

Radial Lead Type

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



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
	tan δ	0.14	0.12
(120Hz / +20 °C)			
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	
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	
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)		
	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)

	8	10	12.5	16	18
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 Qty	
		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 Endurance (hours)	135 °C Endurance (hours)	Lead dia. φd	Lead space 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".