

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

Technical Data ZS series



Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

SMD type ZS series



Patr No.	Voltaeg / Cap.		Size	Page	
EEHZA1E471P	25 V	470 µF	Φ 10 x 12.5	...	ZS- 1
EEHZA1E561P	25 V	560 µF	Φ 10 x 16.5	...	ZS- 2
EEHZA1V331P	35 V	330 µF	Φ 10 x 12.5	...	ZS- 3
EEHZA1V471P	35 V	470 µF	Φ 10 x 16.5	...	ZS- 4
EEHZA1H151P	50 V	150 µF	Φ 10 x 12.5	...	ZS- 5
EEHZA1H221P	50 V	220 µF	Φ 10 x 16.5	...	ZS- 6
EEHZA1J101P	63 V	100 µF	Φ 10 x 12.5	...	ZS- 7
EEHZA1J151P	63 V	150 µF	Φ 10 x 16.5	...	ZS- 8

Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

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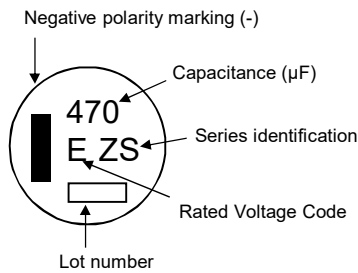
Part Number : EEHZS1E471P

Endurance: 125 °C, 4000 h

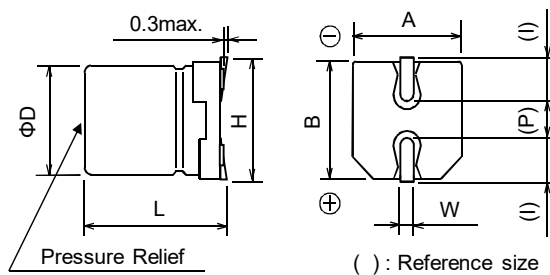
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	25 V
Nominal Capacitance	470 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.14 max. (at 120 Hz)
Leakage Current	117.5 μA max. (at R.V., After 2 min)
ESR	14 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	3500 mA _{RMS} max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)

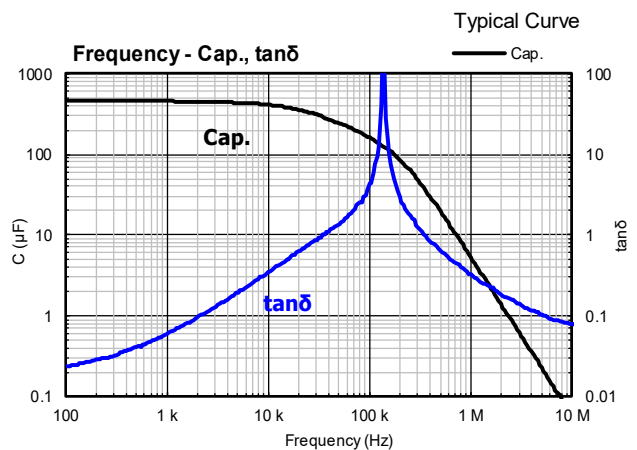
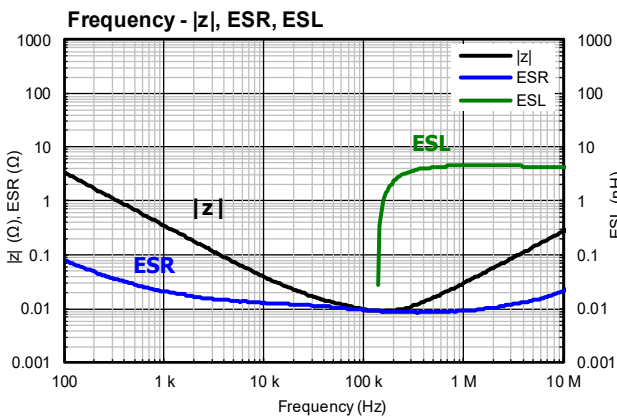


Size Code: G12 (Unit: mm)

ϕD	10.0 ±0.5
L	12.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

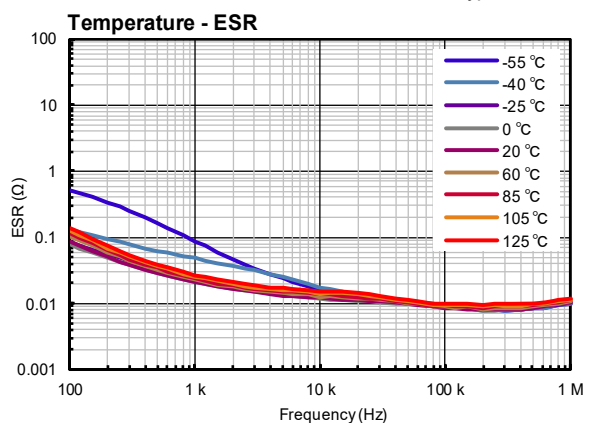
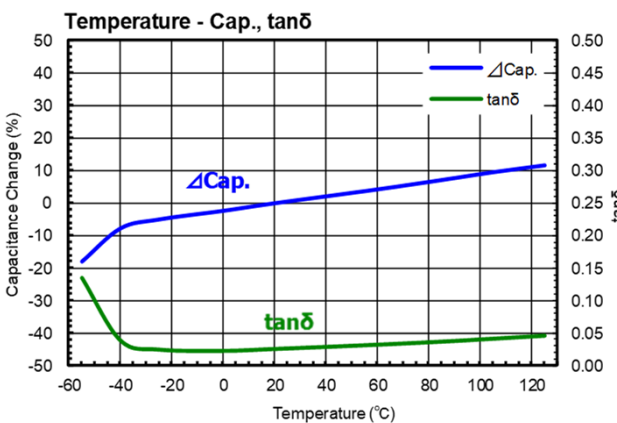
Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 V_{rms} (at no load)



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 V_{rms} (at no load)



Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

SMD type ZS series

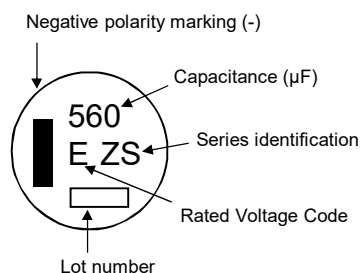
Part Number : EEHZS1E561P

Endurance: 125 °C, 4000 h

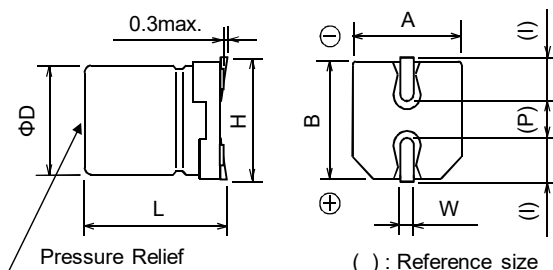
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	25 V
Nominal Capacitance	560 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.14 max. (at 120 Hz)
Leakage Current	140.0 μA max. (at R.V., After 2 min)
ESR	11 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	4000 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)



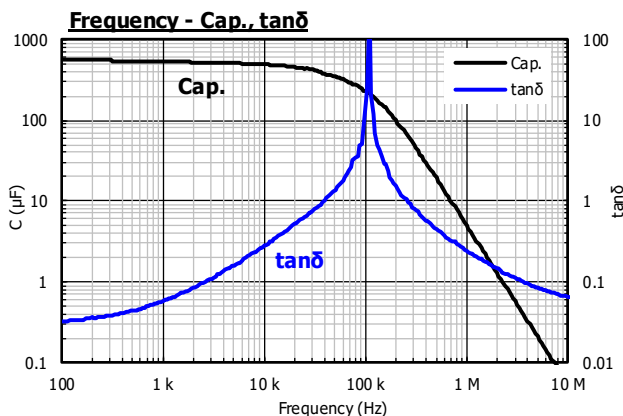
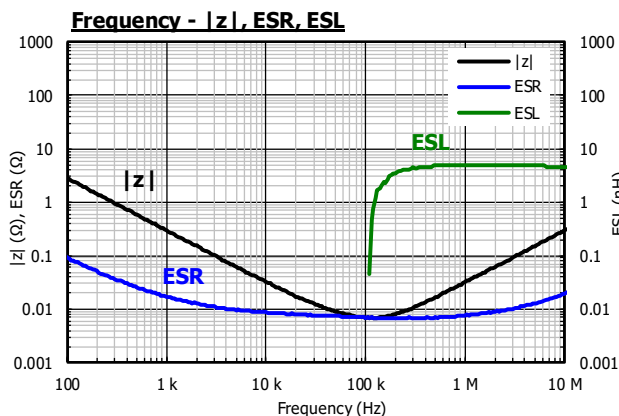
Size Code: G16 (Unit: mm)

ΦD	10.0 ±0.5
L	16.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)

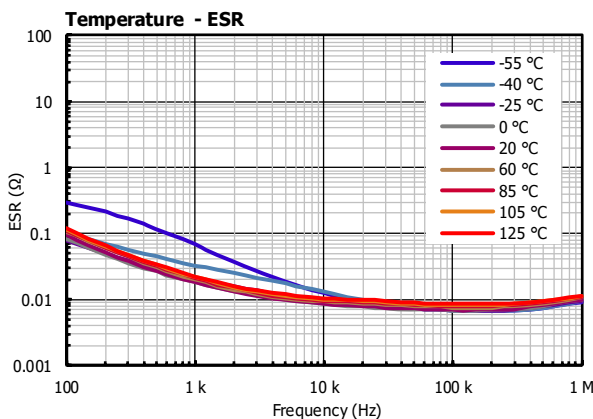
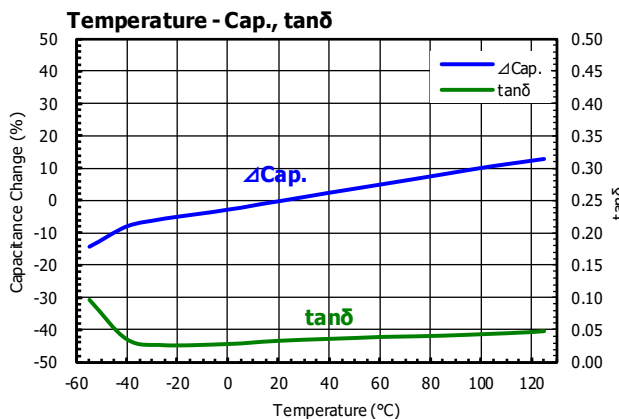
Typical Curve



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)

Typical Curve



Data Sheet

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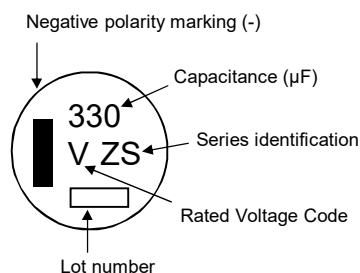
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Endurance: 125 °C, 4000 h

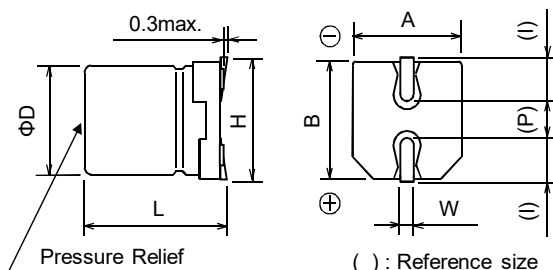
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	35 V
Nominal Capacitance	330 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.12 max. (at 120 Hz)
Leakage Current	115.5 μA max. (at R.V., After 2 min)
ESR	14 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	3500 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)



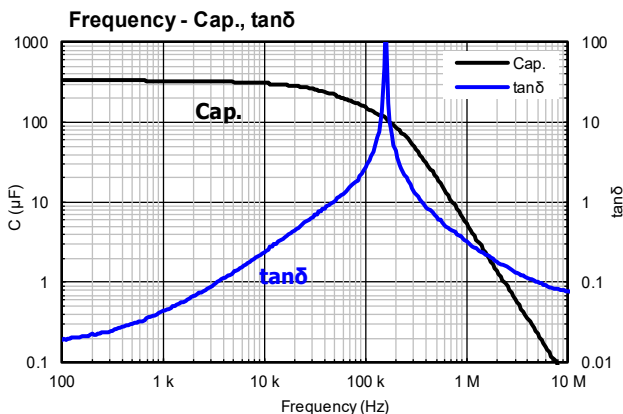
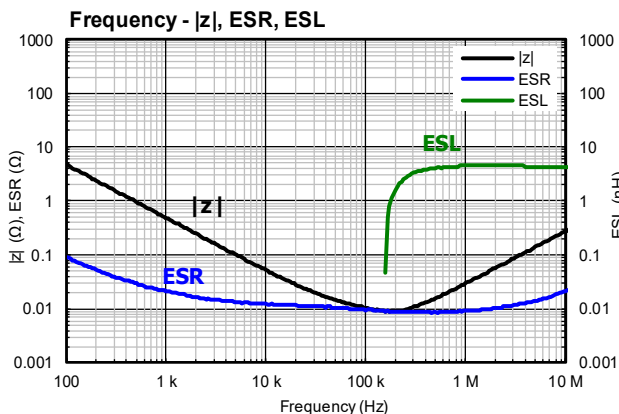
Size Code: G12 (Unit: mm)

ΦD	10.0 ±0.5
L	12.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)

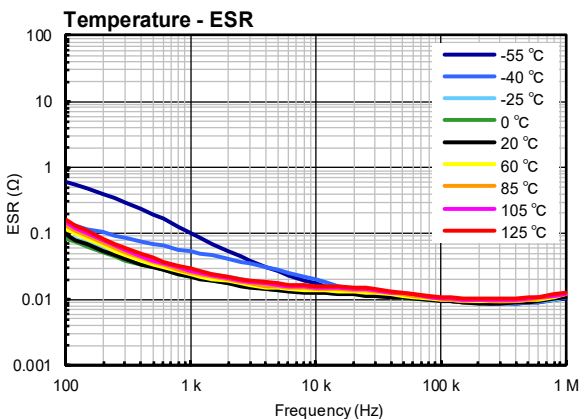
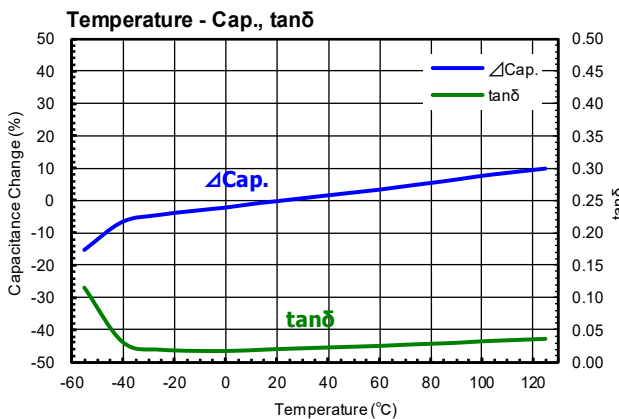
Typical Curve



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)

Typical Curve



Data Sheet

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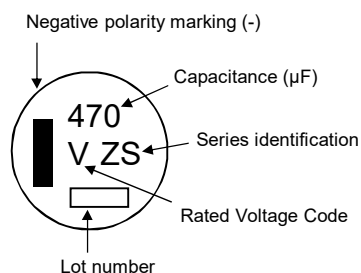
Part Number : EEHZS1V471P

Endurance: 125 °C, 4000 h

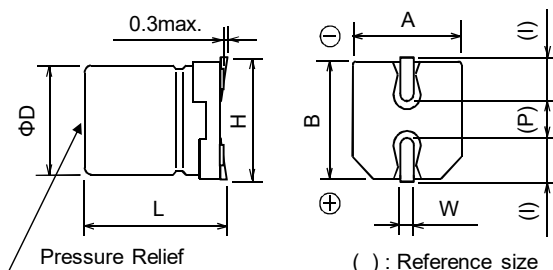
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	35 V
Nominal Capacitance	470 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.12 max. (at 120 Hz)
Leakage Current	164.5 μA max. (at R.V., After 2 min)
ESR	11 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	4000 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)

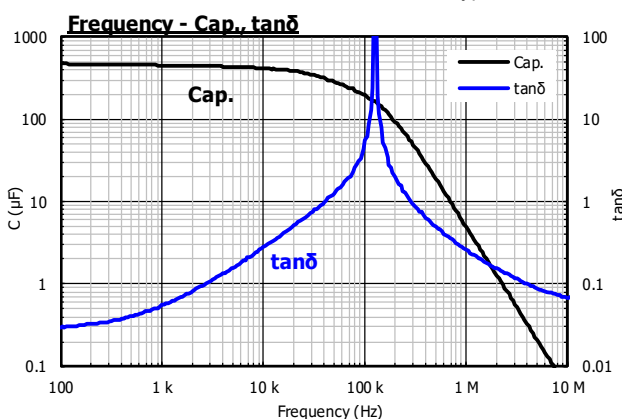
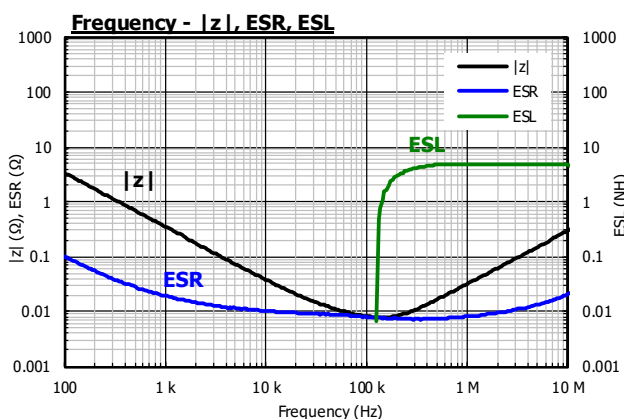


Size Code: G16 (Unit: mm)

ΦD	10.0 ±0.5
L	16.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

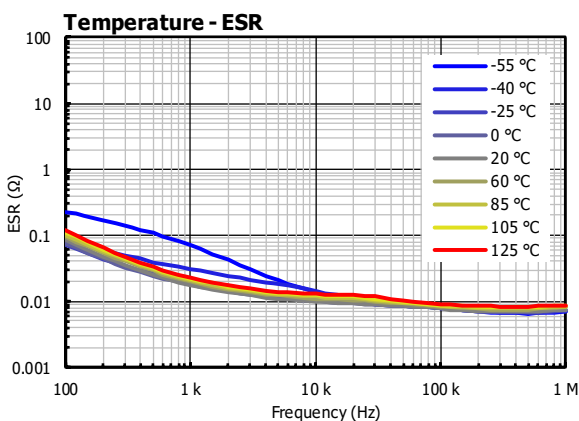
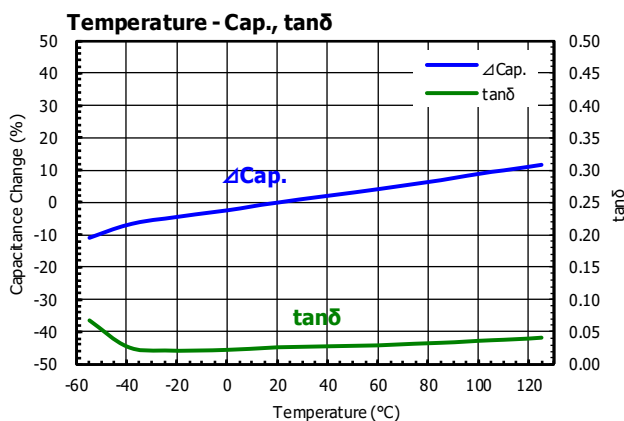
Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)



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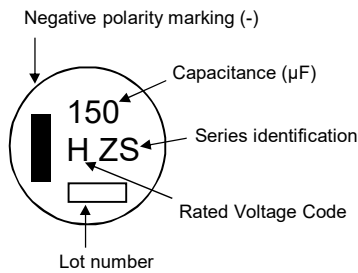
Part Number : EEHZS1H151P

Endurance: 125 °C, 4000 h

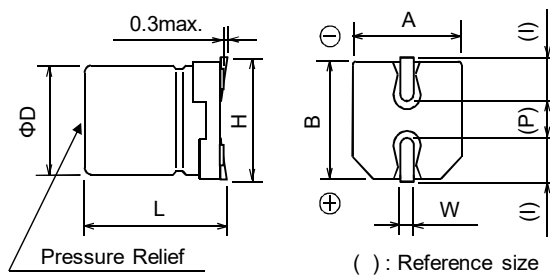
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	50 V
Nominal Capacitance	150 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.10 max. (at 120 Hz)
Leakage Current	75.0 μA max. (at R.V., After 2 min)
ESR	17 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	3200 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)



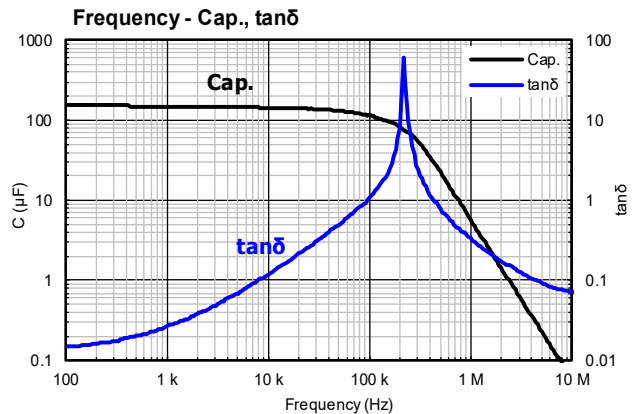
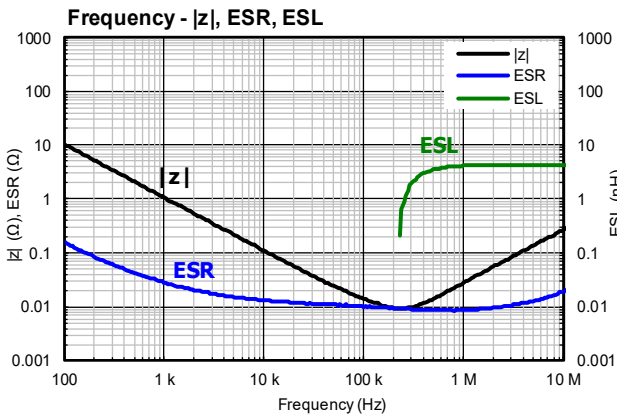
Size Code: G12 (Unit: mm)

ϕD	10.0 ±0.5
L	12.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)

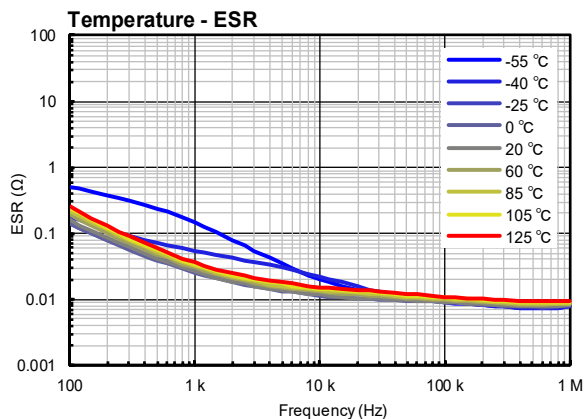
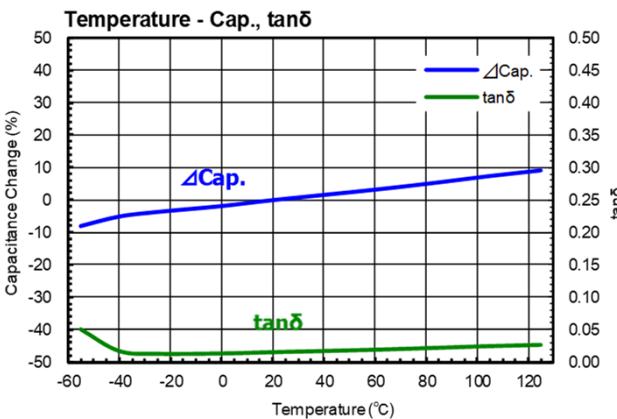
Typical Curve



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)

Typical Curve



Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

SMD type ZS series

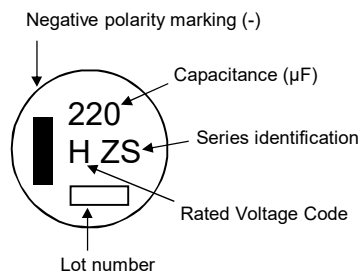
Part Number : EEHZS1H221P

Endurance: 125 °C, 4000 h

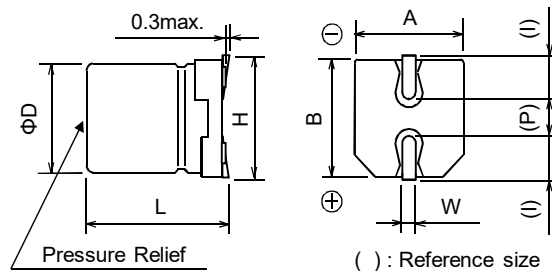
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	50 V
Nominal Capacitance	220 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.10 max. (at 120 Hz)
Leakage Current	110.0 μA max. (at R.V., After 2 min)
ESR	13 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	3700 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)



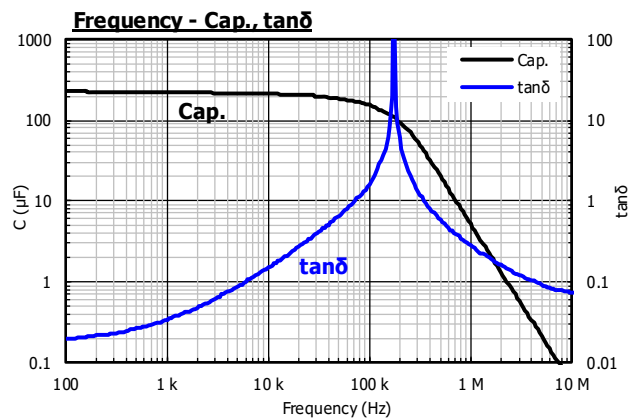
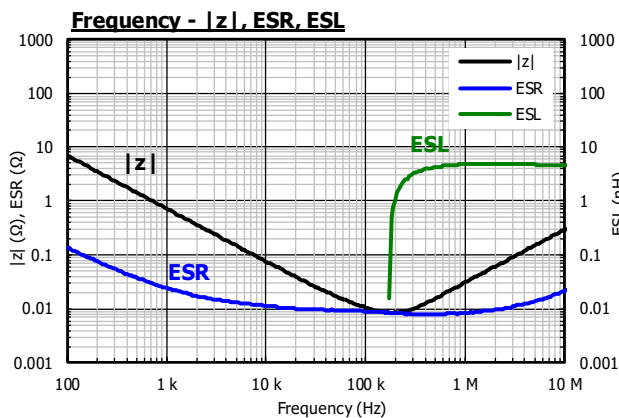
Size Code: G16 (Unit: mm)

ΦD	10.0 ±0.5
L	16.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)

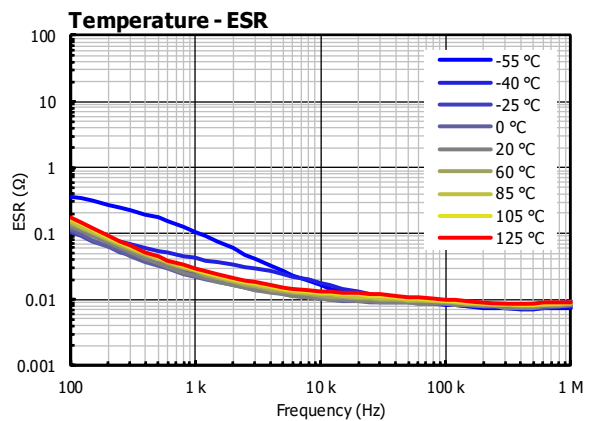
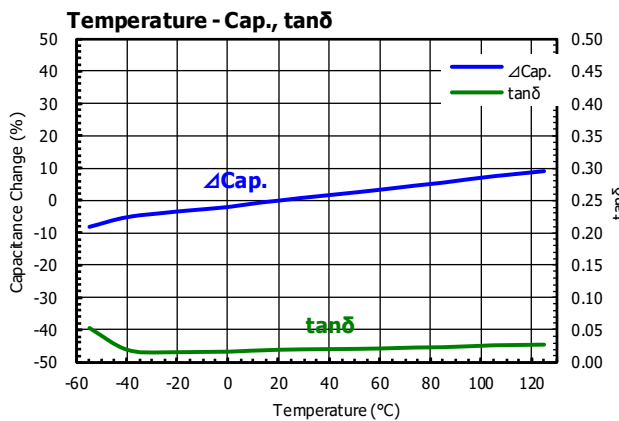
Typical Curve



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)

Typical Curve



Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

SMD type ZS series

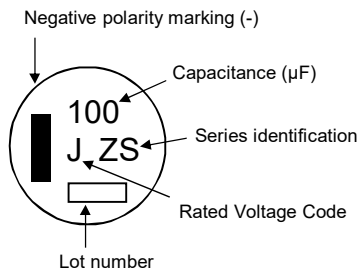
Part Number : EEHZS1J101P

Endurance: 125 °C, 4000 h

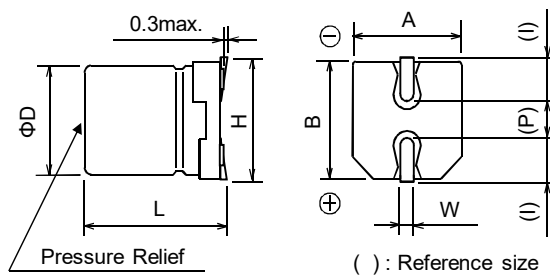
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	63 V
Nominal Capacitance	100 μ F (at 120 Hz)
Capacitance Tolerance	\pm 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
Leakage Current	63.0 μ A max. (at R.V., After 2 min)
ESR	19 m Ω max. (at 100 kHz, 20 °C)
Ripple Current	3000 mA _{rms} max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)

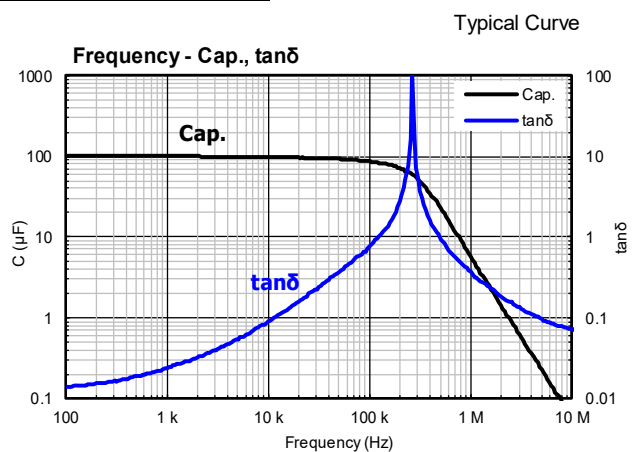
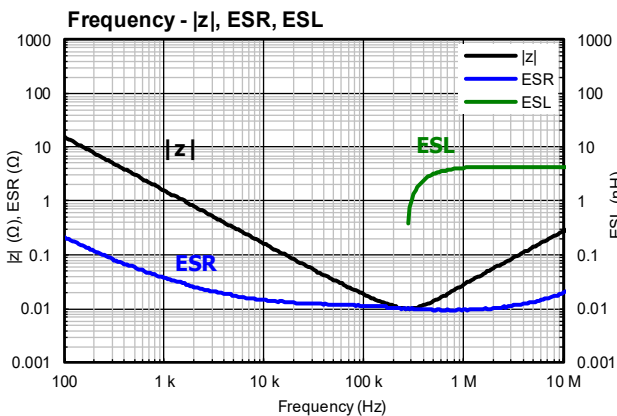


Size Code: G12 (Unit: mm)

ϕ D	10.0 \pm 0.5
L	12.5 \pm 0.3
A, B	10.3 \pm 0.2
H	11.0 \pm 0.2
I	3.2
W	1.2 \pm 0.2
P	4.6

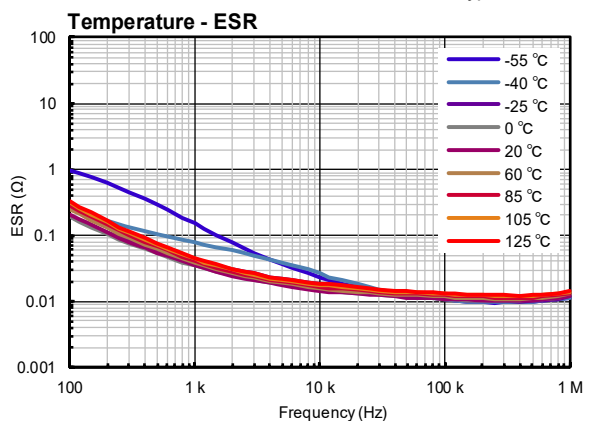
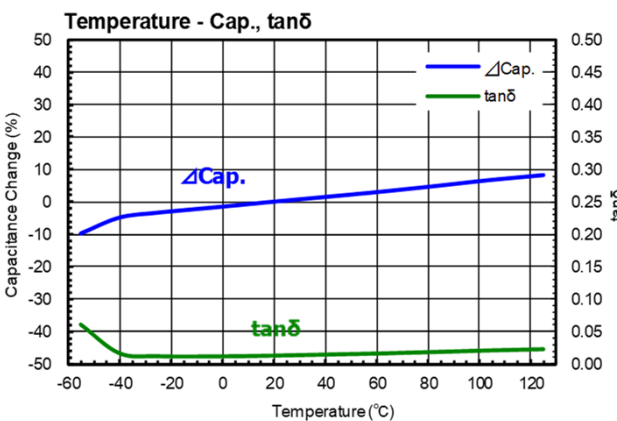
Frequency vs. Impedance, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

Osc. Level: 0.5 V_{rms} (at no load)



Temperature vs. Capacitance, $\tan \delta$, ESR Characteristics

Osc. Level: 0.5 V_{rms} (at no load)



Data Sheet

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

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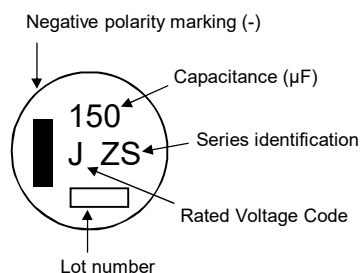
Part Number : EEHZS1J151P

Endurance: 125 °C, 4000 h

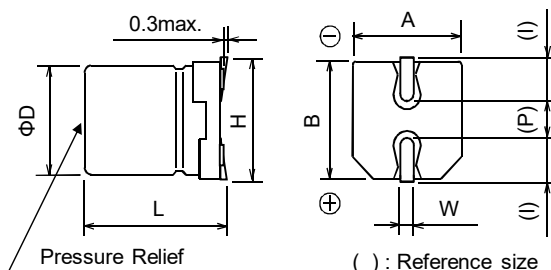
Category Temperature Range	-55 °C to 125 °C
Rated Voltage	63 V
Nominal Capacitance	150 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tan δ	0.08 max. (at 120 Hz)
Leakage Current	94.5 μA max. (at R.V., After 2 min)
ESR	15 mΩ max. (at 100 kHz, 20 °C)
Ripple Current	3500 mA rms max. (at 100 kHz, 125 °C)

Marking



Dimensions in mm (not to scale)



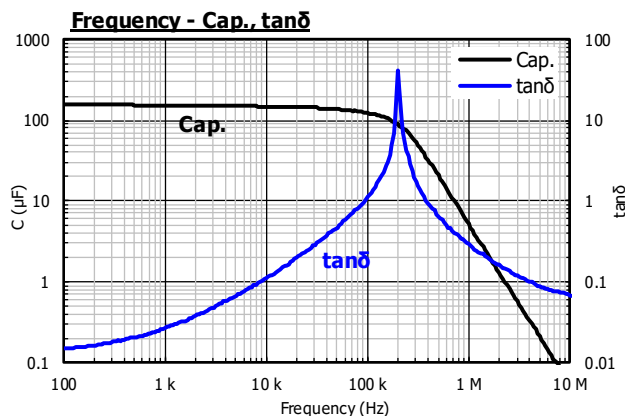
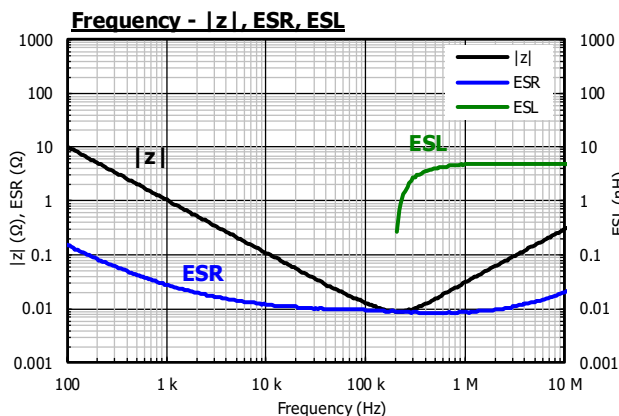
Size Code: G16 (Unit: mm)

ΦD	10.0 ±0.5
L	16.5 ±0.3
A, B	10.3 ±0.2
H	11.0 ±0.2
I	3.2
W	1.2 ±0.2
P	4.6

Frequency vs. Impedance, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)

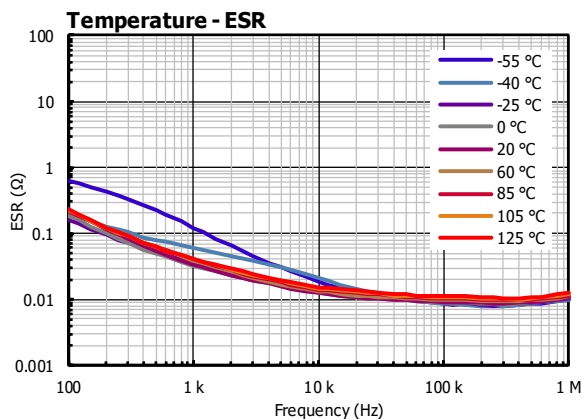
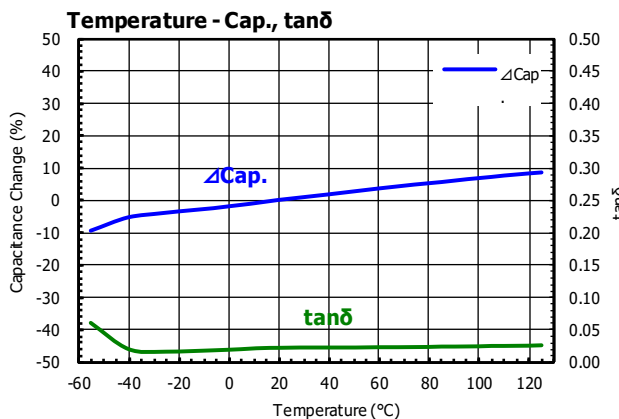
Typical Curve



Temperature vs. Capacitance, tanδ, ESR Characteristics

Osc. Level: 0.5 Vrms (at no load)

Typical Curve



**Technical Data of Conductive Polymer Hybrid
Aluminum Electrolytic Capacitors**

Technical Data ZS series

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Device Solutions Business Division

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