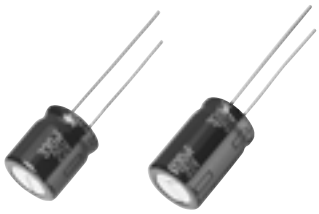
Radial Lead Type

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
- AEC-Q200 qualified*
- RoHS directive compliant

■ Specifications

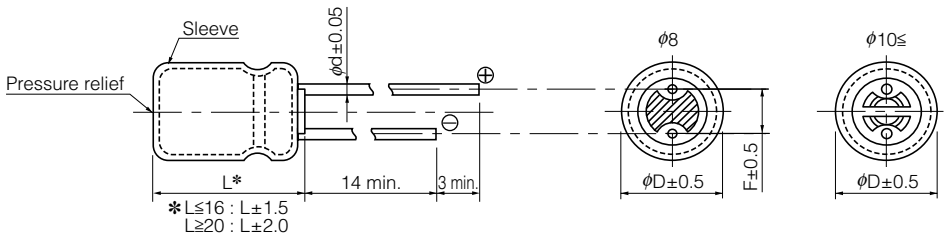
Category Temp. Range	−40 °C to + 135 °C			
Rated W.V. Range	25 V .DC to 35 V .DC			
Nominal Cap. Range	100 µF to 5100 µF			
Capacitance Tolerance	±20 % (120 Hz/+20 °C)			
DC Leakage Current	I ≦ 0.01 CV After 2 minutes			
tan δ	W.V.(V)	25	35	(120Hz / +20 °C)
	tan δ	0.14	0.12	
	For capacitance value ≧ 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	±30% of initial measured value		
	tan δ	≦ 300 % of initial specified value		
	DC leakage current	≦ initial specified value		
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	±30% of initial measured value		
	tan δ	≦ 300 % of initial specified value		
	DC leakage current	≦ initial specified value		
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)			

■ Frequency correction factor for ripple current

W.V. (V.DC)	Cap. (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 in mm (not to scale)

(Unit : mm)



Body Dia. ϕD	8	10	12.5	16	18
Lead Dia. ϕd	0.6	0.6	0.6	0.8	0.8
Lead space F	3.5	5.0	5.0	7.5	7.5

* This product qualify for AEC-Q200, but it has some deviations.

02 May. 2014

■ Standard Products

W.V.	Cap. (±20 %)	Case size		Specification						Lead Length			Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple Current (100 kHz) (+125 °C)	Ripple Current (100 kHz) (+135 °C)	E.S.R (100 kHz) (+20 °C)	tan δ (120 kHz) (+20 °C)	125 °C Endurance	135 °C Endurance	Lead Dia.	Lead Space Straight	Lead Space Taping ✻B	✻ : Substandard (E24series numbers)	Straight Leads	Taping
(V)	(μF)	(mm)	(mm)	(mA r.m.s.)	(mA r.m.s.)	(Ω)		(hours)	(hours)	(mm)	(mm)	(mm)		(pcs)	(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”.