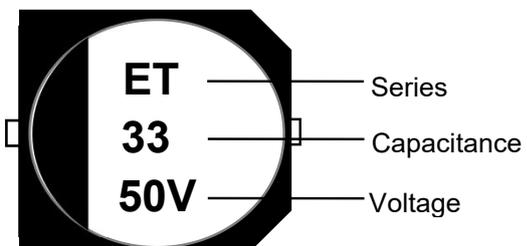
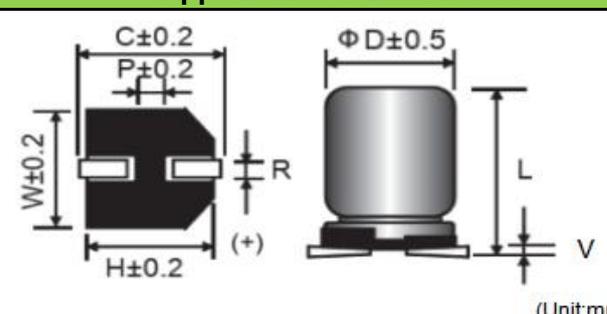


# ET Series

## Feature

- ◆ AEC-Q200 compliant.
- ◆ Guaranteed duration: 2000~5000 hours at 125°C.
- ◆ Designed for automotive modules and high-temperature applications.
- ◆ Long life.
- ◆ RoHS compliant.

Items		Characteristics			
Temperature Range	-40°C ~ +125°C				
Rated Voltage Range	16V ~ 50V				
Capacitance Range	10 ~ 3900 μF				
Capacitance Tolerance	±20% (20°C, 120Hz)				
Leakage Current	I ≤ 0.01CV or 3μA, Take the larger of the two values (after applying the rated working voltage for 2 minutes) CR: nominal capacitance (μF) UR: rated voltage (V)				
Dissipation Factor (tg δ) (20°C, 120Hz)	UR (V)	16	25	35	50
	tg δ	0.20	0.20	0.14	0.14
Endurance	At 125°C, capacitors shall be subjected to the rated working voltage for the following durations: ΦD ≤ 10: 2000 hours; ΦD = 12.5: 3000 hours; ΦD > 12.5: 5000 hours. After recovery to 20°C, the capacitors shall meet the following requirements.				
	Capacitance Change	within ±30% of the initial value			
	Dissipation Factor	≤ 300% of the initial ralted value			
	Leakage Current	≤ initial ralted value			
High temperature	After storing the capacitor at 125°C without voltage application for 1000 hours, the capacitor shall meet the above endurance requirements after being recovered to 20°C.				
Low Temperature	UR (V)	16	25	35	50
	Z(-25°C)/Z(20°C)	5	2	2	2
	Z(-40°C)/Z(20°C)	8	4	3	3
Resistance to soldering heat	Place the capacitor on a hot plate at 250°C and hold for 30 seconds. Then remove the capacitor from the hot plate and allow it to recover at room temperature. The capacitor shall meet the requirements listed on the right.			Capacitance Change	within ±10% of the initial value
				Dissipation Factor (tg δ)	≤ initial ralted value
				Leakage Current	≤ initial ralted value
Coefficient of Frequency for Rated Ripple Current					
Frequency (Hz)	100 ≤ F < 1K	1K ≤ F < 10K	10K ≤ F < 100K	100K ≤ F	
coefficient	0.60	0.85	0.93	1.00	

Mark	Appearance & Dimension
 <p>ET — Series 33 — Capacitance 50V — Voltage</p>	 <p>(Unit:mm)</p>

Dimensions	ΦD	L	W	H	C	R	P	Vmax
6.3x6	6.3	6.0±0.3	6.6	6.6	7.2	0.5~0.8	2.1	0.3
6.3x7.7	6.3	7.7±0.3	6.6	6.6	7.2	0.5~0.8	2.1	0.3
8x10	8	10.0±0.5	8.3	8.3	9.0	0.7~1.1	3.2	0.3
10x10	10	10.0±0.5	10.3	10.3	11.0	0.7~1.3	4.5	0.3
12.5x13.5	12.5	13.5±0.5	13.0	13.0	13.7	1.1~1.4	4.5	0.4
16x16.5	16	16.5±0.5	17.0	17.0	18.0	1.4~1.8	6.4	0.4
18x16.5	18	16.5±1.0	19.0	19.0	20.0	1.4~1.8	6.4	0.4
18x21.5	18	21.5±1.0	19.0	19.0	20.0	1.4~1.8	6.4	0.4

## ET Characteristics Table

Rated Voltage (V.DC)	Capacitance ( $\pm 20\%$ ) ( $\mu\text{F}$ )	Dimensions(mm)		Electrical Characteristics			Minimum Packaging Quantity (PCS)
		$\Phi\text{D}$	L	Rated Ripple Current (100KHz/125°C) (mA r.m.s)	$\tan \delta$ (120Hz/20°C)	Impedance (100KHz) (20°C) ( $\Omega$ )	
16	47	6.3	6	110	0.20	1.600	1000
	100	6.3	7.7	200	0.20	0.450	1000
	330	8	10	300	0.20	0.180	500
	390	8	10	300	0.20	0.180	500
	470	10	10	500	0.20	0.110	500
	680	10	10	500	0.20	0.110	500
	1000	12.5	13.5	1200	0.20	0.080	250
	1500	12.5	13.5	1200	0.20	0.080	250
	2200	16	16.5	1800	0.20	0.050	200
	3900	18	21.5	2200	0.20	0.040	100
25	33	6.3	6	110	0.20	1.600	1000
	100	6.3	7.7	200	0.20	0.450	1000
	220	8	10	300	0.20	0.180	500
	270	8	10	300	0.20	0.180	500
	330	10	10	500	0.20	0.110	500
	470	10	10	500	0.20	0.110	500
	680	12.5	13.5	1200	0.20	0.080	250
	1000	16	16.5	1800	0.20	0.050	200
	1500	16	16.5	1800	0.20	0.050	200
	2200	18	21.5	2000	0.20	0.045	100
35	22	6.3	6	110	0.14	1.600	1000
	33	6.3	6	110	0.14	1.600	1000
	33	6.3	7.7	200	0.14	0.450	1000
	47	6.3	7.7	200	0.14	0.450	1000
	100	8	10	300	0.14	0.180	500
	220	10	10	500	0.14	0.110	500
	300	10	10	500	0.14	0.110	500
	330	12.5	13.5	1200	0.14	0.080	250
	470	12.5	13.5	1200	0.14	0.080	250
	680	16	16.5	1800	0.14	0.050	200
	1000	16	16.5	1800	0.14	0.050	200
	1500	18	16.5	2000	0.14	0.045	150
2200	18	21.5	2200	0.14	0.040	100	
50	10	6.3	6	70	0.14	2.000	1000
	47	8	10	250	0.14	0.450	500
	100	10	10	350	0.14	0.300	500
	220	12.5	13.5	700	0.14	0.150	250
	470	16	16.5	1000	0.14	0.090	200
	680	18	16.5	1200	0.14	0.070	150
	1000	18	21.5	1650	0.14	0.050	100