8		2800	18	0.10	188.0	4TPE470MIL	2500
		105	4.0	105		7.3	4.3	2.8		2400	25	0.10	188.0	4TPE470ML	2500
	6.3	105	6.3	105	100	7.3	4.3	1.8	D2E	2800	18	0.10	63.0	6TPE100MI	3000
		105	6.3	105		7.3	4.3	1.8		2400	25	0.10	63.0	6TPE100M	3000
		105	6.3	105	150	7.3	4.3	1.8		3100	15	0.10	94.5	6TPE150MF	3000
		105	6.3	105		7.3	4.3	1.8		2800	18	0.10	94.5	6TPE150MI	3000
		105	6.3	105		7.3	4.3	1.8		2400	25	0.10	94.5	6TPE150M	3000
		105	6.3	105	220	7.3	4.3	1.8		2800	18	0.10	138.6	6TPE220MI	3000
		105	6.3	105		7.3	4.3	1.8		2400	25	0.10	138.6	6TPE220M	3000
		85	5.0	105		7.3	4.3	1.8		2400	25	0.10	138.6	6TPE220MAP	3000
		85	5.0	105	330	7.3	4.3	1.8		2400	25	0.10	207.9	6TPE330MAP	3000
		85	5.0	105		7.3	4.3	2.8	D3L	2400	25	0.10	207.9	6TPE330MAL	2500
		85	5.0	105		7.3	4.3	2.8		3900	9/500 Hz	0.10	207.9	6TPE330MA9EL	2500
		105	6.3	105		7.3	4.3	2.8		3100	15	0.10	207.9	6TPE330MFL	2500
		105	6.3	105		7.3	4.3	2.8		2800	18	0.10	207.9	6TPE330MIL	2500
		105	6.3	105		7.3	4.3	2.8		2400	25	0.10	207.9	6TPE330ML	2500
		85	5.0	105		7.3	4.3	3.8	D4	4400	10	0.10	207.9	6TPE330MAA	2000
		85	5.0	105	470	7.3	4.3	1.4	D15E	1700	35	0.10	296.1	6TPE470MAZU	4000
		105	6.3	105		7.3	4.3	3.8	D4	3500	18	0.15	296.1	6TPE470MI	2000
		105	6.3	105		7.3	4.3	3.8		3000	25	0.15	296.1	6TPE470M	2000
		105	6.3	105	680	7.3	4.3	3.8		3500	18	0.15	428.4	6TPE680MI	2000
		105	6.3	105		7.3	4.3	3.8		3000	25	0.15	428.4	6TPE680M	2000
	10	105	10.0	105	68	7.3	4.3	1.8	D2E	2400	25	0.10	68.0	10TPE68M	3000
		105	10.0	105	220	7.3	4.3	2.8	D3L	2800	18	0.10	220.0	10TPE220MIL	2500
		105	10.0	105		7.3	4.3	2.8		2400	25	0.10	220.0	10TPE220ML	2500
		105	10.0	105	330	7.3	4.3	3.8	D4	3000	25	0.10	330.0	10TPE330M	2000

✻1 Ripple current (100 kHz/ +45 °C), ✻2 ESR (100 kHz/+20 °C) ✻3 tan δ (120 Hz/+20 °C) ✻4 After 5 minutes

◆ Please refer to each page in this catarog for “Reflow conditions” and “Taping specifications”.