Surface Mount Type

Series : **TPF**

POSCAP

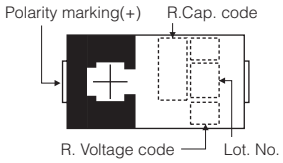
Features

- Super low ESR (5 mΩ max.)
- Large capacitance (1000 µF max.)
- RoHS compliance, Halogen free

Specifications

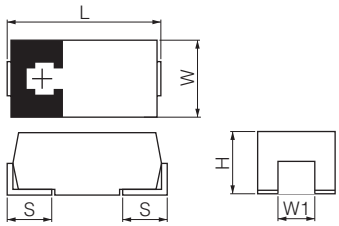
Size code	D2E	D3L	D4
Category temperature range	–55 °C to +105 °C		
Rated voltage range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Category voltage range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Rated capacitance range	220 µF to 330 µF	150 µF to 680 µF	470 µF to 1000 µF
Capacitance tolerance	±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		
	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 (2TPF220M6, 2TPF330M6, ETPF1000M6H (5H))	
		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	10.0
Code	d	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
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 :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)
TPF	2	105	2.0	105	220	7.3	4.3	1.8	D2E	4700	6	0.10	88.0	2TPF220M6	3000
		105	2.0	105	330	7.3	4.3	1.8		4700	6	0.10	132.0	2TPF330M6	3000
	2.5	105	2.5	105	330	7.3	4.3	2.8	D3L	4400	7	0.10	82.5	2R5TPF330M7L	2500
		105	2.5	105	470	7.3	4.3	2.8		4400	6	0.10	117.5	2R5TPF470M6L	2500
		105	2.5	105		7.3	4.3	2.8		4400	7	0.10	117.5	2R5TPF470M7L	2500
		105	2.5	105		7.3	4.3	2.8		4400	10	0.10	117.5	2R5TPF470ML	2500
		105	2.5	105		7.3	4.3	3.8	D4	6100	5	0.10	117.5	ETPF470M5H	2000
		105	2.5	105	680	7.3	4.3	2.8	D3L	4400	6	0.10	170.0	2R5TPF680M6L	2500
		105	2.5	105		7.3	4.3	2.8		4400	7	0.10	170.0	2R5TPF680M7L	2500
		105	2.5	105		7.3	4.3	2.8		4400	10	0.10	170.0	2R5TPF680ML	2500
		105	2.5	105		7.3	4.3	3.8	D4	6100	5	0.10	170.0	ETPF680M5H	2000
		105	2.5	105	1000	7.3	4.3	3.8		6100	5	0.10	250.0	ETPF1000M5H	2000
		105	2.5	105		7.3	4.3	3.8		5600	6	0.10	250.0	ETPF1000M6H	2000
	4	105	4.0	105	330	7.3	4.3	2.8	D3L	4000	12	0.10	132.0	4TPF330ML	2500
		105	4.0	105	470	7.3	4.3	2.8		4400	10	0.10	188.0	4TPF470ML	2500
		105	4.0	105	680	7.3	4.3	3.8	D4	4400	10	0.10	272.0	4TPF680MAH	2000
	6.3	105	6.3	105	220	7.3	4.3	2.8	D3L	6100	5	0.10	138.6	6TPF220M5L	2500
		105	6.3	105		7.3	4.3	2.8		4600	9	0.10	138.6	6TPF220M9L	2500
		105	6.3	105		7.3	4.3	2.8		4000	12	0.10	138.6	6TPF220ML	2500
		105	6.3	105	330	7.3	4.3	2.8		3900	9	0.10	207.9	6TPF330M9L	2500
		105	6.3	105	470	7.3	4.3	3.8	D4	4400	10	0.10	296.1	6TPF470MAH	2000
	10	105	10.0	105	150	7.3	4.3	2.8	D3L	3600	15	0.10	150.0	10TPF150ML	2500

✻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”.