

## Surface Mount Type TPF series



**POSCAP**

### Features

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

### Specifications

Size code	D2E	D3L	D4
Category temp. range	-55 °C to +105 °C		
Rated volt. range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Category volt. range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Rated cap. 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	
	Dissipation factor(tan δ)	≤ 1.5 times of the initial limit	
	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))	
	Dissipation factor(tan δ)	≤ 1.5 times of the initial limit	
	Leakage current	≤ 3 times of the initial limit	

### Marking

Rated capacitance (μF)

Polarity marking(+)

Lot No.

Rated voltage code

R. voltage code		Unit : V.DC	
d	2.0	g	4.0
e	2.5	j	6.3

Unit : V.DC	
A	10

### Dimensions (not to scale)

Size code	Unit : mm				
	L±0.3	W±0.2	H	S±0.2	W1±0.1
D2E	7.3	4.3	1.8±0.1	1.3	2.4
D3L	7.3	4.3	2.8±0.2	1.3	2.4
D4	7.3	4.3	3.8±0.2	1.3	2.4

\* Externals of figure are the reference.

### Characteristics list

Rated volt. (V.DC)	Rated temp. (°C)	Category volt. (V.DC)	Category temp. (°C)	Rated cap. (μF)	Case size (mm)			Size code	Specifications				Standard		Floor life level	
					L	W	H		Ripple current <sup>*1</sup> (mA r.m.s.)	ESR <sup>*2</sup> (mΩ max.)	tan δ <sup>*3</sup>	LC <sup>*4</sup> (μA)	Part number	Min. packaging qty (pcs)	Reflow temp ≤260°C	Reflow temp ≤250°C
2.0	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	470	7.3	4.3	2.8	D3L	4400	7	0.10	82.5	2R5TPF330M7L	2500	3	2a
	105	2.5	105		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	1000	7.3	4.3	3.8	D4	6100	5	0.10	170.0	ETPF680M5H	2000		
	105	2.5	105		7.3	4.3	3.8		6100	5	0.10	250.0	ETPF1000M5H	2000		
105	2.5	105	7.3	4.3	3.8	D4	5600	6	0.10	250.0	ETPF1000M6H	2000				
4.0	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	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 catalog for "Reflow conditions", "Taping specifications" and "Floor life level".

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

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