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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Surface Mount Type

# POSCAP

Series : TPF



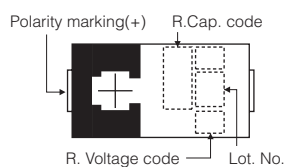
### Features

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

### Specifications

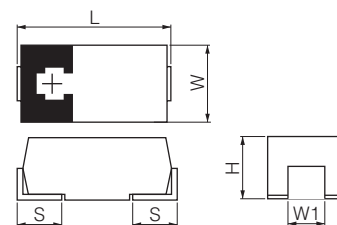
Size code	D2E	D3L	D4
Category temperature range	-55 °C to +105 °C		
Rated voltage range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Category voltage range	2.0 V.DC	2.5 V.DC to 10 V.DC	2.5 V.DC to 6.3 V.DC
Rated capacitance range	220 μF to 330 μF	150 μF to 680 μF	470 μF to 1000 μF
Capacitance tolerance	±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))	
	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)			Size code	Specifications				Standard		
						L	W	H		Ripple *1 current (mA r.m.s.)	ESR *2 (mΩ max.)	tan δ *3	LC *4 (μA)	Part number	Mn. Packaging Qty (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	
										4400	6	0.10	117.5	2R5TPF470M6L	2500	
			4400	7		0.10	117.5	2R5TPF470M7L		2500						
			4400	10		0.10	117.5	2R5TPF470ML		2500						
		105	2.5	105	470	7.3	4.3	2.8	D4	6100	5	0.10	117.5	ETPF470M5H	2000	
										4400	6	0.10	170.0	2R5TPF680M6L	2500	
		105	2.5	105	680	7.3	4.3	2.8	D3L	4400	7	0.10	170.0	2R5TPF680M7L	2500	
										4400	10	0.10	170.0	2R5TPF680ML	2500	
						7.3	4.3	3.8		D4	6100	5	0.10	170.0	ETPF680M5H	2000
											6100	5	0.10	250.0	ETPF1000M5H	2000
		105	2.5	105	1000	7.3	4.3	3.8	D4	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	
										4400	10	0.10	188.0	4TPF470ML	2500	
										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	
										4600	9	0.10	138.6	6TPF220M9L	2500	
										4000	12	0.10	138.6	6TPF220ML	2500	
7.3						4.3	2.8	D4		3900	9	0.10	207.9	6TPF330M9L	2500	
										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 catalog for "Reflow conditions" and "Taping specifications".