

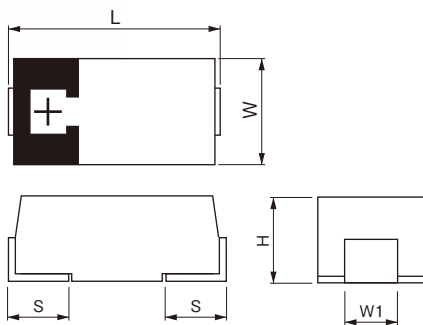
TPE series has low ESR and can aid in creating thinner and smaller products. This page focuses on the smaller packages within the series.



Specifications

Items	Condition	Specifications					
Rated voltage (V)	—	2.0	2.5	4.0	6.3	8.0	10
Surge voltage (V)	—	2.3	2.9	4.6	7.2	9.2	12
Category temperature range (°C)	—	-55 to +105					
Capacitance tolerance (%)	120Hz/20°C	M : ±20					
Rated capacitance range (μF)	120Hz/20°C	47 to 470					
Dissipation Factor (DF)	120Hz/20°C	Please see the attached characteristics list					
Leakage current	Rated voltage applied, after 5 minutes	Please see the attached characteristics list					
Equivalent series resistance (ESR)	100kHz/20°C	Please see the attached characteristics list					
Characteristics of impedance ratio at high temp. and low temp.	100kHz/+20°C	-55°C	Z/Z _{20°C}	0.6 to 2.0			
		+105°C	Z/Z _{20°C}	0.6 to 2.0			
Endurance	105°C, 1,000h rated voltage applied *Rated temp. 85°C products: 85°C, 1,000h, 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, 500h, No-applied voltage	ΔC/C	Within+50%, -20% (2R5TPE220MDGB(MAZB,MAPB,MAFB), 2R5TPE330MAZB,2TPE330MFB(MAFB,MADGB) ETPE330MA9GB,2TPE470MAJGB)				
		DF	≤ 1.5 times of the initial limit				
		LC	≤ 3 times of the initial limit				
		ΔC/C	Within+40%, -20% of the initial value (Except for the above model)				
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance,surge voltage applied *Rated temp 85°C products:85°C	ΔC/C	Within±5% of the initial value				
		DF	Within the initial limit				
		LC	≤ 3 times of the initial limit				

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

Size list

RV : Rated voltage

μF \ RV	2.0	2.5	4.0	6.3	8.0	10
47						B2
100			B2	B2	B2	
120				B2		
150			B2	B2		
220		B2	B2	B2		
330	B2	B2				
470	B2					

 **TPE series characteristics list**

Size code	Part number	Rated voltage (V)	Rated temperature (°C)	Rated capacitance (μF)	Category voltage (V)	Category temperature (°C)	DF (% max)	LC (μA) max/5min.	ESR (mΩmax) 100kHz/20°C	Maximum allowable ripple current (mArms) 100kHz*1	MSL	
											Reflow temp. ≤260°C	Reflow temp. ≤250°C
B2	10TPE47MAZB	10	85	47	8.0	105	8.0	47.0	35	1400	3	3
	8TPE100MAZB	8.0	85	100	6.3	105	8.0	80.0	35	1400	3	3
	6TPE220MAZB	6.3	85	220	5.0	105	10.0	138.6	35	1400	3	3
	6TPE220MAPB*2	6.3	85	220	5.0	105	10.0	138.6	25	1400	3	3
	6TPE150MAZB	6.3	85	150	5.0	105	8.0	94.5	35	1400	3	3
	6TPE150MAPB	6.3	85	150	5.0	105	8.0	94.5	25	1600	3	3
	6TPE120MAZB	6.3	85	120	5.0	105	8.0	75.6	35	1400	3	3
	6TPE100MPB	6.3	105	100	6.3	105	8.0	63.0	25	1600	3	3
	6TPE100MAZB	6.3	85	100	5.0	105	8.0	63.0	35	1400	3	3
	4TPE220MAZB	4.0	85	220	3.2	105	8.0	88.0	35	1400	3	3
	4TPE150MAZB	4.0	85	150	3.2	105	8.0	60.0	35	1400	3	3
	4TPE150MAUB	4.0	85	150	3.2	105	8.0	60.0	30	1500	3	3
	4TPE100MZB	4.0	105	100	4.0	105	8.0	40.0	35	1400	3	3
	2R5TPE330MAZB	2.5	85	330	2.0	105	8.0	82.5	35	1400	3	3
	ETPE330MA9GB*2	2.5	85	330	2.0	105	8.0	165.0	9/300kHz	3200	3	3
	2R5TPE220MZB	2.5	105	220	2.5	105	8.0	55.0	35	1400	3	3
	2R5TPE220MLB	2.5	105	220	2.5	105	8.0	55.0	21	1700	3	3
	2R5TPE220MFGB	2.5	105	220	2.5	105	8.0	110.0	15/300kHz	1800	3	3
	2R5TPE220MDGB	2.5	105	220	2.5	105	8.0	110.0	13/300kHz	2000	3	3
	2R5TPE220MAZB	2.5	85	220	2.0	105	8.0	55.0	35	1400	3	3
	2R5TPE220MAPB	2.5	85	220	2.0	105	8.0	55.0	25	1600	3	3
	2R5TPE220MAFB	2.5	85	220	2.0	105	8.0	110.0	15	2000	3	3
	2TPE470MAJGB	2.0	85	470	1.8	105	10.0	188.0	11/300kHz	2300	3	3
	2TPE330MFB	2.0	105	330	2.0	105	8.0	132.0	15	2000	3	3
	2TPE330MAFB	2.0	85	330	1.8	105	8.0	132.0	15	2000	3	3
	2TPE330MADGB	2.0	85	330	1.8	105	8.0	132.0	13/300kHz	2000	3	3

*1 100k to 500kHz,45°C *2 Under development

Selection guide

- Series system diagram
- Image of case size
- Products list
- Packing specifications (SMD type)
- Packing specifications (Radial lead type)

Technical data

- Recommended soldering condition
- Fundamental structure
- Characteristics
- Reliability

Surface mount type

- SVPF
- SVPE
- SVPS
- SVPD
- SVPC
- SVPB
- SVPA
- SVQP
- SVP

Radial lead type

- SEPF
- SEPC
- SEQP
- SEP

Catalog Deletion and EOL series

POSCAPPOSCAP
Line-upGuidelines and
precautions for use

Selection guide

- Series system diagram
- Image of case size
- Products list
- Explanation of part numbers
- Packing specifications

Technical data

- Marking
- Recommended land pattern dimension
- Recommended soldering condition
- Fundamental structure
- Characteristics
- Reliability

Surface mount type

- TPU
- TPH
- TPG
- TPSF
- TPE**
- TPB/TPC
- TPL·TPLF
- TPF
- TA
- TV
- TH
- TQC

Catalog Deletion and EOL models

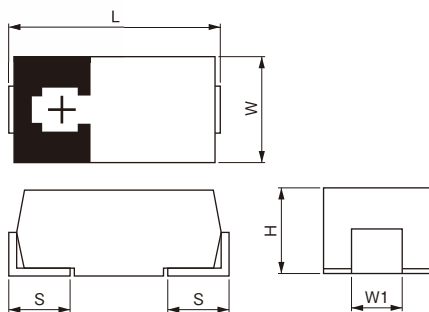
TPE series has low ESR and can aid in creating thinner and smaller products.



Specifications

Items	Condition	Specifications			
		2.5	4.0	6.3	10
Rated voltage (V)	—	2.5	4.0	6.3	10
Surge voltage (V)	—	2.9	4.6	7.2	12
Category temperature range (°C)	—	-55 to +105			
Capacitance tolerance (%)	120Hz/20°C	M: ±20			
Rated capacitance range (μF)	120Hz/20°C	68 to 1,500			
Dissipation Factor (DF)	120Hz/20°C	Please see the attached characteristics list			
Leakage current	Rated voltage applied, after 5 minutes	Please see the attached characteristics list			
Equivalent series resistance (ESR)	100kHz/20°C	Please see the attached characteristics list			
Characteristics of impedance ratio at high temp. and low temp.	100kHz/+20°C	-55°C	Z/Z _{20°C}	0.6 to 2.0	
		+105°C	Z/Z _{20°C}	0.6 to 2.0	
Endurance	105°C, 2,000h, rated voltage applied ※Rated temp. 85°C products: 85°C, 1,000h, rated voltage applied 6TPE330MAP, 6TPE470MAZU; 85°C, 2,000h	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, 500h, No-applied voltage	ΔC/C		Within +50%, -20% of the initial value (2R5TPE470M (I.F.C.9.7), 2R5TPE330M (I.F.C.9.7), 2R5TPE220M (I.F.C.9.7), 2R5TPE1000M (I.F.), 2R5TPE1500M (F.C.))	
		DF		Within +40%, -20% of the initial value (Except for the above model)	
		DF		≤ 1.5 times of the initial limit	
		LC		≤ 3 times of the initial limit	
Surge	105°C, 1,000 cycles, 1kΩ discharge resistance, surge voltage applied ※Rated temp. 85°C products: 85°C	ΔC/C		Within ±5% of the initial value	
		DF		Within the initial limit	
		LC		≤ 3 times of the initial limit	

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

Size list

RV : Rated voltage

RV	2.5	4.0	6.3	10.0
68				D2E
100			D2E	
150		D2E	D2E	
220	D2E	D2E	D2E	D3L
330	D2E	D2E	D2E, D3L, D4	D4
470	D2E	D3L	D4, D15E	
680	D3L		D4	
1,000	D4			
1,500	D4			

TPE series characteristics list

Size code	Part number	Rated voltage (V)	Rated temperature (°C)	Rated capacitance (μF)	Category voltage (V)	Category temperature (°C)	DF (% max)	LC (μA) max/5min.	ESR (mΩmax) 100kHz/20°C	Maximum allowable ripple current (mA rms) 100kHz*1	MSL	
											Reflow temp. ≤ 260°C	Reflow temp. ≤ 250°C
D15E	6TPE470MAZU	6.3	85	470	5.0	105	10	296.1	35	1700	3	2a
	10TPE68M	10	105	68	10	105	10	68.0	25	2400	3	2a
	6TPE330MAP	6.3	85	330	5.0	105	10	207.9	25	2400	3	2a
	6TPE220MAP	6.3	85	220	5.0	105	10	138.6	25	2400	3	2a
	6TPE220M	6.3	105	220	6.3	105	10	138.6	25	2400	3	2a
	6TPE220MI	6.3	105	220	6.3	105	10	138.6	18	2800	3	2a
	6TPE150M	6.3	105	150	6.3	105	10	94.5	25	2400	3	2a
	6TPE150MI	6.3	105	150	6.3	105	10	94.5	18	2800	3	2a
	6TPE150MF	6.3	105	150	6.3	105	10	94.5	15	3100	3	2a
	6TPE100M	6.3	105	100	6.3	105	10	63.0	25	2400	3	2a
	6TPE100MI	6.3	105	100	6.3	105	10	63.0	18	2800	3	2a
	4TPE330M	4.0	105	330	4.0	105	10	132.0	25	2400	3	2a
	4TPE330MI	4.0	105	330	4.0	105	10	132.0	18	2800	3	2a
	4TPE220M	4.0	105	220	4.0	105	10	88.0	25	2400	3	2a
	4TPE220MI	4.0	105	220	4.0	105	10	88.0	18	2800	3	2a
4TPE220MF	4.0	105	220	4.0	105	10	88.0	15	3100	3	2a	
D2E	4TPE150MI	4.0	105	150	4.0	105	10	60.0	18	2800	3	2a
	2R5TPE470MI	2.5	105	470	2.5	105	10	117.5	18	2800	3	2a
	2R5TPE470MF	2.5	105	470	2.5	105	10	117.5	15	3100	3	2a
	2R5TPE470MC	2.5	105	470	2.5	105	10	117.5	12	3500	3	2a
	2R5TPE470M9	2.5	105	470	2.5	105	10	117.5	9	3900	3	2a
	2R5TPE470M7	2.5	105	470	2.5	105	10	117.5	7	4400	3	2a
	2R5TPE330M	2.5	105	330	2.5	105	10	82.5	25	2400	3	2a
	2R5TPE330MI	2.5	105	330	2.5	105	10	82.5	18	2800	3	2a
	2R5TPE330MF	2.5	105	330	2.5	105	10	82.5	15	3100	3	2a
	2R5TPE330MC	2.5	105	330	2.5	105	10	82.5	12	3500	3	2a
	2R5TPE330M9	2.5	105	330	2.5	105	10	82.5	9	3900	3	2a
	2R5TPE330M7	2.5	105	330	2.5	105	10	82.5	7	4400	3	2a
	2R5TPE220M	2.5	105	220	2.5	105	10	55.0	25	2400	3	2a
	2R5TPE220MI	2.5	105	220	2.5	105	10	55.0	18	2800	3	2a
	2R5TPE220MF	2.5	105	220	2.5	105	10	55.0	15	3100	3	2a
2R5TPE220M9	2.5	105	220	2.5	105	10	55.0	9	3900	3	2a	
D3L	10TPE220ML	10	105	220	10	105	10	220.0	25	2400	—	2a
	10TPE220MIL	10	105	220	10	105	10	220.0	18	2800	—	2a
	6TPE330MAL	6.3	85	330	5.0	105	10	207.9	25	2400	3	2a
	6TPE330MA9EL	6.3	85	330	5.0	105	10	207.9	9/500k	3900	3	2a
	6TPE330ML	6.3	105	330	6.3	105	10	207.9	25	2400	3	2a
	6TPE330MIL	6.3	105	330	6.3	105	10	207.9	18	2800	3	2a
	6TPE330MFL	6.3	105	330	6.3	105	10	207.9	15	3100	3	2a
	4TPE470MAL	4.0	105	470	4.0	105	10	188.0	10	4400	3	2a
	4TPE470ML	4.0	105	470	4.0	105	10	188.0	25	2400	3	2a
	4TPE470MIL	4.0	105	470	4.0	105	10	188.0	18	2800	3	2a
	4TPE470MFL	4.0	105	470	4.0	105	10	188.0	15	3100	3	2a
	4TPE470MCL	4.0	105	470	4.0	105	10	188.0	12	3500	3	2a
	2R5TPE680MFL	2.5	105	680	2.5	105	10	170.0	15	3100	3	2a
	2R5TPE680MCL	2.5	105	680	2.5	105	10	170.0	12	3500	3	2a
	D4	10TPE330M	10	105	330	10	105	10	330.0	25	3000	—
6TPE680M		6.3	105	680	6.3	105	15	428.4	25	3000	3	2a
6TPE680MI		6.3	105	680	6.3	105	15	428.4	18	3500	3	2a
6TPE470M		6.3	105	470	6.3	105	15	296.1	25	3000	3	2a
6TPE470MI		6.3	105	470	6.3	105	15	296.1	18	3500	3	2a
6TPE330MAA		6.3	85	330	5.0	105	10	207.9	10	4400	3	2a
2R5TPE1000MF		2.5	105	1000	2.5	105	15	250.0	15	3900	3	2a
2R5TPE1500MF		2.5	105	1500	2.5	105	15	375.0	15	3900	—	2a
2R5TPE1500MC		2.5	105	1500	2.5	105	15	375.0	12	4400	—	2a

Selection guide	Series system diagram
	Image of case size
	Products list
Technical data	Packing specifications (SMD type)
	Fundamental structure
	Characteristics
Surface mount type	Reliability
	SVPF
	SVPE
Radial lead type	SVPS
	SVPD
	SVPC
Surface mount type	SVPB
	SVPA
	SVQP
Radial lead type	SVQ
	SEPF
	SEPC
Surface mount type	SEQP
	SEP
	Catalog Deletion and EOL series
Selection guide	POSCAP
	POSCAP Line-up
	Guidelines and precautions for use
Technical data	Series system diagram
	Image of case size
	Products list
Surface mount type	Explanation of part numbers
	Packing specifications
	Marking
Radial lead type	Recommended land pattern dimension
	Recommended soldering condition
	Fundamental structure
Surface mount type	Characteristics
	Reliability
	TPU
Surface mount type	TPH
	TPG
	TPSF
Surface mount type	TPE
	TPB/TPC
	TPL-TPLF
Surface mount type	TPF
	TA
	TV
Surface mount type	TH
	TQC
	Catalog Deletion and EOL models



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331