

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(+)

Rated voltage code

Lot No.

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 ^{*1} (mA r.m.s.)	ESR ^{*2} (mΩ max.)	tan δ ^{*3}	LC ^{*4} (μA)	Part number	Min. packaging q'ty (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	680	7.3	4.3	3.8	D4	6100	5	0.10	117.5	ETPF470M5H	2000			
	105	2.5	105		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	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		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.

Guidelines and precautions regarding the technical information and use of our products described in this online catalog.

- If you want to use our products described in this online catalog for applications requiring special qualities or reliability, or for applications where the failure or malfunction of the products may directly jeopardize human life or potentially cause personal injury (e.g. aircraft and aerospace equipment, traffic and transportation equipment, combustion equipment, medical equipment, accident prevention, anti-crime equipment, and/or safety equipment), it is necessary to verify whether the specifications of our products fit to such applications. Please ensure that you will ask and check with our inquiry desk as to whether the specifications of our products fit to such applications use before you use our products.
- The quality and performance of our products as described in this online catalog only apply to our products when used in isolation. Therefore, please ensure you evaluate and verify our products under the specific circumstances in which our products are assembled in your own products and in which our products will actually be used.
- If you use our products in equipment that requires a high degree of reliability, regardless of the application, it is recommended that you set up protection circuits and redundancy circuits in order to ensure safety of your equipment.
- The products and product specifications described in this online catalog are subject to change for improvement without prior notice. Therefore, please be sure to request and confirm the latest product specifications which explain the specifications of our products in detail, before you finalize the design of your applications, purchase, or use our products.
- The technical information in this online catalog provides examples of our products' typical operations and application circuits. We do not guarantee the non-infringement of third party's intellectual property rights and we do not grant any license, right, or interest in our intellectual property.
- If any of our products, product specifications and/or technical information in this online catalog is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially with regard to security and export control, shall be observed.

<Regarding the Certificate of Compliance with the EU RoHS Directive/REACH Regulations>

- The switchover date for compliance with the RoHS Directive/REACH Regulations varies depending on the part number or series of our products.
- When you use the inventory of our products for which it is unclear whether those products are compliant with the RoHS Directive/REACH Regulation, please select "Sales Inquiry" in the website inquiry form and contact us.

We do not take any responsibility for the use of our products outside the scope of the specifications, descriptions, guidelines and precautions described in this online catalog.
