Radial Lead Type

Series : **TP** Type : **A**

⚠ **This Series is no longer available for purchase in the country of Japan.**

Features

- Endurance : 125 °C 2000 h to 5000 h or 135 °C 1000 h to 2000 h
- Smaller than series TA
- High ripple current (at high frequency) : 20 to 40% higher than TA series
- RoHS compliant

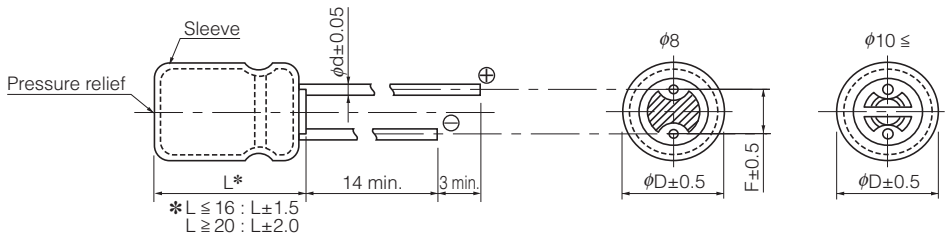
Specifications

Category temperature range	–40 °C to + 135 °C			
Rated voltage range	25 V .DC to 35 V .DC			
Capacitance range	100 µF to 5100 µF			
Capacitance tolerance	±20 % (120 Hz/+20 °C)			
Leakage current	I ≤ 0.01 CV After 2 minutes			
Dissipation factor (tan δ)	V.DC	25	35	(120Hz / +20 °C)
	tan δ	0.14	0.12	
	For capacitance value ≧ 1000 µF , add 0.02 per every 1000 µF.			
Endurance 1	After following life test with DC voltage and +125 °C±2 °C ripple current value applied. (The sum of DC and ripple peak voltage shall not exceed the rated working voltage) when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. Duration ϕ8 : 2000 hours, ϕ10 : 3000 hours, ϕ12.5 : 4000 hours, ϕ16 to ϕ18 : 5000 hours			
	Capacitance change	Within ±30 % of the initial value		
	tan δ	≦ 300 % of the initial limit		
	DC leakage current	Within the initial limit		
Endurance 2	After following life test with DC voltage and +135 °C±2 °C ripple current value applied. (The sum of DC and ripple peak voltage shall not exceed the rated working voltage) when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified below. Duration ϕ8 : 1000 hours, ϕ10 to ϕ18 : 2000 hours			
	Capacitance change	Within ±30 % of the initial value		
	tan δ	≦ 300 % of the initial limit		
	DC leakage current	Within the initial limit		
Shelf Life 1	After storage for 1000 hours at +125 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)			
Shelf Life 2	After storage for 1000 hours at +135 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in Endurance. (With voltage treatment)			
AEC-Q200	AEC-Q200 compliant			

Frequency correction factor for ripple current

Rated voltage (V.DC)	Capacitance (µF)	Frequency (Hz)				
		60	120	1 k	10 k	100 k
25 to 35	to 330	0.55	0.65	0.85	0.90	1.00
	390 to 1000	0.70	0.75	0.90	0.95	1.00
	1200 to	0.75	0.80	0.90	0.95	1.00

Dimensions



(Unit : mm)

ϕD	8	10	12.5	16	18
ϕd	0.6	0.6	0.6	0.8	0.8
F	3.5	5.0	5.0	7.5	7.5

Characteristics list

Rated voltage (V.DC)	Cap. (±20 %) (μF)	Case size (mm)		Specification						Lead length (mm)			Part No. ✻ : Substandard (E24series numbers)	Min. Packaging Q'ty	
											Lead space				
		φD	L	Ripple current (100 kHz) (+125 °C) (mA r.m.s.)	Ripple current (100 kHz) (+135 °C) (mA r.m.s.)	ESR (100 kHz) (+20 °C) (Ω)	tan δ (120 Hz) (+20 °C)	125 °C Enduance (hours)	135 °C Enduance (hours)	Lead dia. φd	Straight	Taping ✻B		Straight leads (pcs)	Taping (pcs)
25	220	10	12.5	580	500	0.190	0.14	3000	2000	0.6	5.0	5.0	EEUTP1E221( )	200	500
	330	10	16	1100	945	0.130	0.14	3000	2000	0.6	5.0	5.0	EEUTP1E331( )	200	500
	470	8	20	1060	760	0.067	0.14	2000	1000	0.6	3.5	5.0	EEUTP1E471L( )	200	1000
		10	16	1100	945	0.130	0.14	3000	2000	0.6	5.0	5.0	EEUTP1E471( )	200	500
	510	10	16	1100	945	0.130	0.14	3000	2000	0.6	5.0	5.0	EEUTP1E511( )✻	200	500
	820	10	20	1540	1100	0.052	0.14	3000	2000	0.6	5.0	5.0	EEUTP1E821( )	200	500
	1000	12.5	20	1860	1490	0.038	0.14	4000	2000	0.6	5.0	5.0	EEUTP1E102( )	200	500
	1200	12.5	20	1860	1490	0.038	0.14	4000	2000	0.6	5.0	5.0	EEUTP1E122( )	200	500
	1800	12.5	25	2180	1750	0.030	0.14	4000	2000	0.6	5.0	5.0	EEUTP1E182( )	200	500
		16	20	2380	1985	0.029	0.14	5000	2000	0.8	7.5	7.5	EEUTP1E182S( )	100	250
	2000	16	20	2380	1985	0.029	0.16	5000	2000	0.8	7.5	7.5	EEUTP1E202S( )✻	100	250
	2200	16	25	2760	2300	0.022	0.16	5000	2000	0.8	7.5	7.5	EEUTP1E222( )	100	250
		18	20	2700	2250	0.028	0.16	5000	2000	0.8	7.5	7.5	EEUTP1E222S( )	100	250
	2700	16	25	2760	2300	0.022	0.16	5000	2000	0.8	7.5	7.5	EEUTP1E272( )	100	250
		18	20	2700	2250	0.028	0.16	5000	2000	0.8	7.5	7.5	EEUTP1E272S( )	100	250
	3300	16	31.5	3250	2710	0.018	0.18	5000	2000	0.8	7.5		EEUTP1E332	100	
		18	25	2960	2470	0.020	0.18	5000	2000	0.8	7.5	7.5	EEUTP1E332S( )	100	250
	3900	16	31.5	3250	2710	0.018	0.18	5000	2000	0.8	7.5		EEUTP1E392	100	
		18	25	2960	2470	0.020	0.18	5000	2000	0.8	7.5	7.5	EEUTP1E392S( )	100	250
	4700	18	31.5	3480	2900	0.016	0.20	5000	2000	0.8	7.5		EEUTP1E472	50	
	5100	18	31.5	3480	2900	0.016	0.22	5000	2000	0.8	7.5		EEUTP1E512✻	50	
35	100	10	12.5	580	500	0.190	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V101( )	200	500
	120	10	12.5	580	500	0.190	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V121( )	200	500
	220	8	20	1060	760	0.067	0.12	2000	1000	0.6	3.5	5.0	EEUTP1V221L( )	200	1000
		10	16	1100	945	0.130	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V221( )	200	500
	270	8	20	1060	760	0.067	0.12	2000	1000	0.6	3.5	5.0	EEUTP1V271L( )	200	1000
		10	16	1100	945	0.130	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V271( )	200	500
	330	10	20	1540	1100	0.052	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V331( )	200	500
	390	10	20	1540	1100	0.052	0.12	3000	2000	0.6	5.0	5.0	EEUTP1V391( )	200	500
	470	12.5	20	1860	1490	0.038	0.12	4000	2000	0.6	5.0	5.0	EEUTP1V471( )	200	500
	560	12.5	20	1860	1490	0.038	0.12	4000	2000	0.6	5.0	5.0	EEUTP1V561( )	200	500
	620	12.5	20	1860	1490	0.038	0.12	4000	2000	0.6	5.0	5.0	EEUTP1V621( )✻	200	500
	820	12.5	25	2180	1750	0.030	0.12	4000	2000	0.6	5.0	5.0	EEUTP1V821( )	200	500
	1000	16	20	2380	1985	0.029	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V102( )	100	250
	1200	16	20	2380	1985	0.029	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V122( )	100	250
	1500	16	25	2760	2300	0.022	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V152( )	100	250
		18	20	2700	2250	0.028	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V152S( )	100	250
	1600	16	25	2760	2300	0.022	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V162( )✻	100	250
	1800	16	31.5	3250	2710	0.018	0.12	5000	2000	0.8	7.5		EEUTP1V182	100	
		18	25	2960	2470	0.020	0.12	5000	2000	0.8	7.5	7.5	EEUTP1V182S( )	100	250
	2000	16	31.5	3250	2710	0.018	0.14	5000	2000	0.8	7.5		EEUTP1V202✻	100	
		18	25	2960	2470	0.020	0.14	5000	2000	0.8	7.5	7.5	EEUTP1V202S( )✻	100	250
	2200	18	31.5	3480	2900	0.016	0.14	5000	2000	0.8	7.5		EEUTP1V222	50	
	2700	18	31.5	3480	2900	0.016	0.14	5000	2000	0.8	7.5		EEUTP1V272	50	

· When requesting taped product, please put the letter "B" between the "( )". Lead wire pitch ✻B=5 mm, 7.5 mm.
· Please refer to the page of "Taping dimensions".

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