



Specifications

Items	Specifications	
Size code	B2	
Category temperature range	-55 to +105 °C	
Rated voltage range	2.0 to 10 V.DC	
Rated capacitance range	47 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	Rated voltage x1.15	
Endurance	105 °C, 1,000 h rated voltage applied ※Rated temp, 85 °C Products: 85 °C, 1,000 h, 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, 500 h, No-applied voltage	
	ΔC/C	Within +50 %, -20 % (2R5TPE220MAZB(MAPB,MAFB), 2R5TPE330MAZB, 2TPE330MAFB(MADGB), 2TPE470MAJGB(MAFB), 2TPE330MFB) Within +40 %, -20 % of the initial value (Except for above model)
	DF	≤1.5 times of the initial limit
	LC	≤3 times of the initial limit

Marking and dimensions

(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

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

Characteristics list

Series	Rated voltage (V.DC)	Rated temp. (°C)	Category voltage (V.DC)	Category temp. (°C)	Rated capacitance (μF)	Case size (mm)			Size code	Specifications				Standard		
						L	W	H		Maximum allowable ripple current (mA _{rms}) 100 kHz ※1	ESR ※2 (mΩ max.)	tan δ ※3	LC ※4 (μA)	Part number	Min. Packaging Qty (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		470	3.5	2.8		1.9	2000	13/300 kHz	0.08	132.0	2TPE330MADGB	2000
		85	1.8	105	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	0.10	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
		4	105	4.0		105	100	3.5		2.8	1.9	1400	35	0.08	40.0	4TPE100MZB
	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	
		85	5.0	105	150	3.5	2.8	1.9		1400	35	0.08	75.6	6TPE120MAZB	2000	
		85	5.0	105		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
	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 catalog for "Reflow conditions" and "Taping specifications".

※: Small order quantity (500 pcs/reel) is available with TPE series. Please contact our sales representative if you prefer it.

※: Please contact us about rated temperature of each models.

Surface mount type

TPE Series



D size

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

Specifications

Items	Specifications			
Size code	D15E	D2E	D3L	D4
Category temperature range	-55 to +105 °C			
Rated voltage range	2.5 to 10 V.DC			
Rated capacitance range	470 μF	68 to 470 μF	220 to 680 μF	330 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	Rated voltage x1.15			
Endurance	105 °C, 2,000 h, rated voltage applied ※Rated temp, 85 °C products:85 °C, 1,000 h, rated voltage applied6TPE330MAP, 6TPE470MAZU:85 °C, 2,000 h			
	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, 500 h, No-applied voltage			
	ΔC/C	Within+50 %, -20 %(2R5TPE220M(I, F, 9), 2R5TPE330M(I, F, C, 9, 7), 2R5TPE470M(I, F, C, 9, 7), 2R5TPE1000M(F, C)) Within+40 %, -20 % of the initial value (Except for above model)		
	DF	≤ 1.5 times of the initial limit		
	LC	≤3 times of the initial limit		

Marking and dimensions

(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

※1 ±0.1 : D2E, D15E

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

Characteristics list

Series	Rated voltage (V.DC)	Rated temp. (°C)	Category voltage (V.DC)	Category temp. (°C)	Rated capacitance (μF)	Case size (mm)			Size code	Specifications				Standard		
						L	W	H		Maximum allowable ripple current (mA rms) 100 kHz ※1	ESR ※2 (mΩ max.)	tan δ ※3	LC ※4 (μA)	Part number	Min. Packaging Qty (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	D2E	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	D2E	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	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	D2E	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	330	7.3	4.3	1.8	D2E	2400	25	0.10	88.0	4TPE220M	3000	
		105	4.0	105		7.3	4.3	1.8		2800	18	0.10	132.0	4TPE330MI	3000	
		105	4.0	105	470	7.3	4.3	1.8	D3L	2400	25	0.10	132.0	4TPE330M	3000	
		105	4.0	105		7.3	4.3	2.8		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	D2E	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	220	7.3	4.3	1.8	D2E	2400	25	0.10	94.5	6TPE150M	3000
			105	6.3	105		7.3	4.3	1.8		2800	18	0.10	138.6	6TPE220MI	3000
			105	6.3	105	330	7.3	4.3	1.8	D2E	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	7.3		4.3	1.8	D2E		2400	25	0.10	207.9	6TPE330MAP	3000
	85		5.0	105	7.3		4.3	2.8	2400		25	0.10	207.9	6TPE330MAL	2500	
	105		6.3	105	470	7.3	4.3	2.8	D3L	3900	9/500 kHz	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	7.3		4.3	1.4	D15E		1700	35	0.10	296.1	6TPE470MAZU	4000	
105	6.3		105	680	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	D4	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			
105	10.0	105	68	7.3	4.3	1.8	D2E	2400	25	0.10	68.0	10TPE68M	3000			
10	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 catalog for "Reflow conditions" and "Taping specifications".

※: Small order quantity (500 pcs/reel) is available with TPE series. Please contact our sales representative if you prefer it.

※: Please contact us about rated temperature of each models.