Update

RoHS compliance Low ESR

Large capacitance

TPF series achieves low ESR and high capacitance in the standard form.







Specifications

Guidelines and precautions for use Series system diagram

Image of case size

Products list

Fundamental

Characteristics Reliability SVPF SVPE

SVPS SVPD

SVPB SVPA SVQP SVP

SEPF SEPC

SEQP

SEP

Catalog Deletion and EOL series

POSCAP

Image of case size Products list Explanation of part numbers

Packing specifications Marking

Fundamental structure Characteristics Reliability TPU TPH TPG

TPSF

Technical data

guide

Selection

data

Technical

Surface mount type

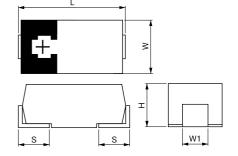
type

lead .

Radial I

Items	Condition	Specifications							
Rated voltage (V)	_	2.0	2.5	4.0	6.3	10			
Surge voltage (V)	_			2.3	2.9	4.6	7.2	12	
Category temperature range (°C)	_			-55 to +105					
Capacitance tolerance (%)	120Hz/20°C	3		M:±20					
Rated capacitance range (μF)	120Hz/20°C	3			•	150 to 1000)		
Dissipation Factor (DF)	120Hz/20°C	2		Plea	ase see the	attached cha	aracteristics	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.	100kHz/+20℃	-55℃	Z/Z20°C	0.6 to 2.0					
and low temp.	TOURHZ/+200	+105℃	Z/Z20°C	0.6 to 2.0					
	1050 0000	△(C/C	Within±20% of the initial value					
Endurance	105°C, 2,000h, rated voltage applied	DF		≤ 1.5 times of the initial limit					
		L	.C		With	in the initial	limit		
		△C/C		Within+50%,-20% of the initial value(2TPF220M6,2TPF330M6,ETPF1000M6H(5H))					
Damp heat (Steady State)	60°C, 90 to 95%RH, 500h,			Within+40%, -20% of the initial value (Except for the above model)					
Damp fleat (Steady State)	No-applied voltage)F	≤ 1.5 times of the initial limit					
		L	.C	≤ 3 times of the initial limit					
	105°C, 1,000 cycles,	△(C/C	Within±5% of the initial value					
Surge	1kΩ discharge resistance,)F	Within the initial limit					
	surge voltage applied	L	.C		≤3 tim	es of the init	ial limit		

Guidelines and precautions for use Series system diagram Dimensions Selection guide



(unit: mm)								
±0.3	W ±0.2	H ±0.2%1	S ±0.2	W1 ±0.1				

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	

%1 ±0.1:D2E

Size list

SIZE IIST RV : Rated voltag									
RV μF	2.0	2.5	4.0	6.3	10.0				
150					D3L				
220	D2E			D3L					
330	D2E	D3L	D3L	D3L					
470		D4,D3L	D3L	D4					
680		D4,D3L	D4						
1,000		D4							

Surface mount type TPE TPB/TPC TPL·TPLF **TPF** TA TV TH TQC

Catalog Deletion and EOL models

TPF series characteristics list

Size		Rated	Rated	Rated	Category	Category	DF	LC	ESR	Maximum allowable		
code	Part number	voltage (V)	temperature (°C)	capacitance (µF)	voltage (V)	temperature (°C)	(% max)	(μA) max/5min.	(mΩmax) 100kHz/20°C	ripple current (mArms) 100kHz*1	Reflow temp. ≤ 260°C	Reflow temp. ≤ 250°C
D2E	2TPF330M6	2.0	105	330	2.0	105	10.0	132.0	6	4400	_	2a
	2TPF220M6	2.0	105	220	2.0	105	10.0	88.0	6	4400	_	2a
	10TPF150ML	10	105	150	10	105	10.0	150.0	15	3600	_	2a
	6TPF330M9L	6.3	105	330	6.3	105	10.0	207.9	9	3900	3	2a
	6TPF220ML	6.3	105	220	6.3	105	10.0	138.6	12	4000	3	2a
	6TPF220M9L	6.3	105	220	6.3	105	10.0	138.6	9	3900	3	2a
	6TPF220M5L	6.3	105	220	6.3	105	10.0	138.6	5	4000	3	2a
	4TPF470ML	4.0	105	470	4.0	105	10.0	188.0	10	4400	3	2a
	4TPF470M5EL*2	4.0	105	470	4.0	105	10.0	188.0	5/500kHz	4400	3	2a
D3L	4TPF330ML	4.0	105	330	4.0	105	10.0	132.0	12	4000	3	2a
	2R5TPF680ML	2.5	105	680	2.5	105	10.0	170.0	10	4400	3	2a
	2R5TPF680M7L	2.5	105	680	2.5	105	10.0	170.0	7	4400	3	2a
	2R5TPF680M6L	2.5	105	680	2.5	105	10.0	170.0	6	4400	3	2a
	2R5TPF470ML	2.5	105	470	2.5	105	10.0	117.5	10	4400	3	2a
	2R5TPF470M7L	2.5	105	470	2.5	105	10.0	117.5	7	4400	3	2a
	2R5TPF470M6L	2.5	105	470	2.5	105	10.0	117.5	6	4400	3	2a
	2R5TPF330M7L	2.5	105	330	2.5	105	10.0	82.5	7	4400	3	2a
	6TPF470MAH	6.3	105	470	6.3	105	10.0	296.1	10	4400	3	2a
	4TPF680MAH	4.0	105	680	4.0	105	10.0	272.0	10	4400	3	2a
D4	ETPF1000M6H	2.5	105	1000	2.5	105	10.0	250.0	6	5600	3	2a
	ETPF1000M5H	2.5	105	1000	2.5	105	10.0	250.0	5	6100	3	2a
	ETPF680M5H	2.5	105	680	2.5	105	10.0	170.0	5	6100	3	2a
	ETPF470M5H	2.5	105	470	2.5	105	10.0	117.5	5	6100	3	2a

%1 100k to 500kHz,45℃ %2 Under development

Guidelines and precautions for use Selection guide Image of case size Products list Technical data Fundamental structure Characteristics Reliability SVPF SVPE Surface mount type SVPS SVPD SVPC SVPB SVPA SVQP SVP type SEPF SEPC Radial lead SEQP Catalog Deletion and EOL series POSCAP POSCAP Line-up Guidelines and precautions for use Series system diagram Selection guide Image of case size Products list Explanation of part numbers Packing specifications Marking Technical data Fundamental structure Characteristics Reliability TPU

Catalog Deletion and EOL models

Surface mount type

TPH TPG

TPSF

TQC

TPB/TPC TPL·TPLF TPF TA TV

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Panasonic:

ETPF470M5H 2R5TPF330M7L 4TPF470ML 2R5TPF470ML 2R5TPF680ML 6TPF220M9L 2R5TPF470M7L 10TPF150ML 6TPF330M5EL ETPF1000M5H 4TPF330ML 6TPF220M5L 2R5TPF680M7L 2TPF330M6 ETPF680M5H 2R5TPF680M6L 2R5TPF470M6L 6TPF470MAH 2TPF220M6 ETPF1000M6H 6TPF330M9L 6TPF220ML 4TPF680MAH