Surface Mount Type

ZKU series V type

High temperature lead-free reflow

NEW

Features

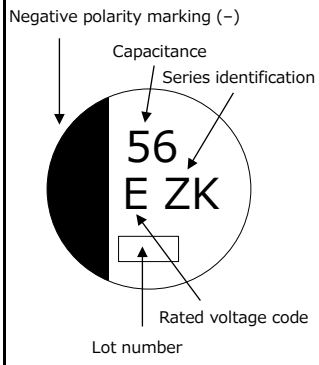
- Endurance : 4000 h at 125 ℃ (High temperature / Long life)
- Large capacitance compared with ZK series
- Low ESR (85 % over, Lower ESR than Current V-TP), Low LC (0.01 CV or 3 μA)
- Equivalent to conductive polymer type Aluminum Electrolytic Capacitor (There are little characteristics change by temperature and frequency)
- Vibration-proof product is available upon request. (φ6.3, φ8, φ10)
- AEC-Q200 compliant
- RoHS compliant

Specifications

Size code	C	D	D8	F	G
Category temp. range	−55 ℃ to +125 ℃				
Rated voltage range	25 V.DC to 35 V.DC				
Nominal cap.range	39 μF to 56 μF	68 μF to 100 μF	120 μF to 180 μF	220 μF to 330 μF	390 μF to 560 μF
Capacitance tolerance	±20 % (120 Hz / +20 ℃)				
DC leakage current	I ≦ 0.01 CV or 3 (μA) After 2 minutes (whichever is greater)				
Dissipation factor (tan δ)	Please see the attached characteristics list				
Endurance	+125 ℃ ± 2 ℃ 4000 h, apply the rated ripple current without exceeding the rated voltage.				
	Capacitance change	Within ±30% of the initial value			
	Dissipation factor (tan δ)	≦ 200 % of the initial limit			
	ESR	≦ 200 % of the initial limit			
	DC leakage current	Within the initial limit			
	ESR after endurance (Ω / 100 kHz)(-40 ℃)	Size code			
		C	D	D8	F	G
		2.0	1.4	0.8	0.4	0.3
Shelf life	After storage for 1000 hours at +125 ℃ ± 2 ℃ with no voltage applied and then being stabilized at +20 ℃, capacitors shall meet the limits specified in endurance. (With voltage treatment)					
Damp heat (Load)	+85 ℃ ± 2 ℃, 85 % to 90 %, 2000 h, rated voltage applied					
	Capacitance change	Within ±30% of the initial value				
	Dissipation factor (tan δ)	≦ 200 % of the initial limit				
	ESR	≦ 200 % of the initial limit				
	DC leakage current	Within the initial limit				

Marking

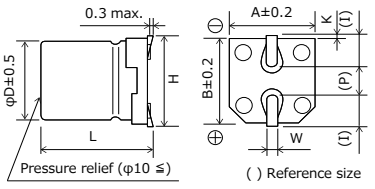
Example : 25 V.DC 56 μF
Marking color : BLACK



R. voltage code	Unit : V.DC
E	25
V	35

Dimensions (not to scale)

[Standard]

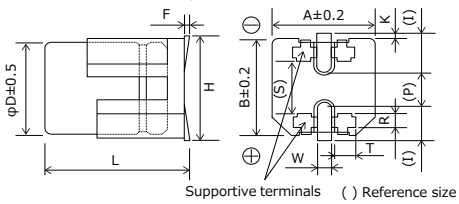


Unit : mm

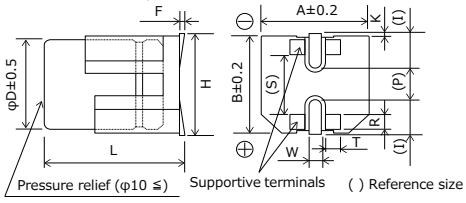
Size code	φD	L	A、B	H max.	I	W	P	K
C	5.0	5.8±0.3	5.3	6.5	2.2	0.65±0.1	1.5	0.35 +0.15 -0.20
D	6.3	5.8±0.3	6.6	7.8	2.6	0.65±0.1	1.8	0.35 +0.15 -0.20
D8	6.3	7.7±0.3	6.6	7.8	2.6	0.65±0.1	1.8	0.35 +0.15 -0.20
F	8.0	10.2±0.3	8.3	10	3.4	0.90±0.2	3.1	0.70±0.2
G	10.0	10.2±0.3	10.3	12.0	3.5	0.90±0.2	4.6	0.70±0.2

[Vibration-proof product]

< Size code : D, D8 >



< Size code : F, G >



Unit : mm

Size code	φD	L	A、B	H max.	F	I	W	P	K	R	S	T
D	6.3	6.1±0.3	6.6	7.8	0 to +0.15	2.4	0.65±0.1	2.2	0.35 +0.15 -0.20	1.1±0.2	3.3	1.05±0.2
D8	6.3	8.0±0.3	6.6	7.8	0 to +0.15	2.4	0.65±0.1	2.2	0.35 +0.15 -0.20	1.1±0.2	3.3	1.05±0.2
F	8.0	10.5±0.3	8.3	10.0	0 to +0.15	3.4	1.2±0.2	3.1	0.70±0.2	0.70±0.2	5.3	1.3±0.2
G	10.0	10.5±0.3	10.3	12.0	0 to +0.15	3.5	1.2±0.2	4.6	0.70±0.2	0.70±0.2	6.9	1.3±0.2

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

Characteristics list

Endurance : 125 ℃ 4000 h

Rated voltage (V.DC)	Capacitance (±20 %) (μF)	Case size (mm) φD	Case size (mm) L Standard	Case size (mm) L Vibration-proof	Size code	Specification Ripple current*1 (mA r.m.s.)	Specification ESR*2 (mΩ)	Specification tan δ*3	Part number Standard Product	Part number Vibration-proof product	Min.packaging q'ty Taping (pcs)
25	56	5	5.8	-	C	850	80	0.14	EEHZK1E560UR	-	1000
	100	6.3	5.8	6.1	D	1300	50	0.14	EEHZK1E101UP	EEHZK1E101UV	1000
	180	6.3	7.7	8.0	D8	1800	30	0.14	EEHZKE181XUP	EEHZKE181XUV	900
	330	8	10.2	10.5	F	2000	27	0.14	EEHZK1E331UP	EEHZK1E331UV	500
	560	10	10.2	10.5	G	2800	20	0.14	EEHZK1E561UP	EEHZK1E561UV	500
35	39	5	5.8	-	C	750	100	0.12	EEHZK1V390UR	-	1000
	68	6.3	5.8	6.1	D	1200	60	0.12	EEHZK1V680UP	EEHZK1V680UV	1000
	120	6.3	7.7	8.0	D8	1700	35	0.12	EEHZKV121XUP	EEHZKV121XUV	900
	220	8	10.2	10.5	F	2000	27	0.12	EEHZK1V221UP	EEHZK1V221UV	500
	390	10	10.2	10.5	G	2800	20	0.12	EEHZK1V391UP	EEHZK1V391UV	500

*1: Ripple current (100 kHz / +125 ℃)
*2: ESR (100 kHz / +20 ℃)
*3: tan δ (120 Hz / +20 ℃)
◆ Please refer to the page of “Reflow profile” and “The taping dimensions”.
◆ The dimensions of the vibration-proof products, please refer to the page of the mounting specification.

Frequency correction factor for ripple current

Rated capacitance (C)	Frequency(f)	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	0.15	0.20	0.25	0.35
47 μF ≦ C < 100 μF		0.15	0.25	0.30	0.40
100 μF ≦ C		0.15	0.25	0.30	0.40

Rated capacitance (C)	Frequency(f)	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	0.45	0.55	0.60	0.65
47 μF ≦ C < 100 μF		0.50	0.60	0.65	0.70
100 μF ≦ C		0.50	0.60	0.65	0.70

Rated capacitance (C)	Frequency(f)	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	0.70	0.75	0.75	0.75
47 μF ≦ C < 100 μF		0.75	0.75	0.80	0.80
100 μF ≦ C		0.75	0.80	0.85	0.85

Rated capacitance (C)	Frequency(f)	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 < 100 μF		0.85	0.90	1.00	1.00
100 μF ≦ C		0.85	0.90	1.00	1.00

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