

Surface Mount Type

Series : **ZC** Type : **V**

High temperature Lead-Free reflow



Features

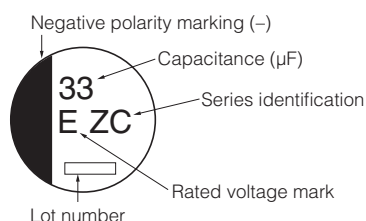
- Endurance: 4000 h at 125 °C (High temperature / Long life)
- Low ESR and high ripple current (85 % over, Lower ESR than current V-TP)
- High-withstand voltage (25 V.DC to 80 V.DC), Low LC (0.01 CV or 3 μ A)
- Equivalent to conductive polymer type aluminum electrolytic capacitor
(There are little characteristics change by temperature and frequency)
- Vibration-proof product is available upon request. New lineup of ϕ 6.3 product. (ϕ 6.3 mm and larger)
- AEC-Q200 compliant
- RoHS directive compliant

Specifications

Size code	C	D	D8	F	G
Category temp. range	-55 °C to +125 °C				
Rated voltage range	25 V.DC to 50 V.DC	25 V.DC to 63 V.DC		25 V.DC to 80 V.DC	
Nominal cap.range	10 µF to 33 µF	10 µF to 56 µF	22 µF to 100 µF	22 µF to 220 µF	33 µF to 330 µF
Capacitance tolerance	±20 % (120 Hz/+20 °C)				
DC leakage current	I ≤ 0.01 CV or 3 (µA) After 2 minutes (whichever is greater)				
Dissipation factor (tan δ)	Please see the attached standard products list				
Endurance 1	125 °C, 4000 h, apply the rated ripple current without exceeding the rated voltage				
	Capacitance change	Within ±30% of the initial value			
	tan δ	≤ 200 % of the initial limit			
	E. S. R.	≤ 200 % of the initial limit			
	DC leakage current	Within the initial limit			
Endurance 2	125 °C, 3000 h, apply the rated ripple current without exceeding the rated voltage				
	Capacitance change	Within ±30% of the initial value			
	tan δ	≤ 200 % of the initial limit			
	E. S. R.	≤ 300 % of the initial limit			
	DC leakage current	Within the initial limit			
Shelf life	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)				
Damp heat (Load)	85 °C, 85 % to 90 %, 2000 h, rated voltage applied				
	Capacitance change	Within ±30% of the initial value			
	tan δ	≤ 200 % of the initial limit			
	E. S. R.	≤ 200 % of the initial limit			
	DC leakage current	Within the initial limit			
Resistance to soldering heat	After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits.				
	Capacitance change	Within ±10% of the initial value			
	tan δ	Within the initial limit			
	DC leakage current	Within the initial limit			

Marking

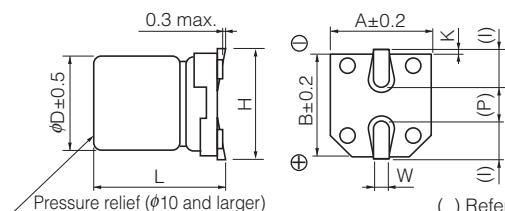
Example : 25 V.DC 33 μ F Marking color : BLACK



Rated voltage mark

E	25 V.DC	J	63 V.DC
V	35 V.DC	K	80 V.DC
H	50 V.DC		

Dimensions (not to scale)



() Reference size
(Unit : mm)

Size code	D	L	A, B	H	I	W	P	K
C	5.0	5.8 ± 0.3	5.3	6.5 max.	2.2	0.65 ± 0.1	1.5	0.35 ± 0.15
D	6.3	5.8 ± 0.3	6.6	7.8 max.	2.6	0.65 ± 0.1	1.8	0.35 ± 0.15
D8	6.3	7.7 ± 0.3	6.6	7.8 max.	2.6	0.65 ± 0.1	1.8	0.35 ± 0.15
F	8.0	10.2 ± 0.3	8.3	10.0 max.	3.4	0.90 ± 0.2	3.1	0.70 ± 0.2
G	10.0	10.2 ± 0.3	10.3	12.0 max.	3.5	0.90 ± 0.2	4.6	0.70 ± 0.2

· The dimensions of the vibration-proof products, please refer to the page of the mounting specification.

Standard products

Endurance 1 : 125 °C 4000 h
Endurance 2 : 125 °C 3000 h

Rated voltage (V.DC)	Capaci- tance (±20 %) (μF)	Case size (mm)		Size code	Specification				Part number		Min. packaging q'ty
		φD	L		Ripple current (100 kHz) (+125 °C) (mA r.m.s.)		ESR (100 kHz) (+20 °C) (mΩ)	tanδ (120 Hz) (+20 °C)	Standard Product	Vibration-proof product	Taping (pcs)
					Endurance 1	Endurance 2					
25	33	5	5.8	C	550	—	80	0.14	EEHZA1E330R	—	1000
	56	6.3	5.8	D	900	—	50	0.14	EEHZA1E560P	EEHZA1E560V	1000
	100	6.3	7.7	D8	1400	—	30	0.14	EEHZA1E101XP	EEHZA1E101XV	900
	220	8	10.2	F	1600	1900	27	0.14	EEHZA1E221P	EEHZA1E221V	500
	330	10	10.2	G	2000	2900	20	0.14	EEHZA1E331P	EEHZA1E331V	500
35	22	5	5.8	C	550	—	100	0.12	EEHZA1V220R	—	1000
	47	6.3	5.8	D	900	—	60	0.12	EEHZA1V470P	EEHZA1V470V	1000
	68	6.3	7.7	D8	1400	—	35	0.12	EEHZA1V680XP	EEHZA1V680XV	900
	150	8	10.2	F	1600	1900	27	0.12	EEHZA1V151P	EEHZA1V151V	500
	270	10	10.2	G	2000	2800	20	0.12	EEHZA1V271P	EEHZA1V271V	500
50	10	5	5.8	C	500	—	120	0.10	EEHZA1H100R	—	1000
	22	6.3	5.8	D	750	—	80	0.10	EEHZA1H220P	EEHZA1H220V	1000
	33	6.3	7.7	D8	1100	—	40	0.10	EEHZA1H330XP	EEHZA1H330XV	900
	68	8	10.2	F	1250	—	30	0.10	EEHZA1H680P	EEHZA1H680V	500
	100	10	10.2	G	1600	—	28	0.10	EEHZA1H101P	EEHZA1H101V	500
	120	10	10.2	G	1600	—	28	0.10	EEHZA1H121P	EEHZA1H121V	500
63	10	6.3	5.8	D	700	—	120	0.08	EEHZA1J100P	EEHZA1J100V	1000
	22	6.3	7.7	D8	900	—	80	0.08	EEHZA1J220XP	EEHZA1J220XV	900
	33	8	10.2	F	1100	—	40	0.08	EEHZA1J330P	EEHZA1J330V	500
	56	10	10.2	G	1400	—	30	0.08	EEHZA1J560P	EEHZA1J560V	500
	68	10	10.2	G	1400	—	30	0.08	EEHZA1J680P	EEHZA1J680V	500
80	22	8	10.2	F	1050	—	45	0.08	EEHZA1K220P	EEHZA1K220V	500
	33	10	10.2	G	1360	—	36	0.08	EEHZA1K330P	EEHZA1K330V	500
	47	10	10.2	G	1360	—	36	0.08	EEHZA1K470P	EEHZA1K470V	500

· Please refer to the page of "Reflow profile" and "The taping dimensions".

Frequency correction factor for ripple current

Rated capacitance	Frequency	100 Hz ≤ f < 200 Hz	200 Hz ≤ f < 300 Hz	300 Hz ≤ f < 500 Hz	500 Hz ≤ f < 1 kHz
C < 47 μF	Correction factor	0.10	0.10	0.15	0.20
47 μF ≤ C < 150 μF		0.15	0.20	0.25	0.30
150 μF ≤ C		0.15	0.25	0.25	0.30
Rated capacitance	Frequency	1 kHz ≤ f < 2 kHz	2 kHz ≤ f < 3 kHz	3 kHz ≤ f < 5 kHz	5 kHz ≤ f < 10 kHz
C < 47 μF	Correction factor	0.30	0.40	0.45	0.50
47 μF ≤ C < 150 μF		0.40	0.45	0.55	0.60
150 μF ≤ C		0.45	0.50	0.60	0.65
Rated capacitance	Frequency	10 kHz ≤ f < 15 kHz	15 kHz ≤ f < 20 kHz	20 kHz ≤ f < 30 kHz	30 kHz ≤ f < 40 kHz
C < 47 μF	Correction factor	0.60	0.65	0.70	0.75
47 μF ≤ C < 150 μF		0.70	0.75	0.80	0.80
150 μF ≤ C		0.75	0.80	0.85	0.85
Rated capacitance	Frequency	40 kHz ≤ f < 50 kHz	50 kHz ≤ f < 100 kHz	100 kHz ≤ f < 500 kHz	500 kHz ≤ f
C < 47 μF	Correction factor	0.80	0.85	1.00	1.05
47 μF ≤ C < 150 μF		0.85	0.90	1.00	1.00
150 μF ≤ C		0.85	0.90	1.00	1.00

After endurance ESR (100 kHz, -40 °C)

Size	φ5×5.8	φ6.3×5.8	φ6.3×7.7	φ8×10.2	φ10×10.2
ESR (Ω)	2.0	1.4	0.8	0.4	0.3