

Surface Mount Type

ZS series **V** type

High temperature lead-free reflow



Features

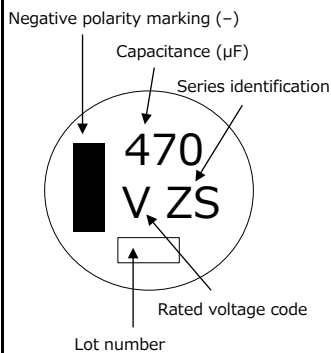
- High ripple current and Large capacitance compared with ZC series
- Endurance: 4000 h at 125 °C
- Equivalent to conductive polymer type Aluminum Electrolytic Capacitor (There are little characteristics change by temperature and frequency)
- Vibration-proof product is available upon request.
- AEC-Q200 compliant
- RoHS compliant

Specifications

Size code	G16	
Category temp. range	-55 °C to +125 °C	
Rated voltage range	25 V.DC to 63 V.DC	
Nominal cap.range	150 μF to 560 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 characteristics list	
Endurance	+125 °C ± 2 °C, 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
	E.S.R.	≤ 200 % of the initial limit
	DC leakage current	Within the initial limit
	ESR after endurance (Ω / 100 kHz)(-40 °C)	Size code G16 0.3
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 ± 2 °C, 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
	E.S.R.	≤ 200 % of 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
	Dissipation factor (tan δ)	Within the initial limit
	DC leakage current	Within the initial limit

Marking

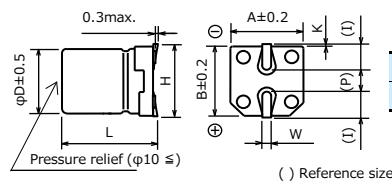
Example : 35 V.DC 470 μF
Marking color : BLACK



Rated volt. code	Unit : V.DC
E	25
V	35
H	50
J	63

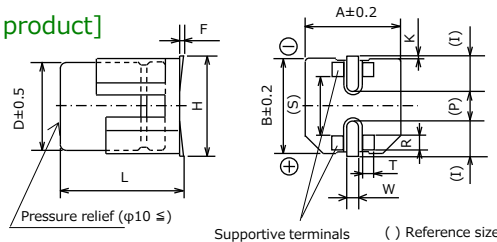
Dimensions (not to scale)

[Standard]



Size code	φD	L	A, B	H	I	W	P	Unit : mm	
G16	10.0	16.5	10.3	11.0±0.2	3.5	1.2±0.2	4.6		

[Vibration-proof product]



Size code	φD	L	A, B	H	F	I	W	P	K	R	S	T	Unit : mm	
G16	10.0	16.8	10.3	11.0±0.2	0 to +0.15	3.2	1.2±0.2	4.6	-	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 °C 4000 h

Rated voltage (V.DC)	Capacitance (±20 %) (μF)	Case size (mm)			Size code	Specification			Part number		Min. packaging q'ty
		φD	L			Ripple current* ¹ (mA r.m.s.)	ESR* ² (mΩ)	tan δ* ³	Standard Product	Vibration-proof product	Taping (pcs)
			Standard	Vibration-proof							
25	560	10.0	16.5	16.8	G16	4000	11	0.14	EEHZS1E561P	EEHZS1E561V	250
35	470	10.0	16.5	16.8	G16	4000	11	0.12	EEHZS1V471P	EEHZS1V471V	250
50	220	10.0	16.5	16.8	G16	3700	13	0.10	EEHZS1H221P	EEHZS1H221V	250
63	150	10.0	16.5	16.8	G16	3500	15	0.08	EEHZS1J151P	EEHZS1J151V	250

*1: Ripple current (100 kHz / +125 °C)

*2: ESR (100 kHz / +20 °C)

*3: tan δ (120 Hz / +20 °C)

◆ 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
100 μF ≤ C < 150 μF	Correction factor	0.15	0.20	0.25	0.30
150 μF ≤ C	factor	0.15	0.25	0.25	0.30
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
100 μF ≤ C < 150 μF	Correction factor	0.40	0.45	0.55	0.60
150 μF ≤ C	factor	0.45	0.50	0.60	0.65
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
100 μF ≤ C < 150 μF	Correction factor	0.70	0.75	0.80	0.80
150 μF ≤ C	factor	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
100 μF ≤ C < 150 μF	Correction factor	0.85	0.90	1.00	1.00
150 μF ≤ C	factor	0.85	0.90	1.00	1.00

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