

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

Technical Data ZA series



Device Solution Business Division
Automotive & Industrial Systems Company, Panasonic Co., Ltd.

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series



EEHZA1E330R	25V33 μ F	ϕ 5x5.8	... ZA-2
EEHZA1E560P	25V56 μ F	ϕ 6.3x5.8	... ZA-3
EEHZA1E101XP	25V100 μ F	ϕ 6.3x7.7	... ZA-4
EEHZA1E221P	25V220 μ F	ϕ 8x10.2	... ZA-5
EEHZA1E331P	25V330 μ F	ϕ 10x10.2	... ZA-6
EEHZA1V220R	35V22 μ F	ϕ 5x5.8	... ZA-7
EEHZA1V270P	35V27 μ F	ϕ 6.3x5.8	... ZA-8
EEHZA1V470P	35V47 μ F	ϕ 6.3x5.8	... ZA-9
EEHZA1V680XP	35V68 μ F	ϕ 6.3x7.7	... ZA-10
EEHZA1V151P	35V150 μ F	ϕ 8x10.2	... ZA-11
EEHZA1V271P	35V270 μ F	ϕ 10x10.2	... ZA-12
EEHZA1H100R	50V10 μ F	ϕ 5x5.8	... ZA-13
EEHZA1H220P	50V22 μ F	ϕ 6.3x5.8	... ZA-14
EEHZA1H330XP	50V33 μ F	ϕ 6.3x7.7	... ZA-15
EEHZA1H680P	50V68 μ F	ϕ 8x10.2	... ZA-16
EEHZA1H101P	50V100 μ F	ϕ 10x10.2	... ZA-17
EEHZA1J100P	63V10 μ F	ϕ 6.3x5.8	... ZA-18
EEHZA1J220XP	63V22 μ F	ϕ 6.3x7.7	... ZA-19
EEHZA1J330P	63V33 μ F	ϕ 8x10.2	... ZA-20
EEHZA1J560P	63V56 μ F	ϕ 10x10.2	... ZA-21
EEHZA1K220P	80V22 μ F	ϕ 8x10.2	... ZA-22
EEHZA1K330P	80V33 μ F	ϕ 10x10.2	... ZA-23

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

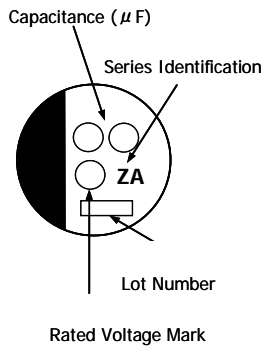
Part Number: EEHZA1E330R

φ5.0×5.8 mm / 25 V / 33 μF / 105 °C, 10000 h

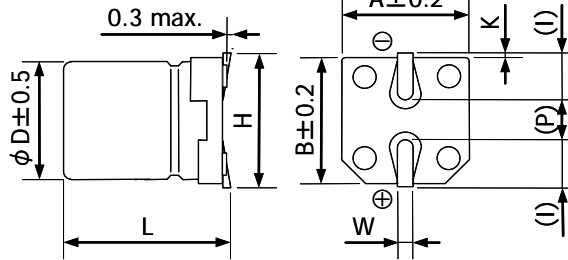
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	33 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	8.2 μA (0.01CV) max. (at W.V., After 2 min)
ESR	80 mΩ max. (at 100 kHz)
Ripple Current	900 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: C

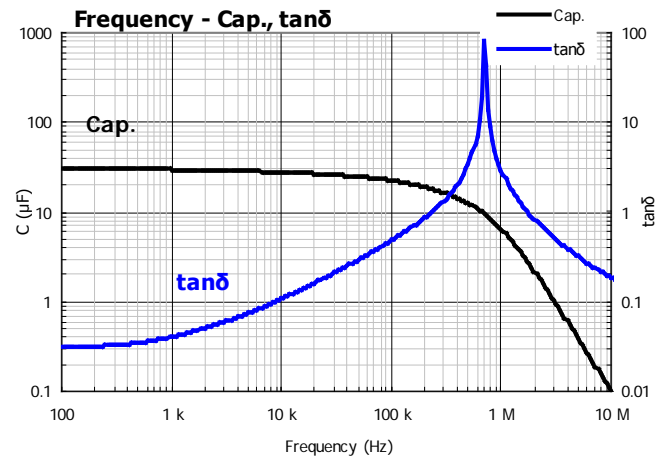
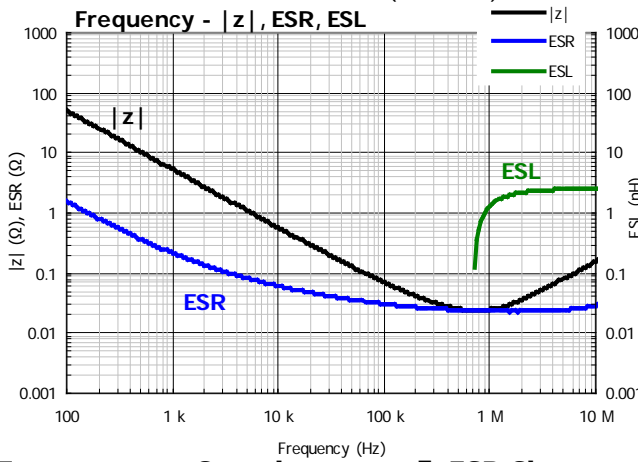


	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
H	6.5 max.
I	2.2
W	0.65±0.10
P	1.5
K	0.35+0.15/-0.20

(): Reference Size

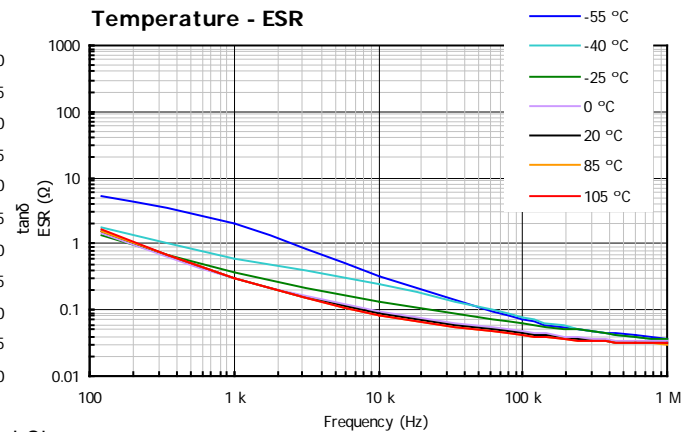
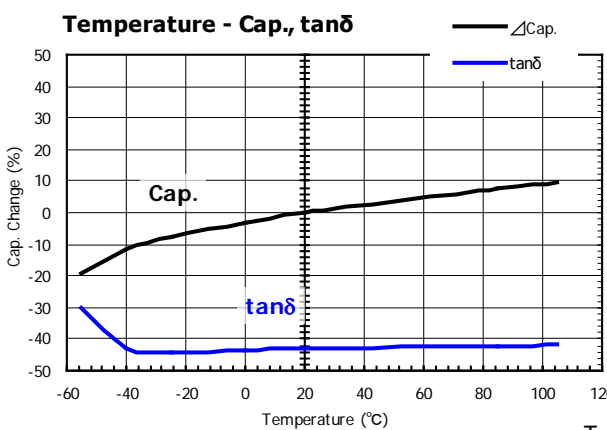
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

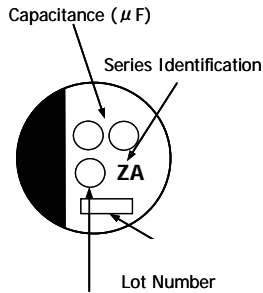
Part Number: EEHZA1E560P

φ 6.3×5.8 mm / 25 V / 56 μF / 105 °C, 10000 h

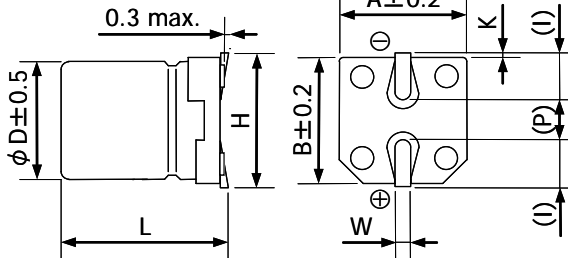
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	56 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	14 μA (0.01CV) max. (at W.V., After 2 min)
ESR	50 mΩ max. (at 100 kHz)
Ripple Current	1300 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D



	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

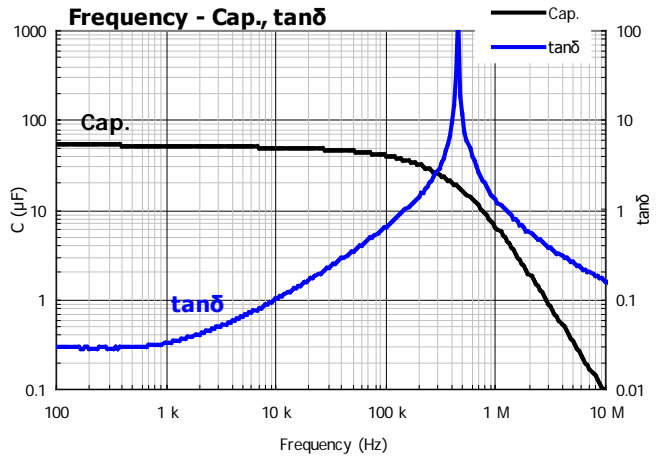
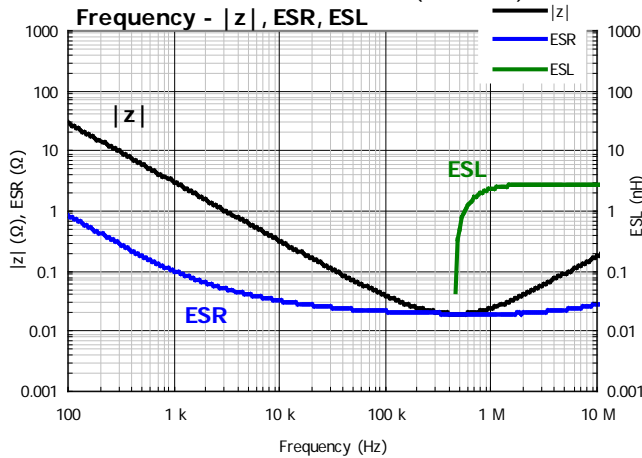
Rated Voltage Mark

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Reference Size

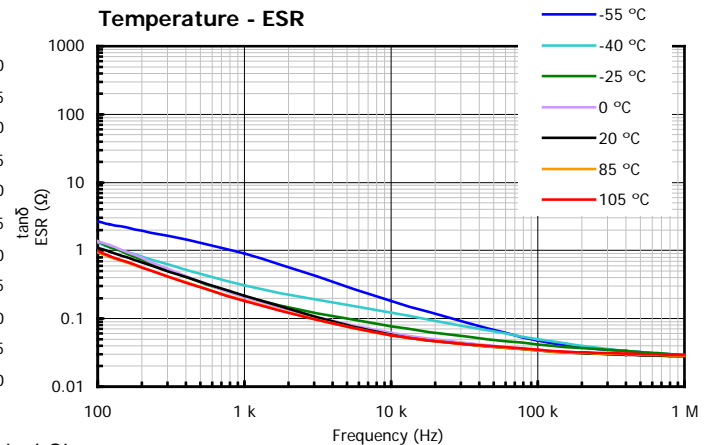
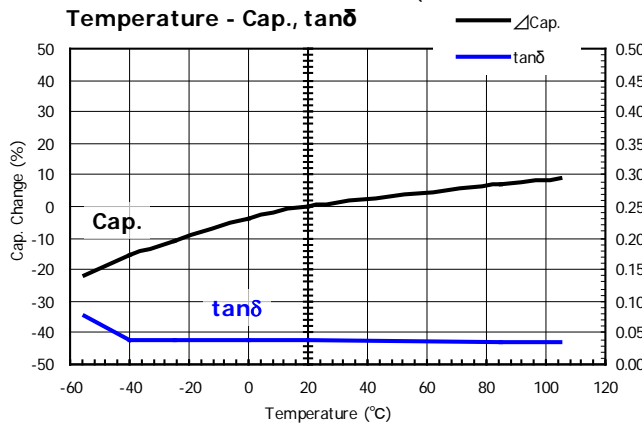
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

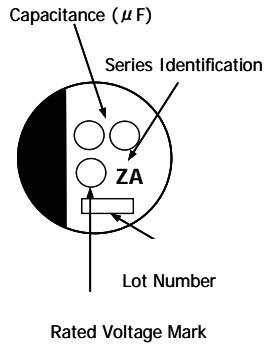
Part Number: EEHZA1E101XP

φ 6.3×7.7 mm / 25 V / 100 μF / 105 °C, 10000 h

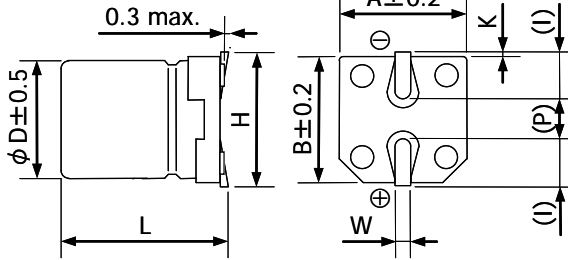
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	100 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	25.0 μA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	2000 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D8

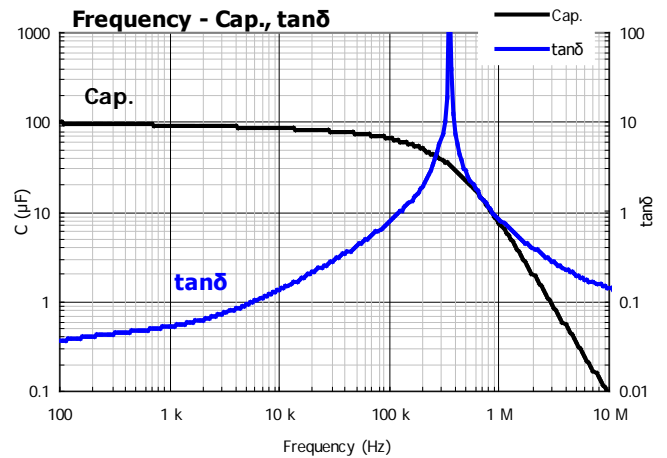
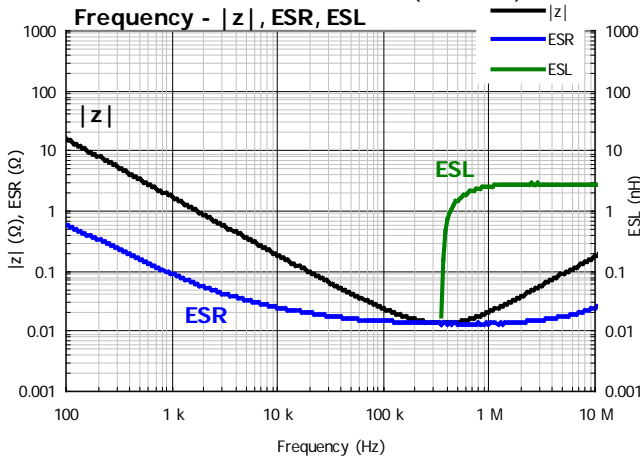


	(mm)
D	6.3
L	7.7±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

(): Reference Size

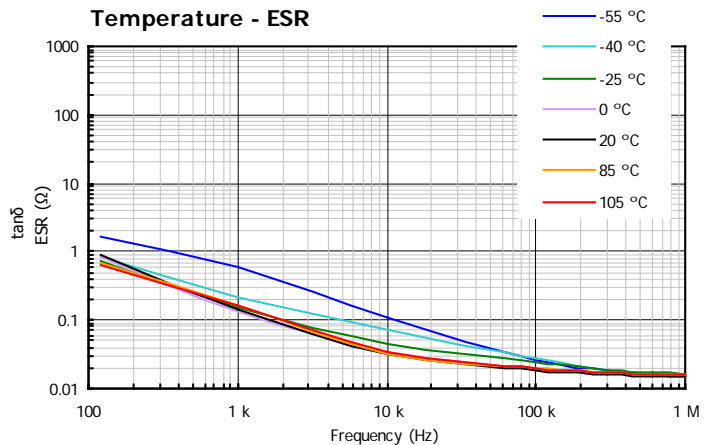
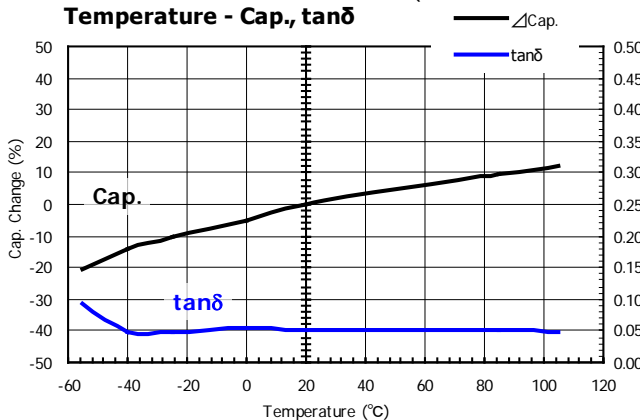
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

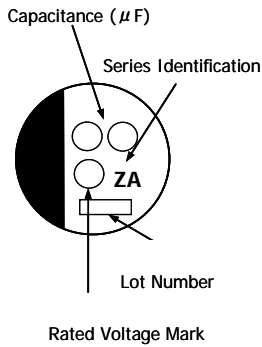
Part Number: EEHZA1E221P

φ 8.0×10.2 mm / 25 V / 220 μF / 105 °C, 10000 h

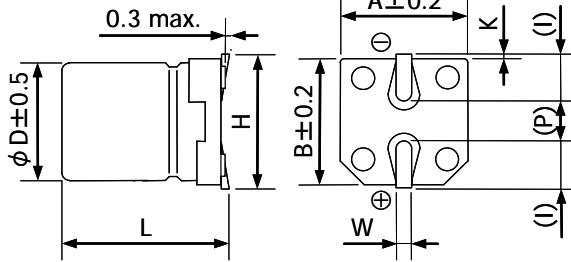
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	220 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	55.0 μA (0.01CV) max. (at W.V., After 2 min)
ESR	27 mΩ max. (at 100 kHz)
Ripple Current	2300 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: F

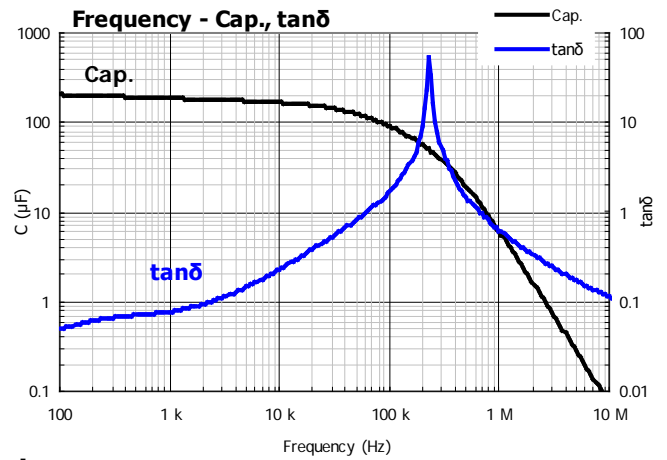
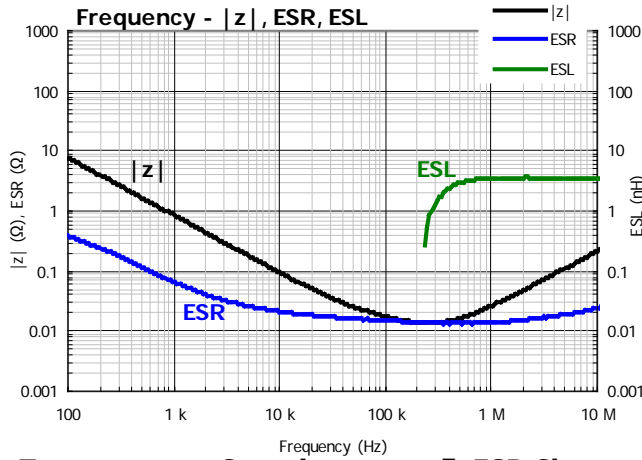


	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9±0.2
P	3.1
K	0.7±0.2

(): Reference Size

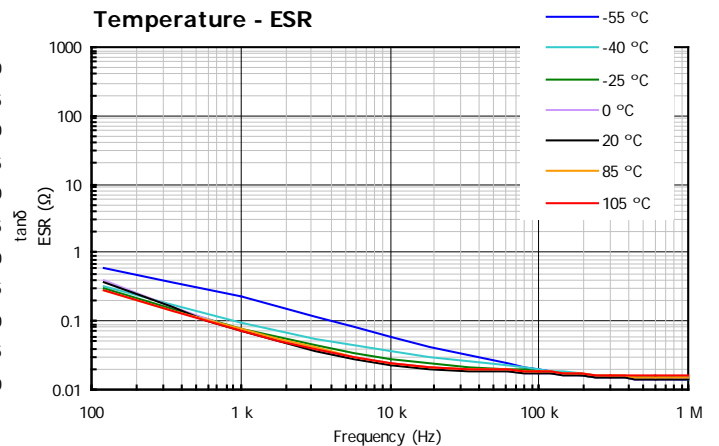
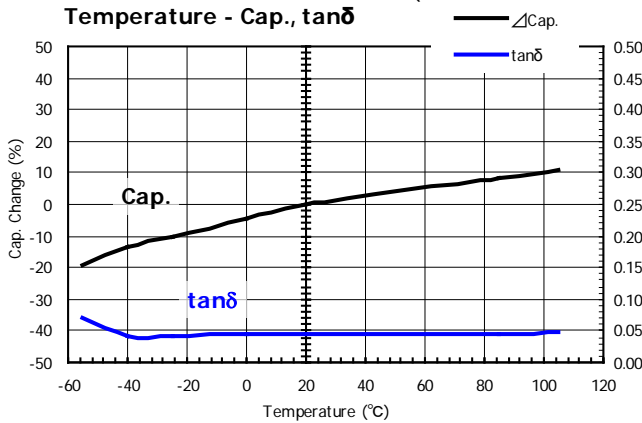
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

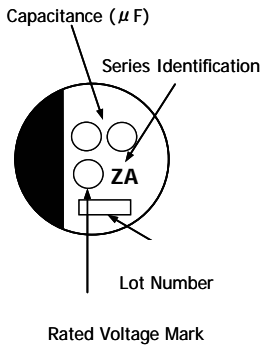
Part Number: EEHZA1E331P

ϕ 10.0×10.2 mm / 25 V / 330 μ F / 105 °C, 10000 h

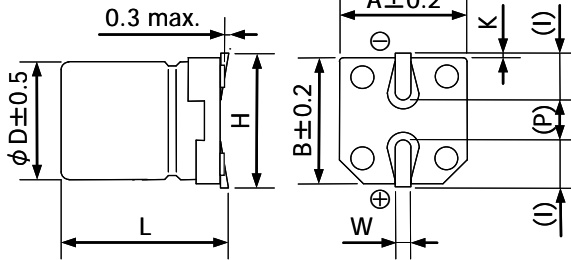
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	330 μ F (at 120 Hz)
Capacitance Tolerance	\pm 20 %

$\tan\delta$	0.14 max. (at 120 Hz)
DC Leakage Current	82.5 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	20 m Ω max. (at 100 kHz)
Ripple Current	2500 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: G

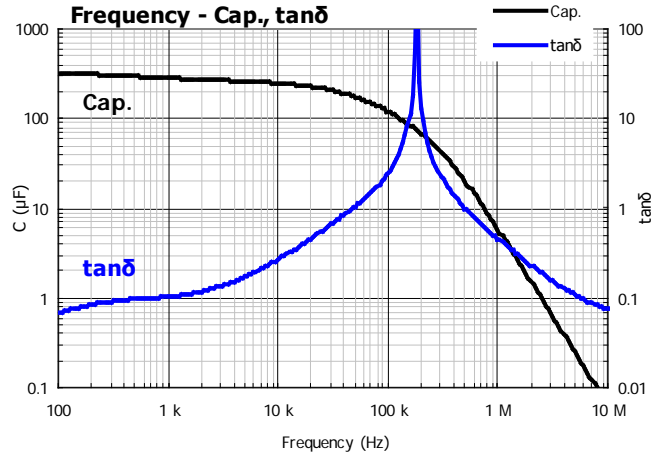
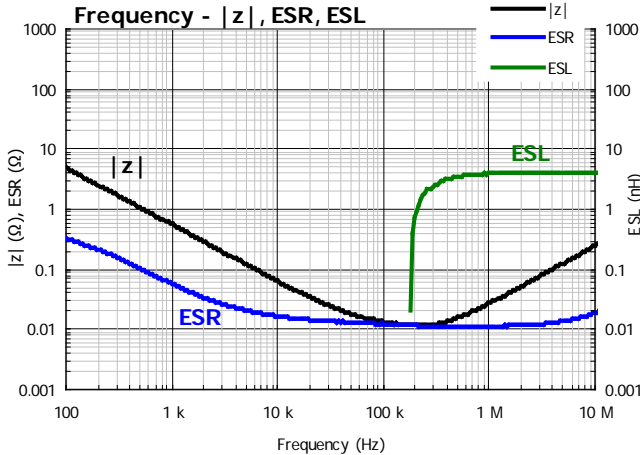


	(mm)
D	10.0
L	10.2 \pm 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 \pm 0.2
P	4.6
K	0.7 \pm 0.2

(): Reference Size

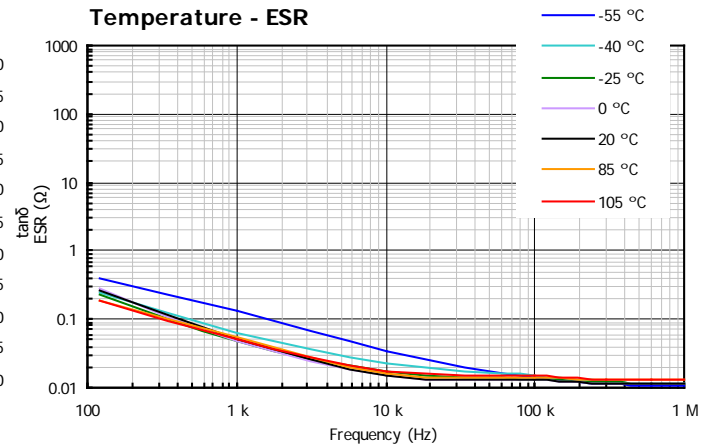
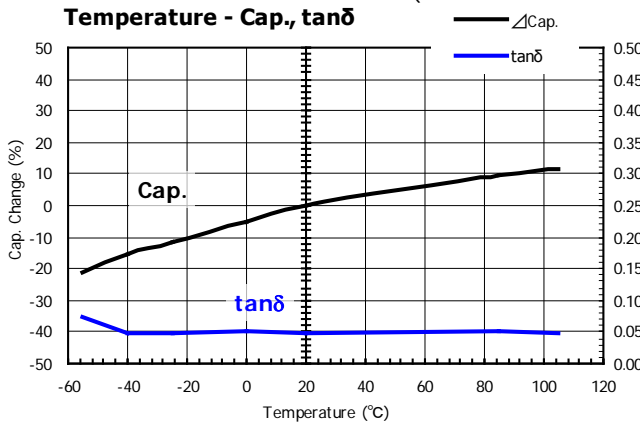
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan\delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, $\tan\delta$, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

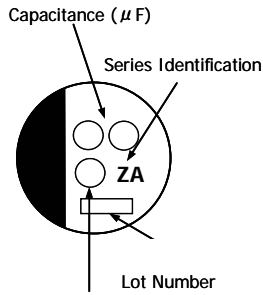
Part Number: EEHZA1V220R

φ5.0×5.8 mm / 35 V / 22 μF / 105 °C, 10000 h

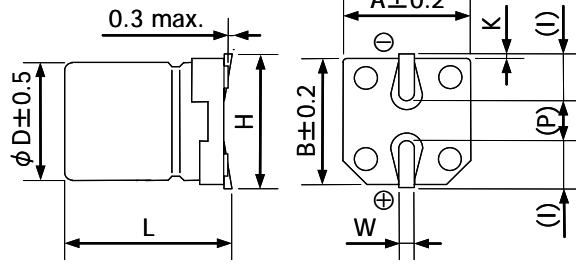
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	7.7 μA (0.01CV) max. (at W.V., After 2 min)
ESR	100 mΩ max. (at 100 kHz)
Ripple Current	900 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: C



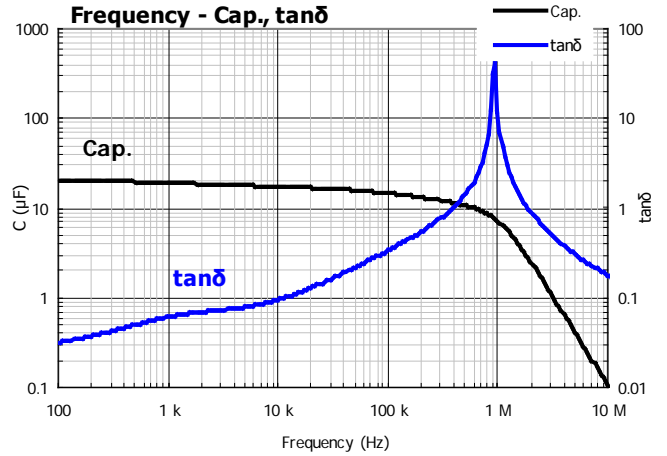
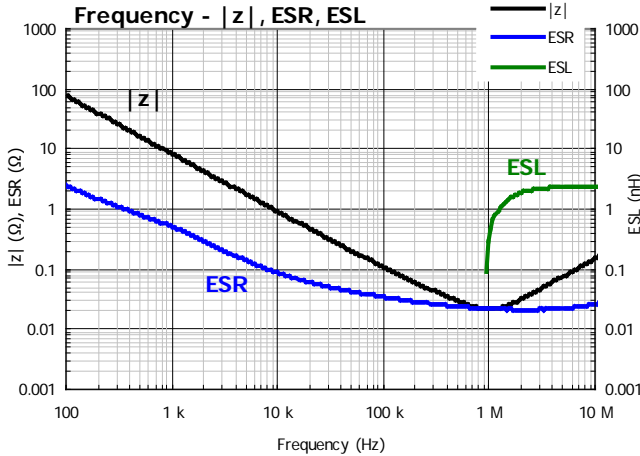
	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
H	6.5 max.
I	2.2
W	0.65±0.10
P	1.5
K	0.35+0.15/-0.20

():

Reference Size

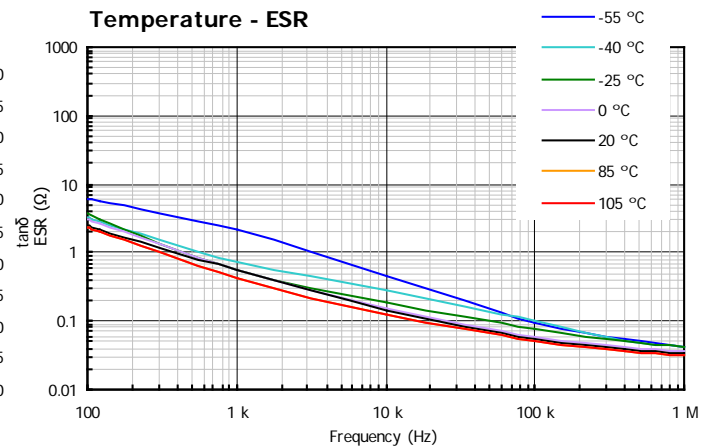
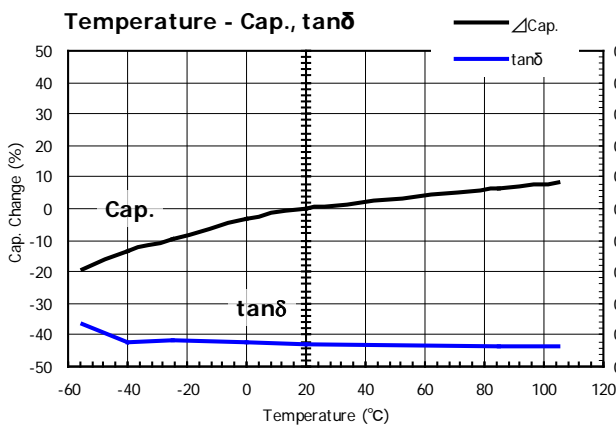
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

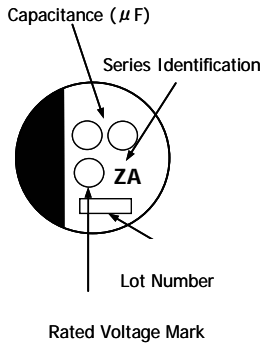
Part Number: EEHZA1V270P

φ 6.3×5.8 mm / 35 V / 27 μF / 105 °C, 10000 h

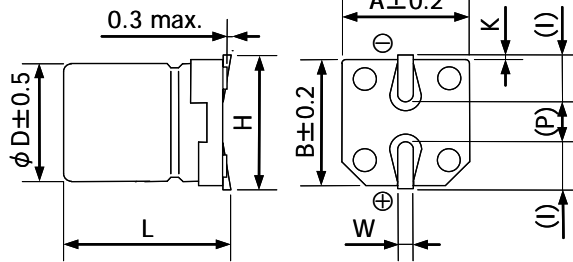
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	27 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	9.4 μA (0.01CV) max. (at W.V., After 2 min)
ESR	60 mΩ max. (at 100 kHz)
Ripple Current	1300 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D

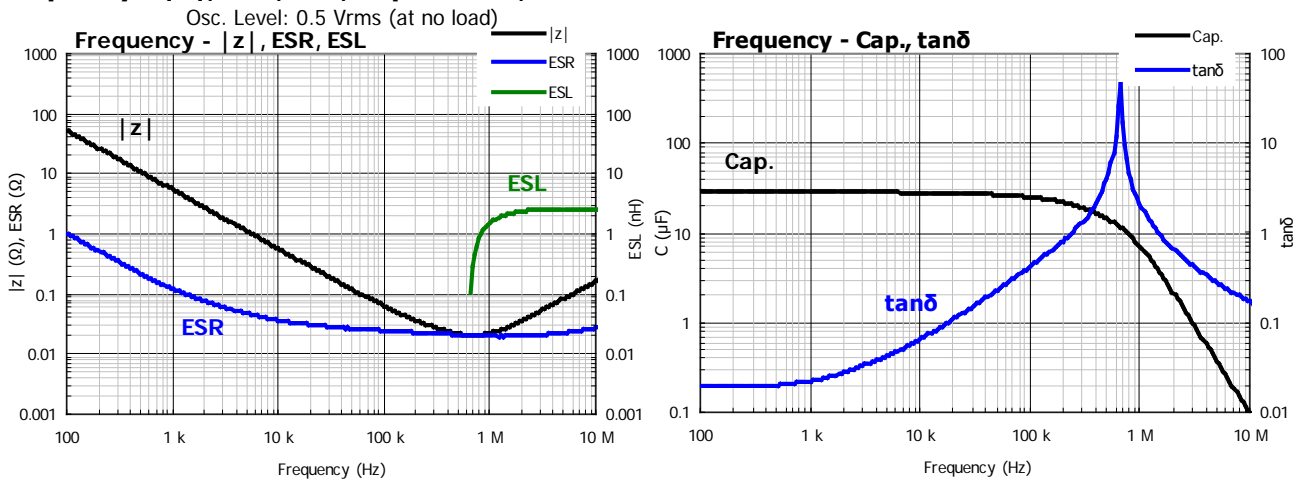


	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

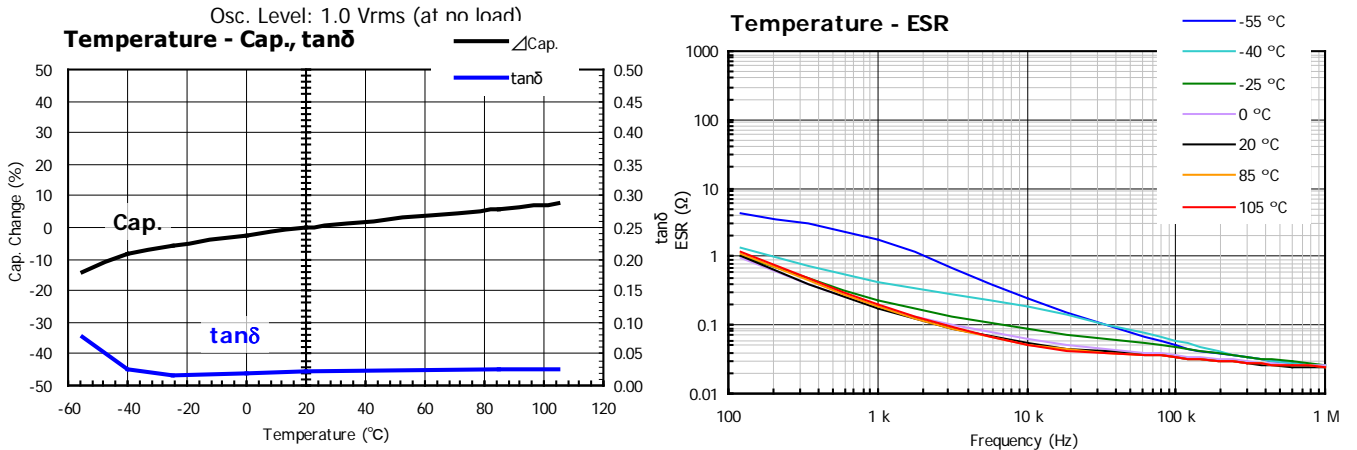
() :

Reference Size

Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics



Temperature - Capacitance, tanδ, ESR Characteristics



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

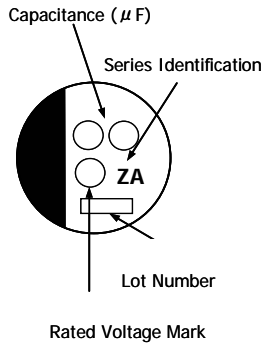
Part Number: EEHZA1V470P

φ 6.3×5.8 mm / 35 V / 47 μF / 105 °C, 10000 h

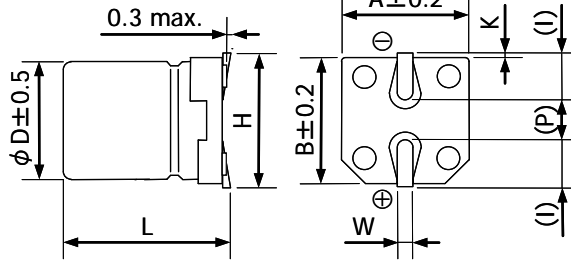
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	47 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	16.4 μA (0.01CV) max. (at W.V., After 2 min)
ESR	60 mΩ max. (at 100 kHz)
Ripple Current	1300 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D

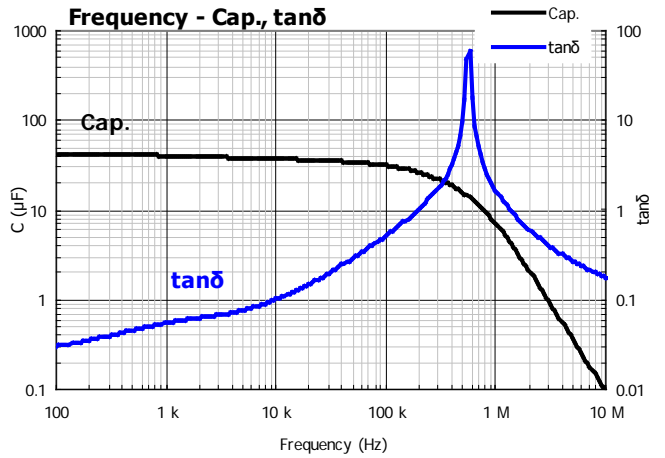
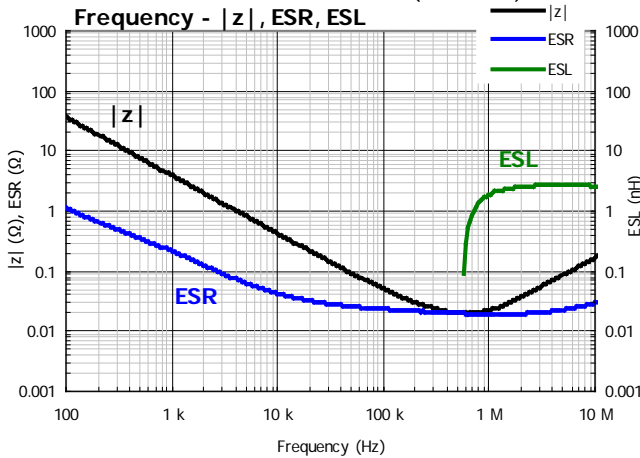


	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

(): Reference Size

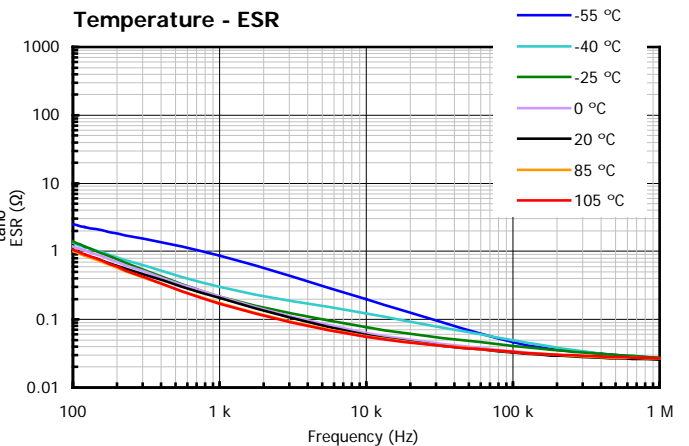
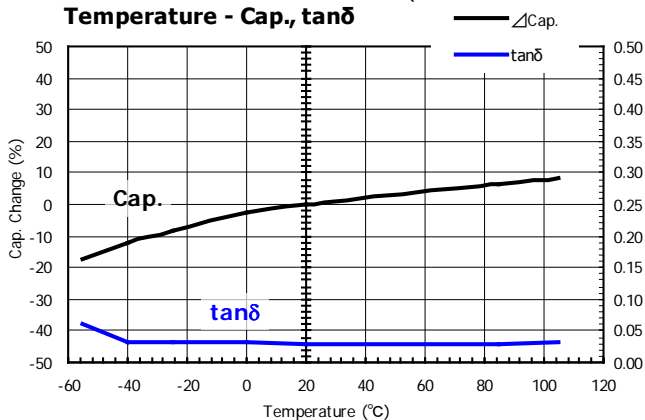
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

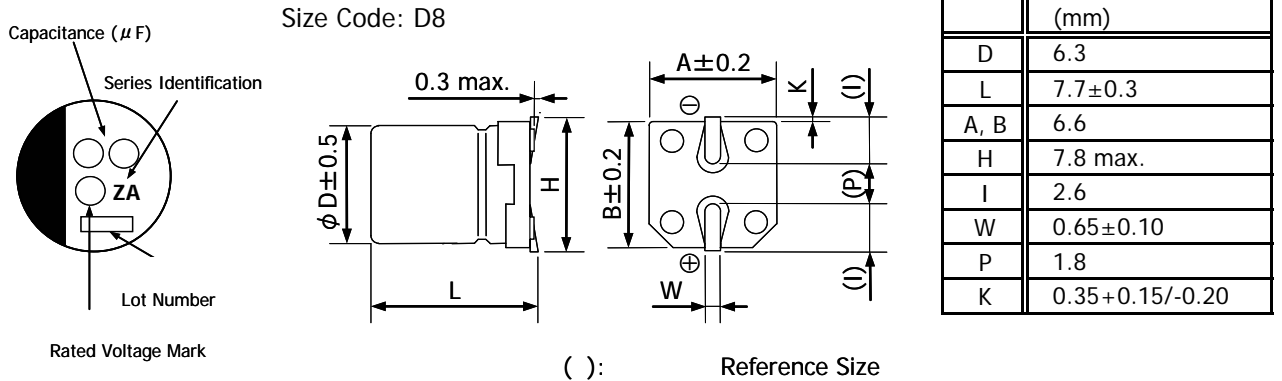
Part Number: EEHZA1V680XP

φ 6.3×7.7 mm / 35 V / 68 μF / 105 °C, 10000 h

Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	68 μF (at 120 Hz)
Capacitance Tolerance	±20 %

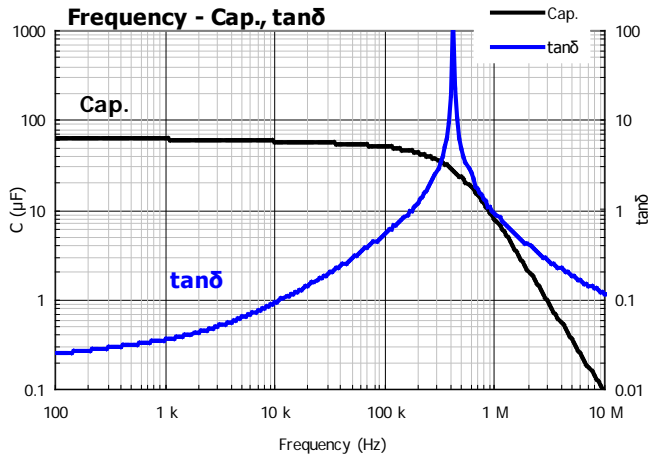
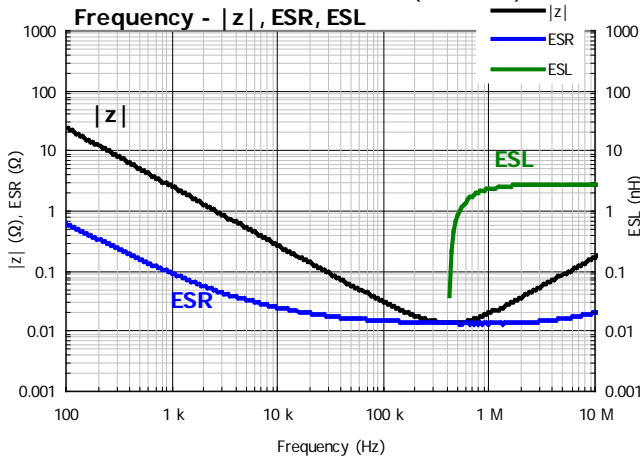
tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	23.8 μA (0.01CV) max. (at W.V., After 2 min)
ESR	35 mΩ max. (at 100 kHz)
Ripple Current	2000 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



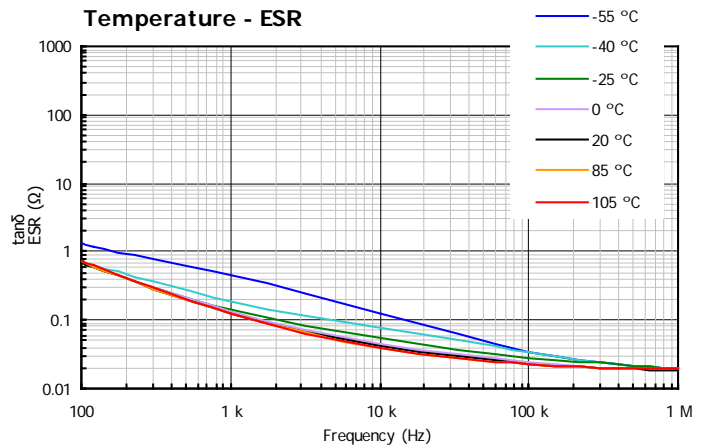
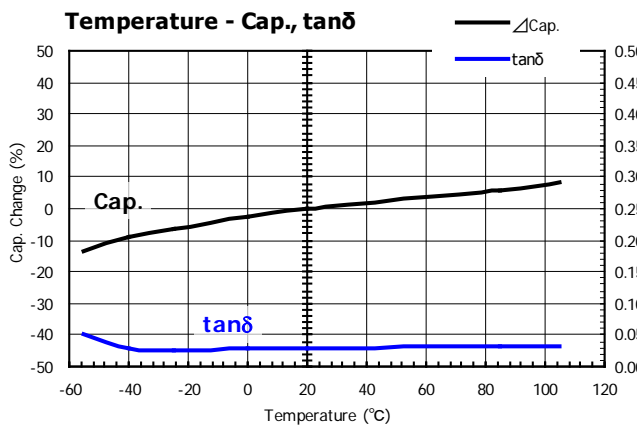
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

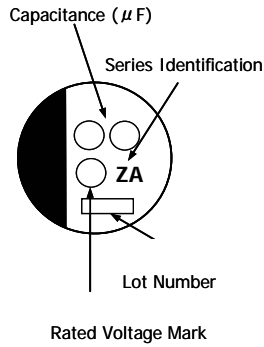
Part Number: EEHZA1V151P

φ 8.0×10.2 mm / 35 V / 150 μF / 105 °C, 10000 h

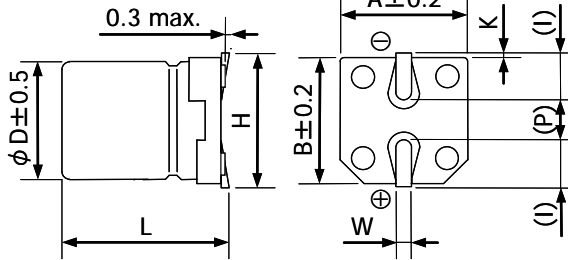
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	150 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	52.5 μA (0.01CV) max. (at W.V., After 2 min)
ESR	27 mΩ max. (at 100 kHz)
Ripple Current	2300 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: F

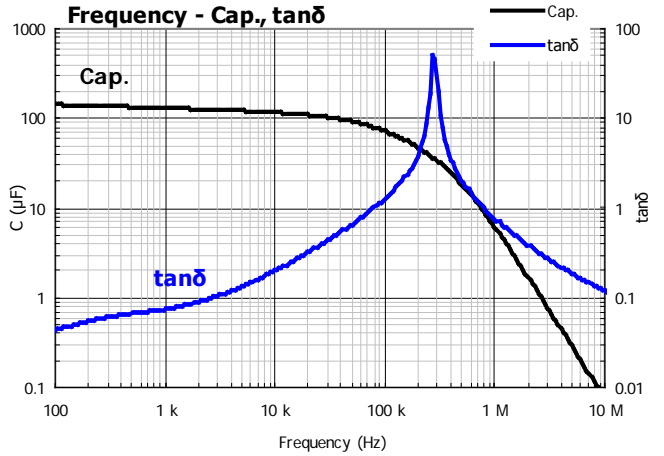
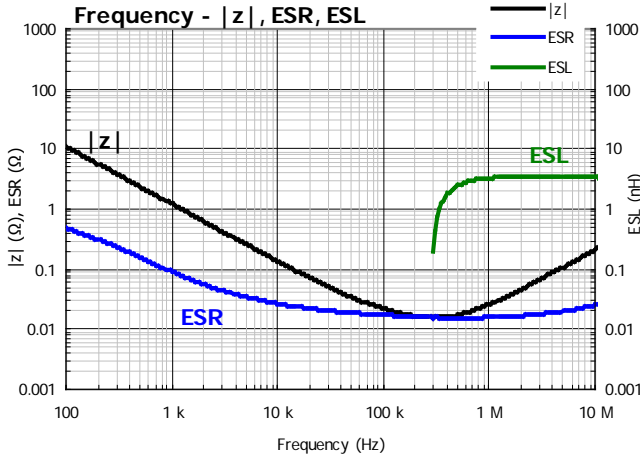


	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9±0.2
P	3.1
K	0.7±0.2

(): Reference Size

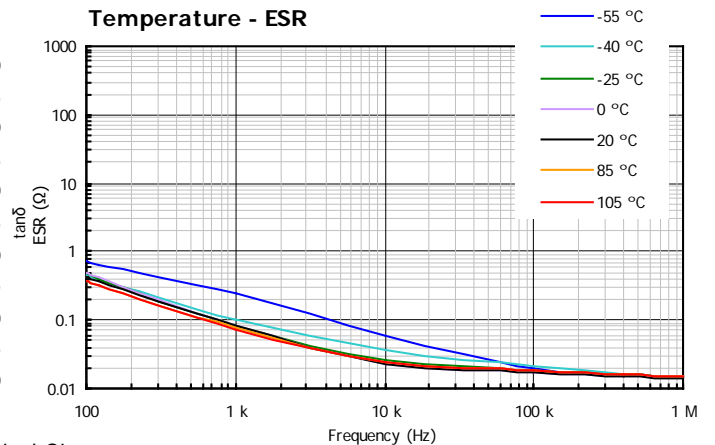
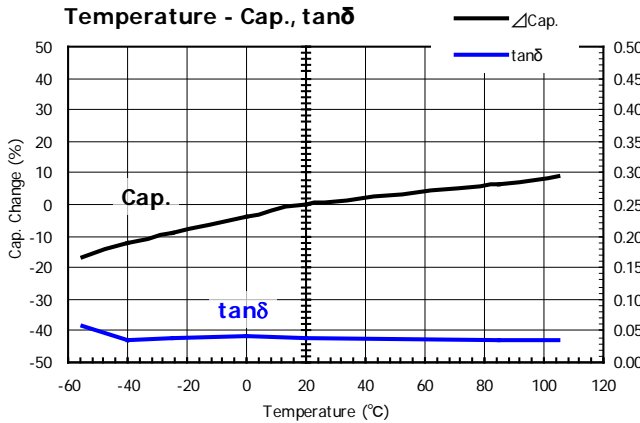
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

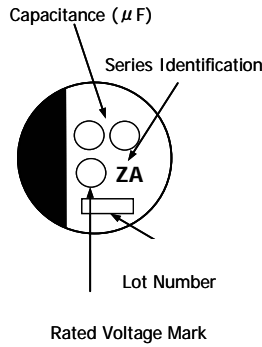
Part Number: EEHZA1V271P

φ 10.0×10.2 mm / 35 V / 270 μF / 105 °C, 10000 h

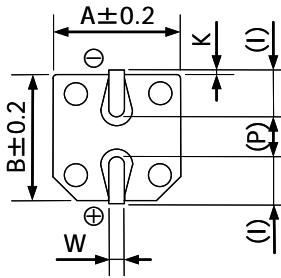
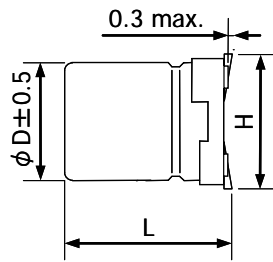
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	270 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	94.5 μA (0.01CV) max. (at W.V., After 2 min)
ESR	20 mΩ max. (at 100 kHz)
Ripple Current	2500 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: G

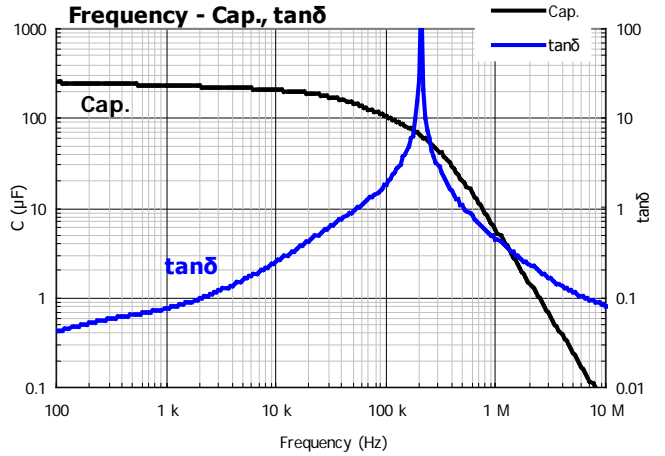
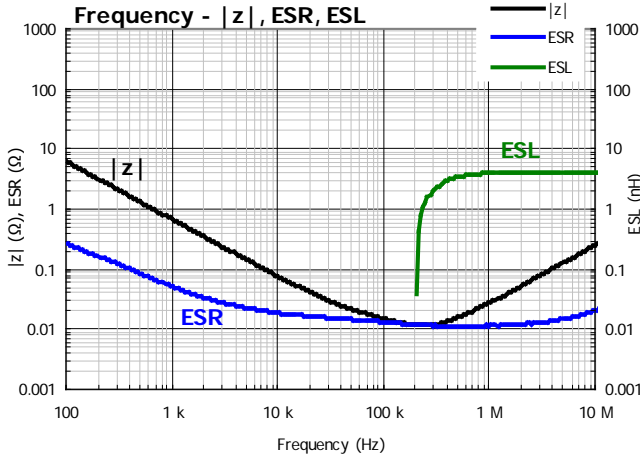


	(mm)
D	10.0
L	10.2±0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9±0.2
P	4.6
K	0.7±0.2

() : Reference Size

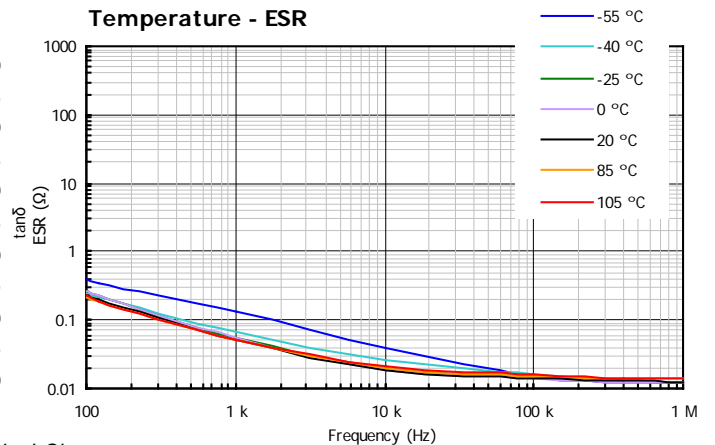
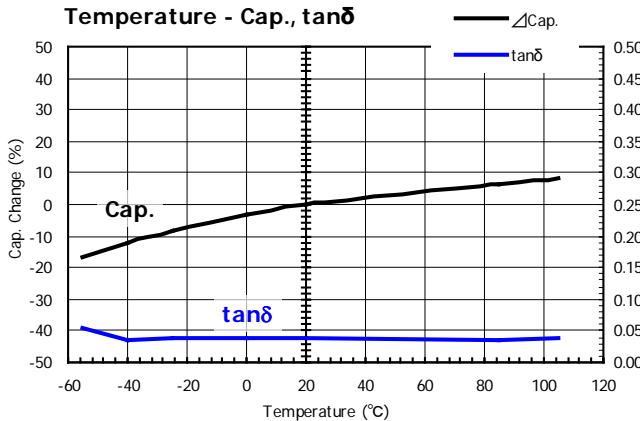
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

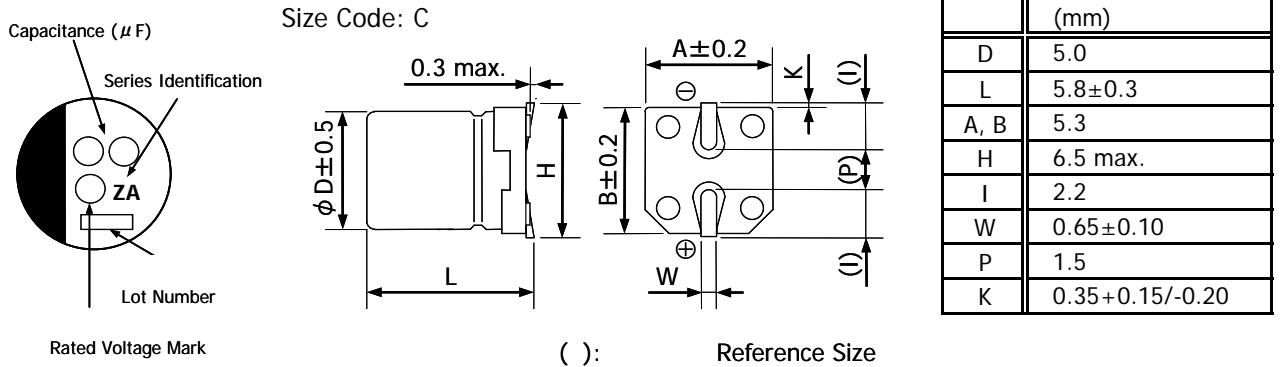
Part Number: EEHZA1H100R

φ5.0×5.8 mm / 50 V / 10 μF / 105 °C, 10000 h

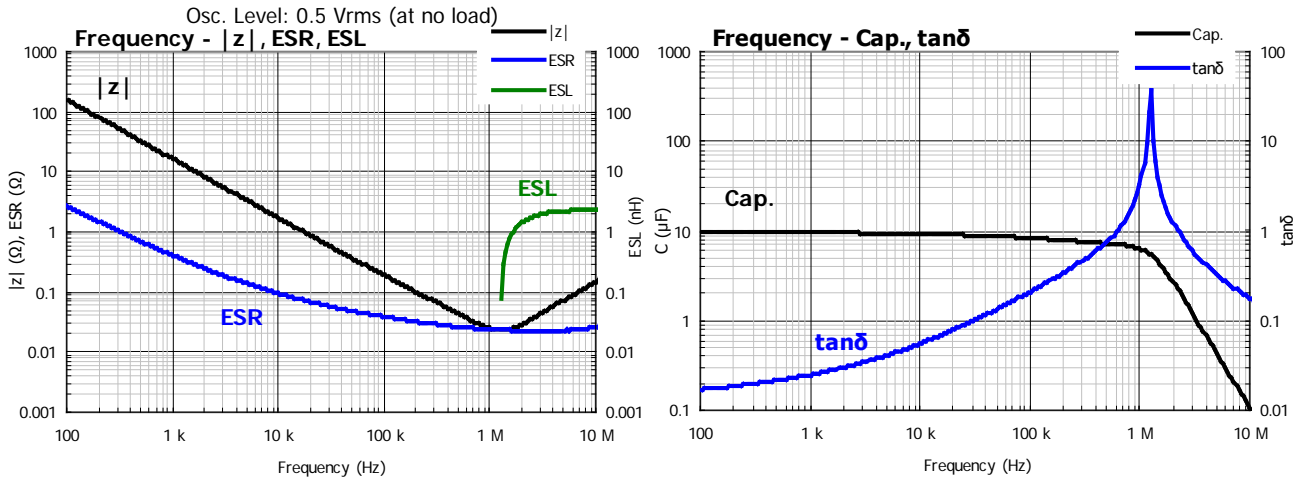
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	10 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.1 max. (at 120 Hz)
DC Leakage Current	5 μA (0.01CV) max. (at W.V., After 2 min)
ESR	120 mΩ max. (at 100 kHz)
Ripple Current	750 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

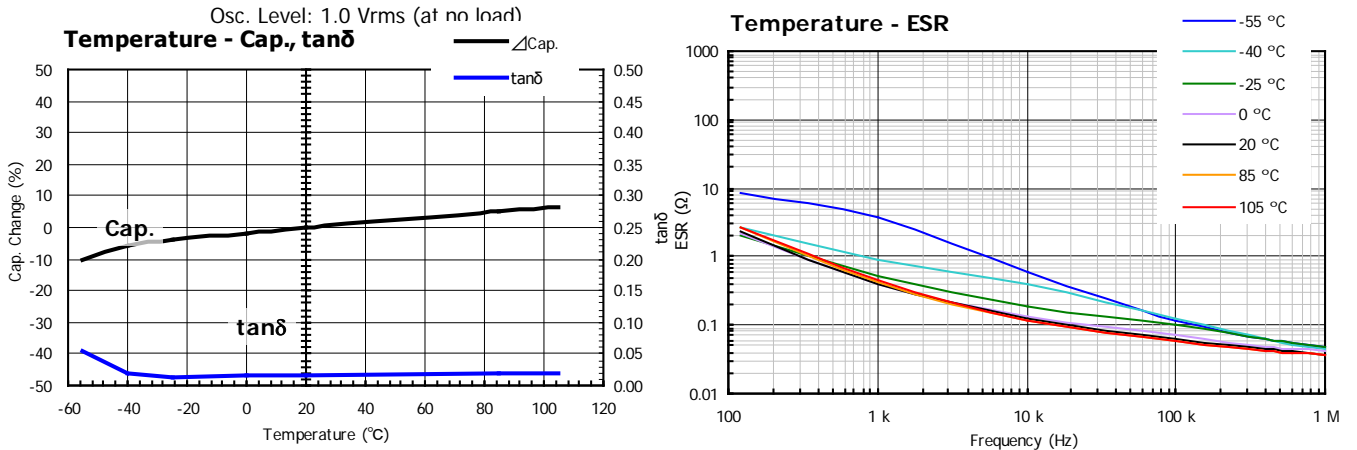
Marking, Dimensions in mm (not to scale)



Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics



Temperature - Capacitance, tanδ, ESR Characteristics



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

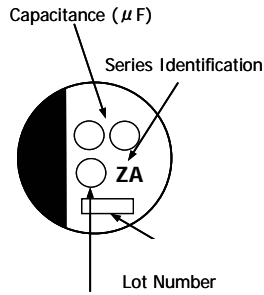
Part Number: EEHZA1H220P

φ 6.3×5.8 mm / 50 V / 22 μF / 105 °C, 10000 h

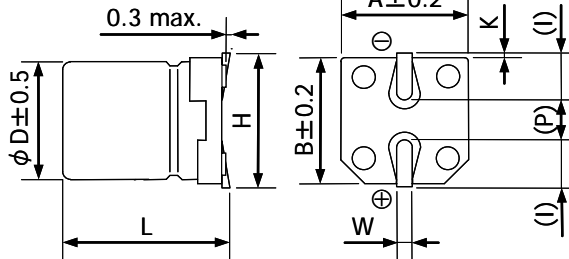
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.10 max. (at 120 Hz)
DC Leakage Current	11 μA (0.01CV) max. (at W.V., After 2 min)
ESR	80 mΩ max. (at 100 kHz)
Ripple Current	1100 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D



	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

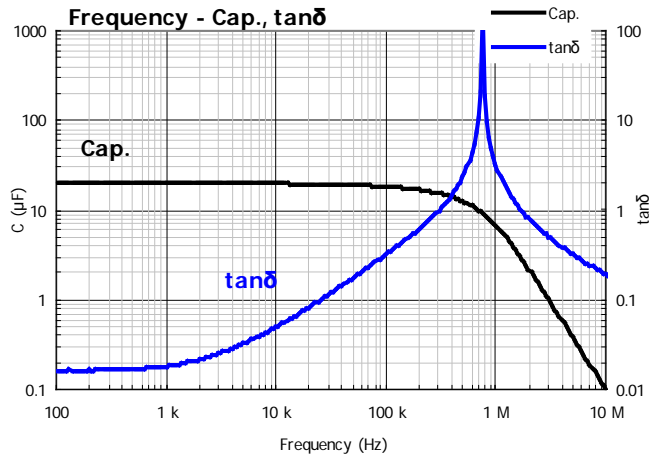
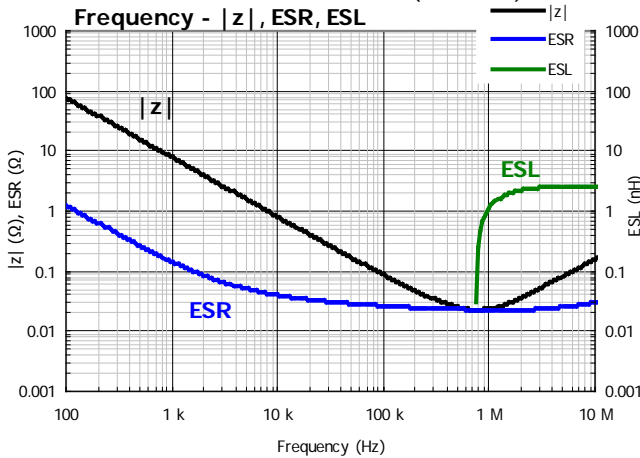
Rated Voltage Mark

() :

Reference Size

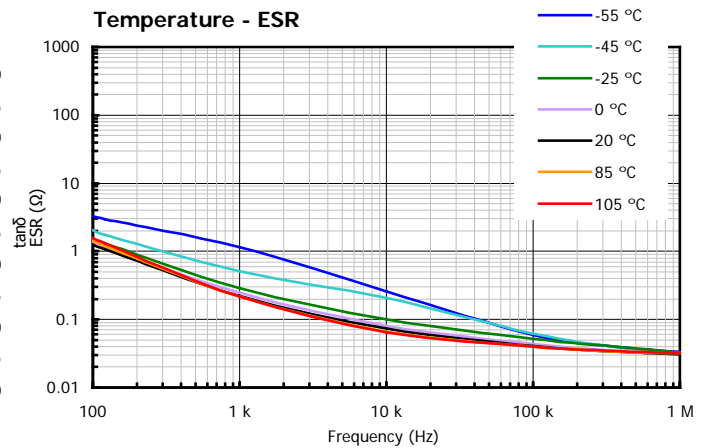
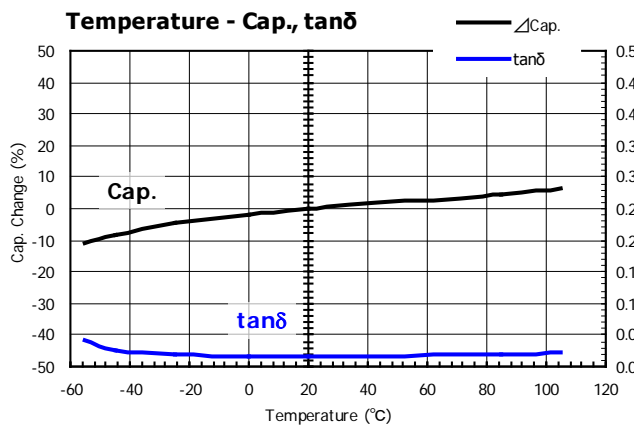
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

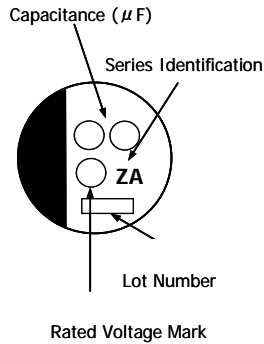
Part Number: EEHZA1H330XP

$\phi 6.3 \times 7.7$ mm / 50 V / 33 μ F / 105 $^{\circ}$ C, 10000 h

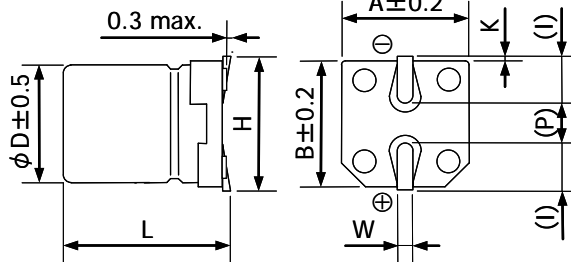
Category Temperature Range	-55 to 105 $^{\circ}$ C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	33 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.10 max. (at 120 Hz)
DC Leakage Current	16.5 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	40 m Ω max. (at 100 kHz)
Ripple Current	1600 mArms max. (at 100 kHz, 105 $^{\circ}$ C)
Endurance	105 $^{\circ}$ C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D8

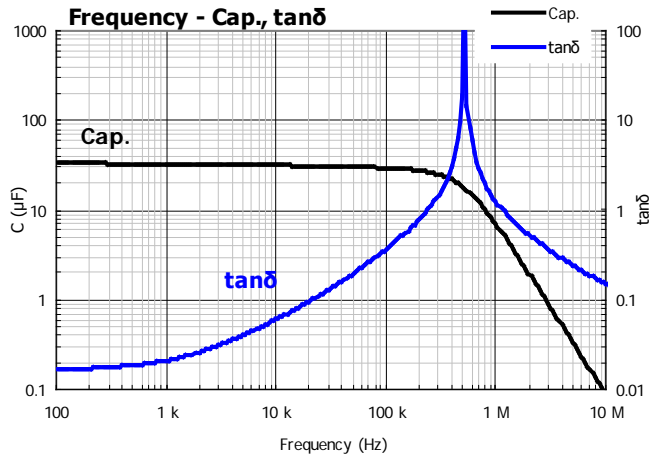
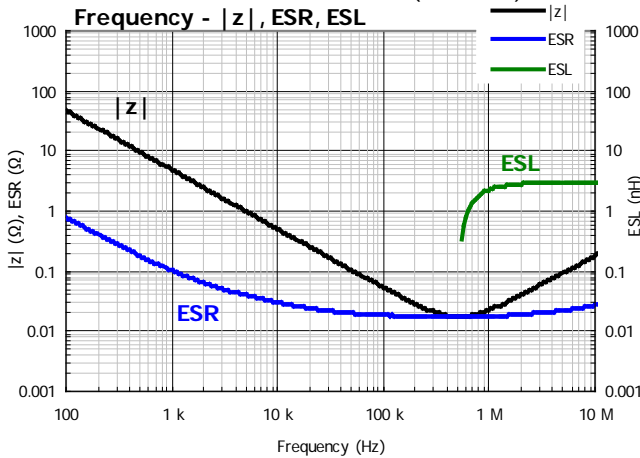


	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	0.35 + 0.15 / - 0.20

(): Reference Size

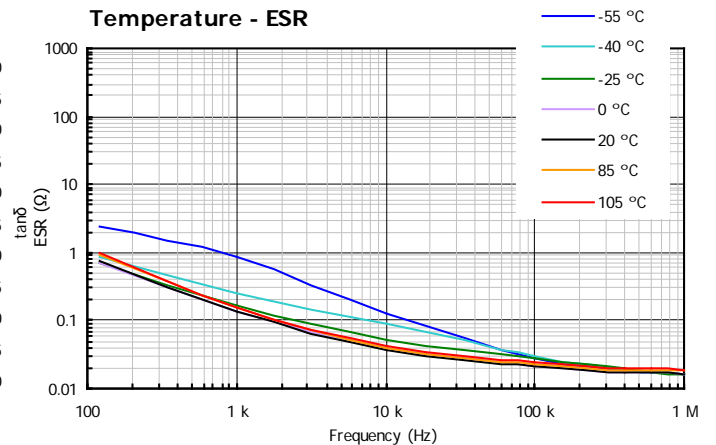
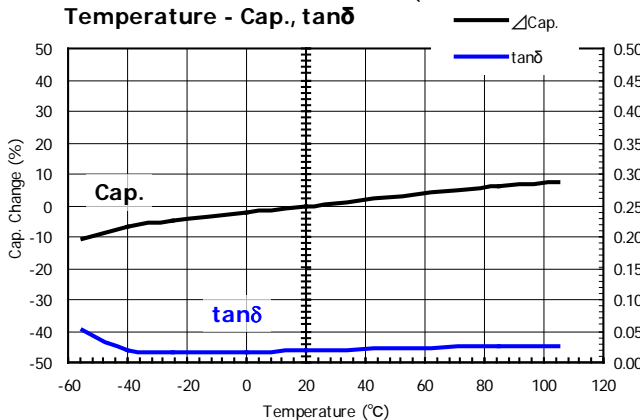
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, $\tan \delta$, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

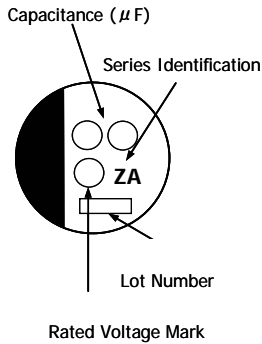
Part Number: EEHZA1H680P

φ 8.0×10.2 mm / 50 V / 68 μF / 105 °C, 10000 h

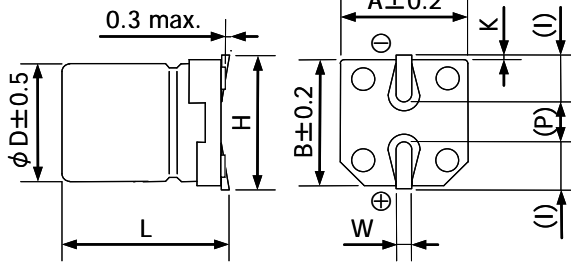
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	68 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.1 max. (at 120 Hz)
DC Leakage Current	34 μA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1800 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



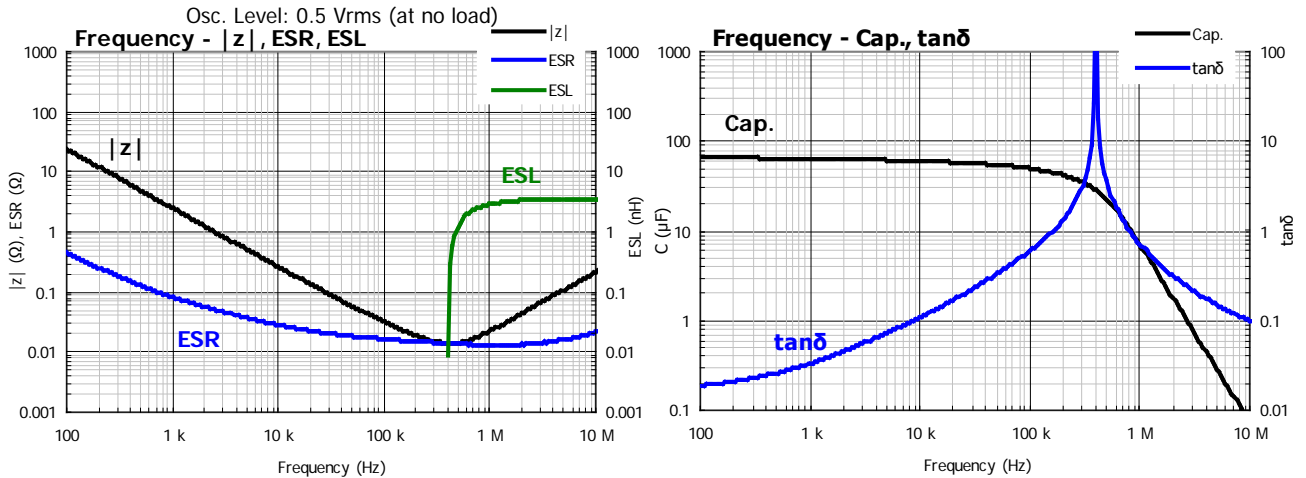
Size Code: F



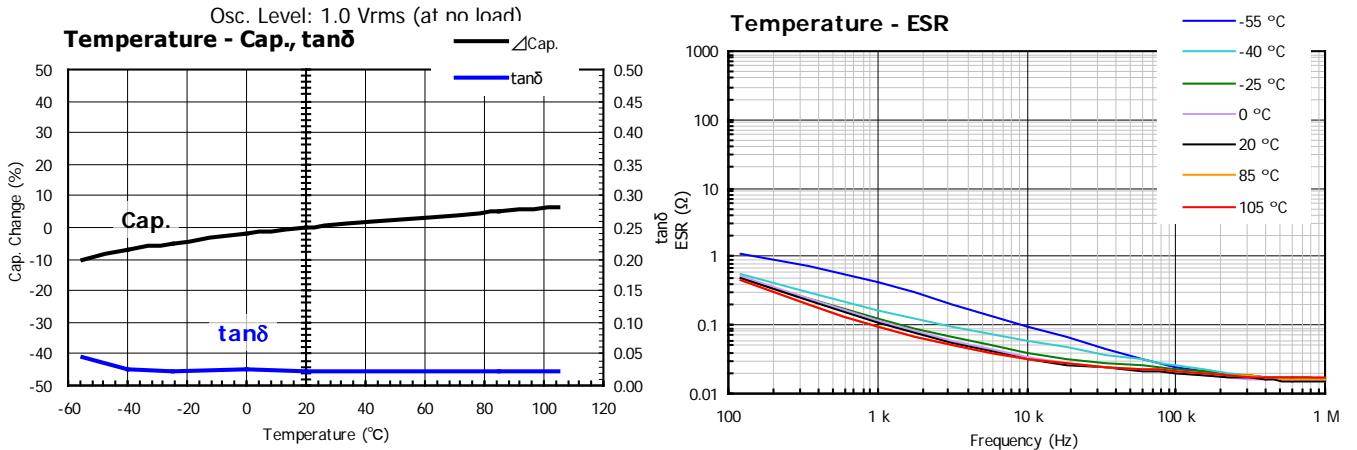
	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9±0.2
P	3.1
K	0.7±0.2

(): Reference Size

Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics



Temperature - Capacitance, tanδ, ESR Characteristics



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

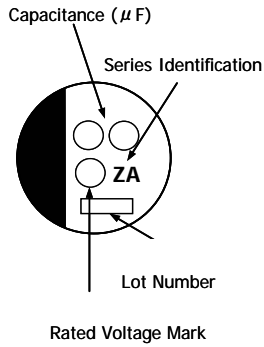
Part Number: EEHZA1H101P

ϕ 10.0×10.2 mm / 50 V / 100 μ F / 105 °C, 10000 h

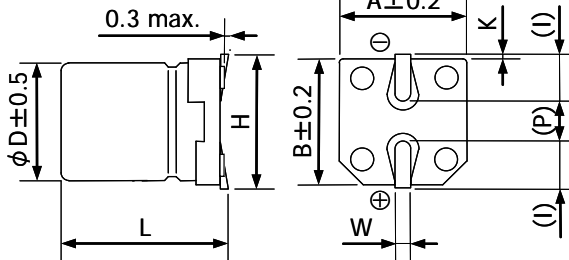
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	100 μ F (at 120 Hz)
Capacitance Tolerance	\pm 20 %

$\tan\delta$	0.1 max. (at 120 Hz)
DC Leakage Current	50 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	28 m Ω max. (at 100 kHz)
Ripple Current	2000 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: G

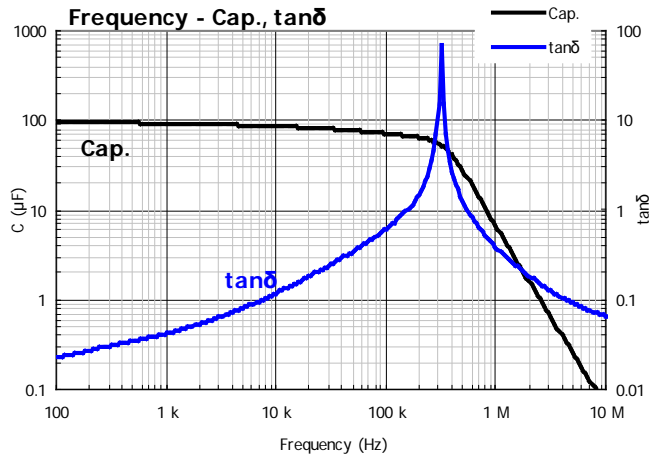
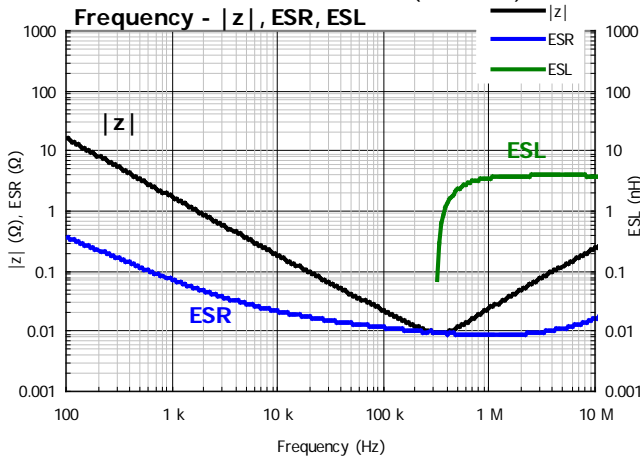


	(mm)
D	10.0
L	10.2 \pm 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 \pm 0.2
P	4.6
K	0.7 \pm 0.2

(): Reference Size

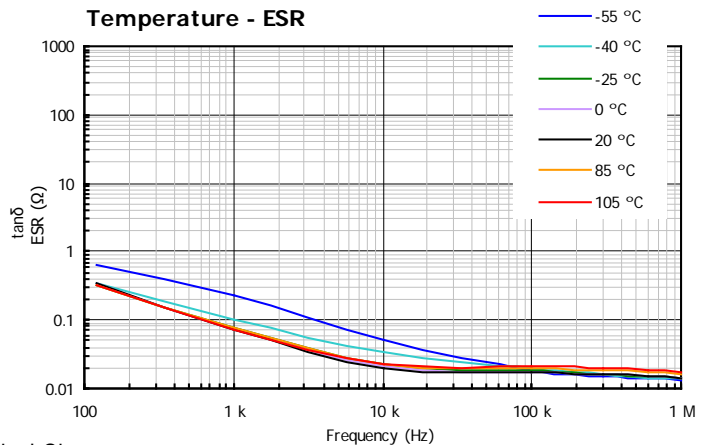
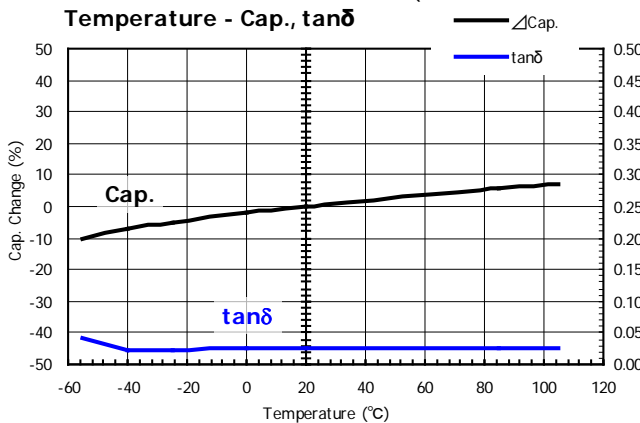
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan\delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, $\tan\delta$, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

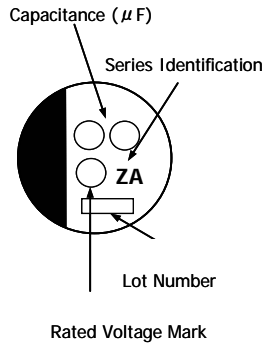
Part Number: EEHZA1J100P

φ 6.3×5.8 mm / 63 V / 10 μF / 105 °C, 10000 h

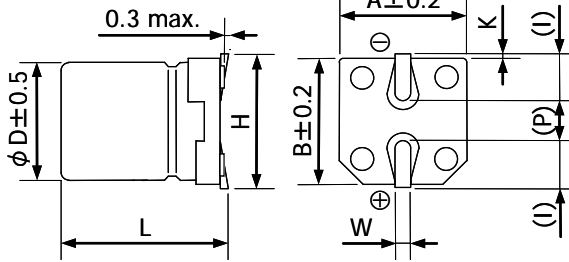
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	10 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	6.3 μA (0.01CV) max. (at W.V., After 2 min)
ESR	120 mΩ max. (at 100 kHz)
Ripple Current	1000 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D

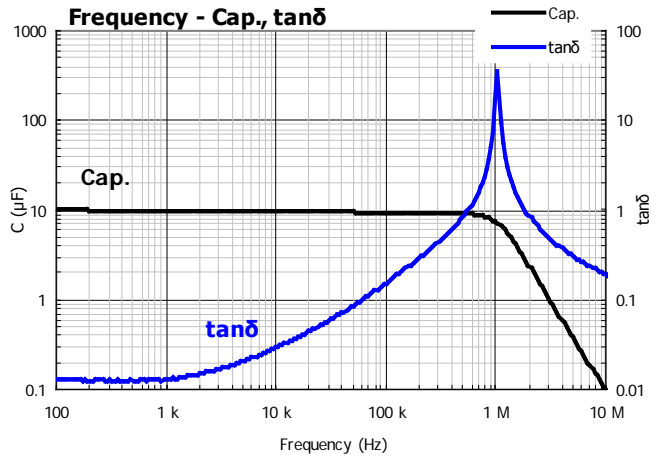
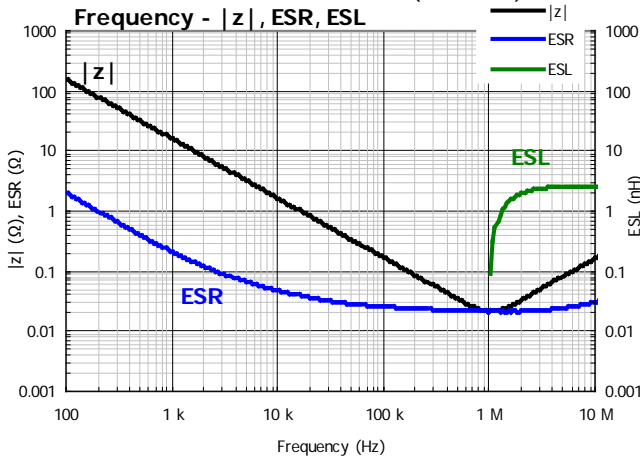


	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65±0.10
P	1.8
K	0.35+0.15/-0.20

(): Reference Size

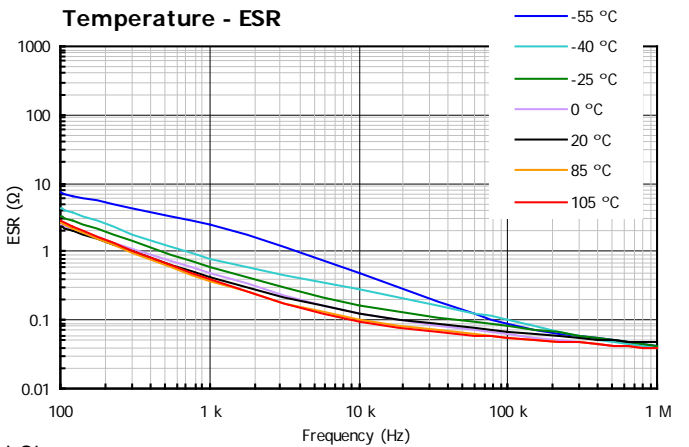
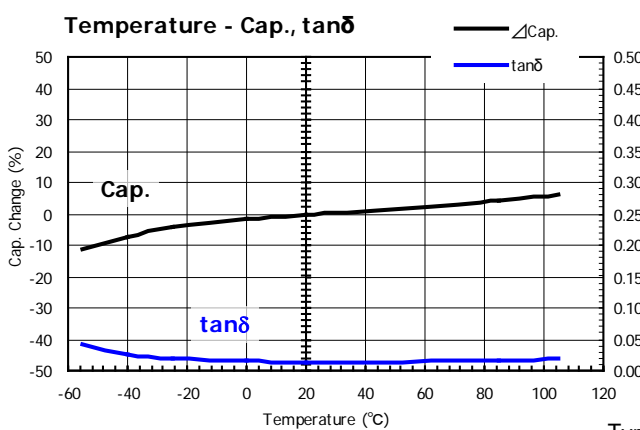
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

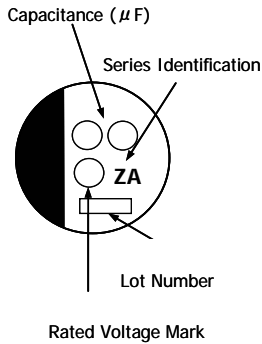
Part Number: EEHZA1J220XP

φ 6.3×7.7 mm / 63 V / 22 μF / 105 °C, 10000 h

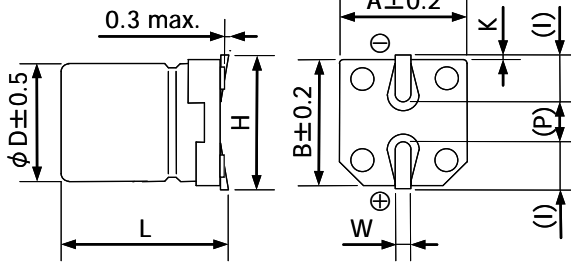
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	13.8 μA (0.01CV) max. (at W.V., After 2 min)
ESR	80 mΩ max. (at 100 kHz)
Ripple Current	1500 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



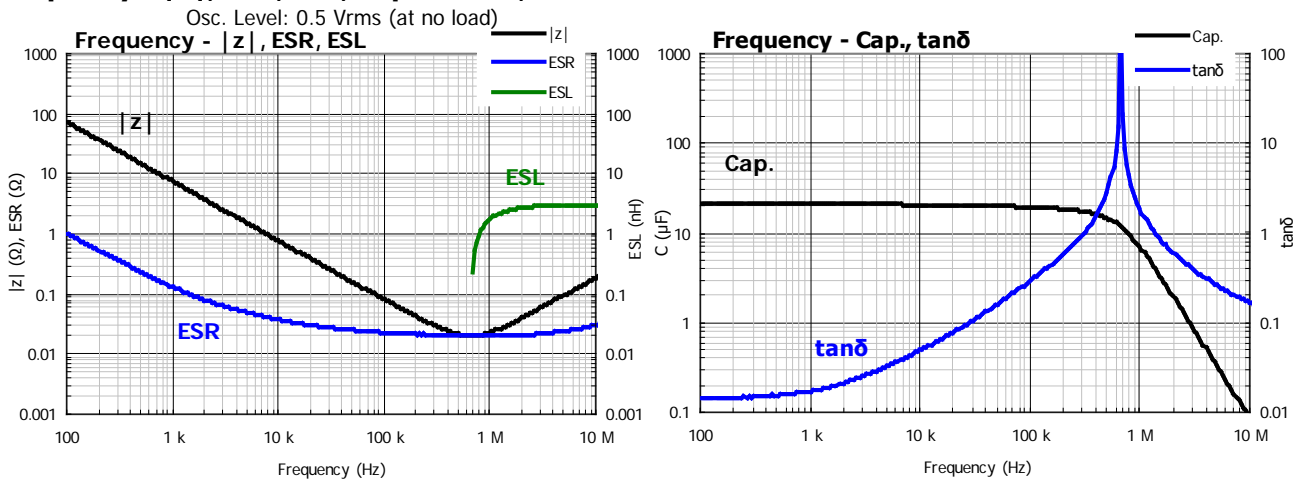
Size Code: D8



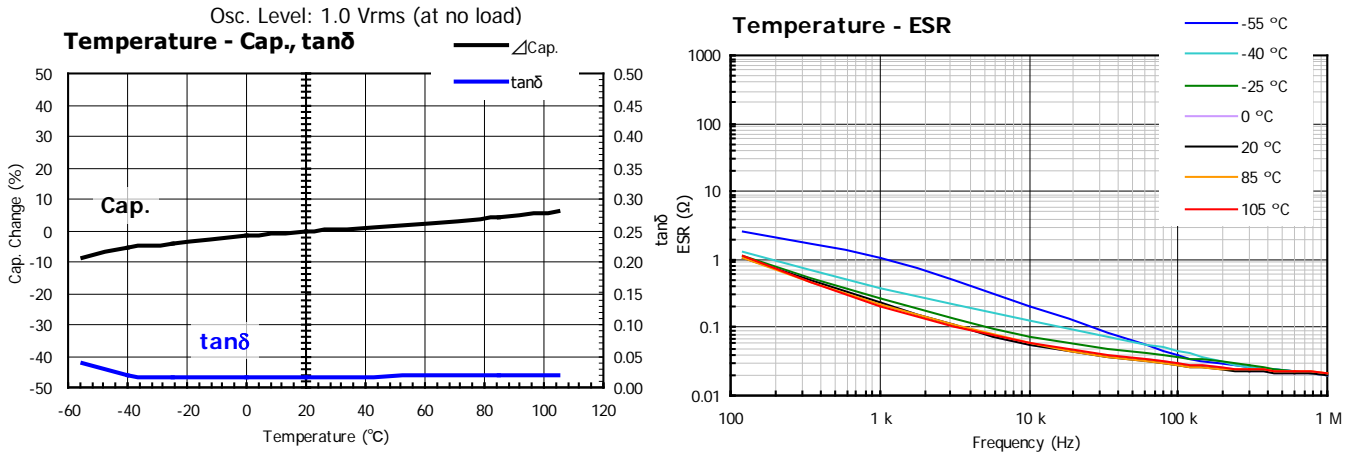
	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	0.35 + 0.15 / - 0.20

(): Reference Size

Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics



Temperature - Capacitance, tanδ, ESR Characteristics



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

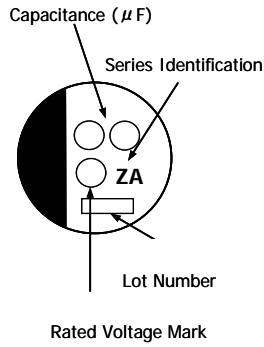
Part Number: EEHZA1J330P

φ 8.0×10.2 mm / 63 V / 33 μF / 105 °C, 10000 h

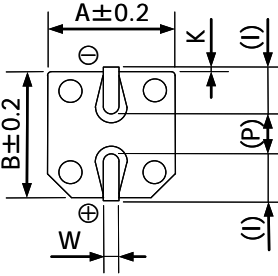
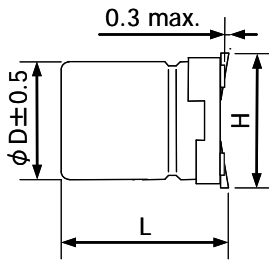
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	33 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	20.7 μA (0.01CV) max. (at W.V., After 2 min)
ESR	40 mΩ max. (at 100 kHz)
Ripple Current	1700 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: F

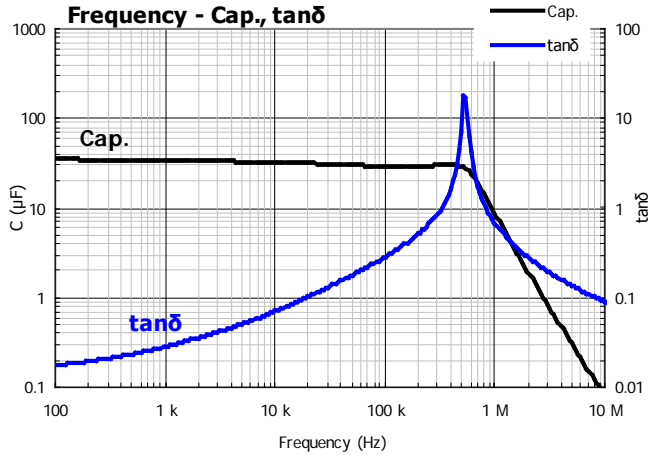
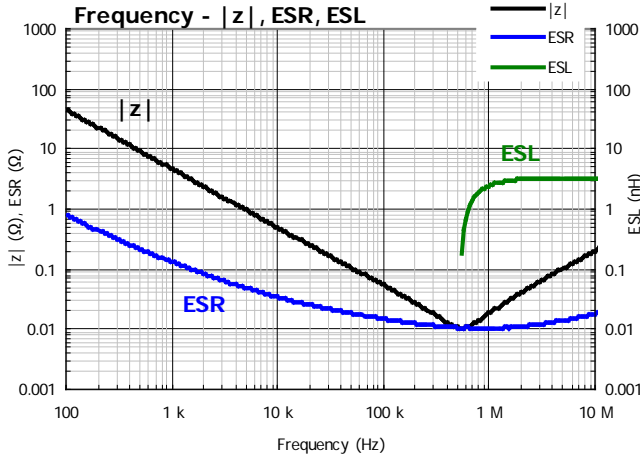


	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9±0.2
P	3.1
K	0.7±0.2

(): Reference Size

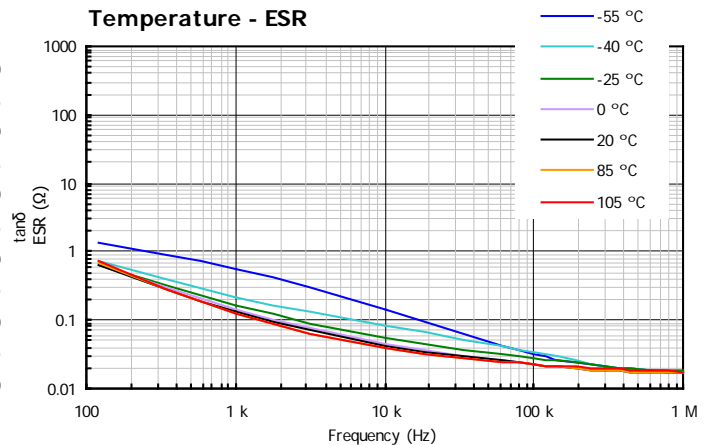
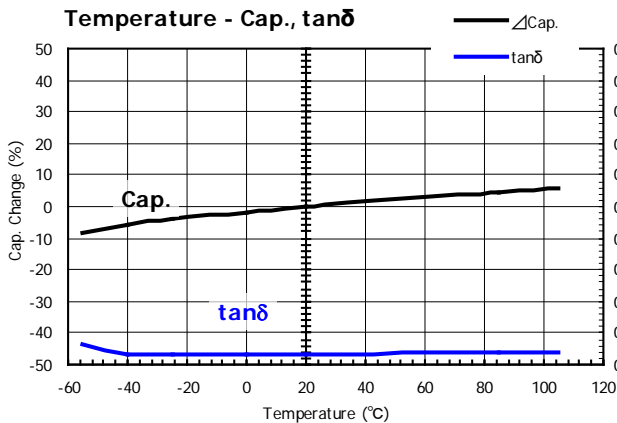
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

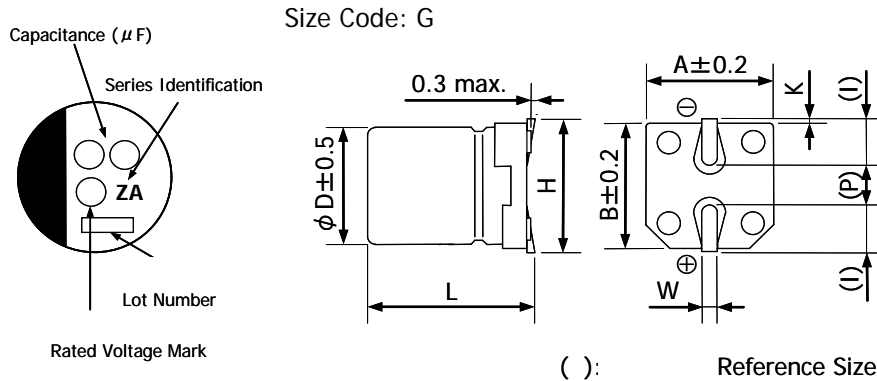
導電性高分子ハイブリッドアルミ電解コンデンサ Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V形 ZAシリーズ / V type ZA series Part Number: EEHZA1J560P

φ 10.0×10.2 mm / 63 V / 56 μF / 105 °C, 10000 h

Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	56 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	35.2 μA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1800 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

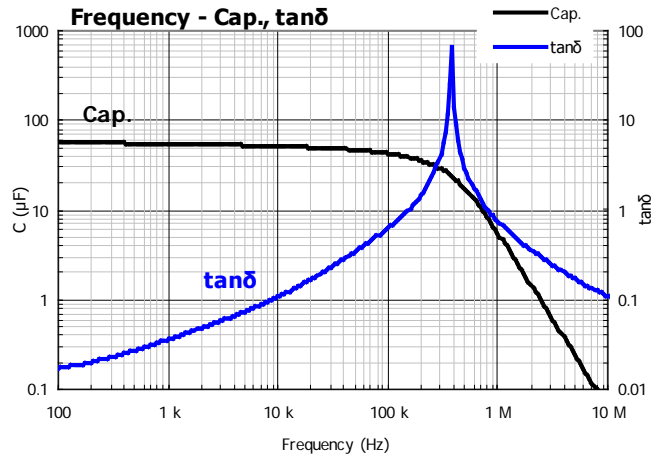
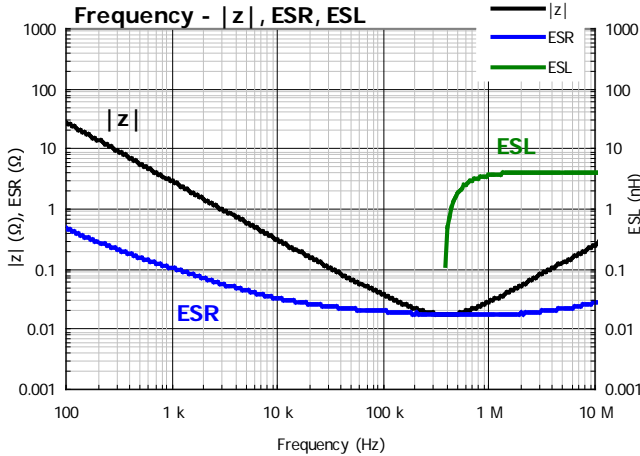
Marking, Dimensions in mm (not to scale)



	(mm)
D	10.0
L	10.2±0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9±0.2
P	4.6
K	0.7±0.2

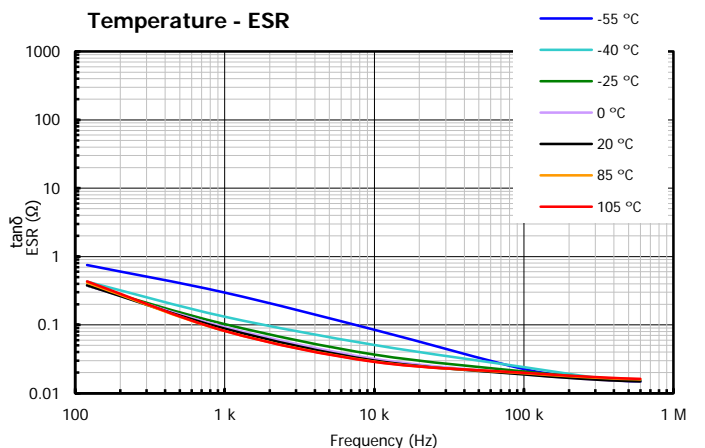
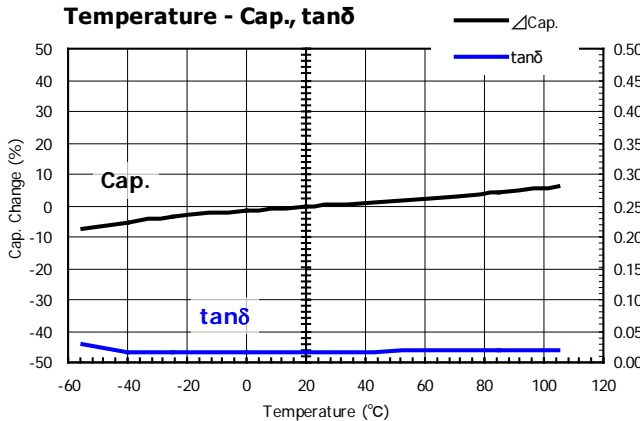
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor V type ZA series

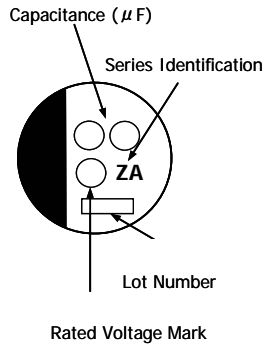
Part Number: EEHZA1K220P

φ 8.0×10.2 mm / 80 V / 22 μF / 105 °C, 10000 h

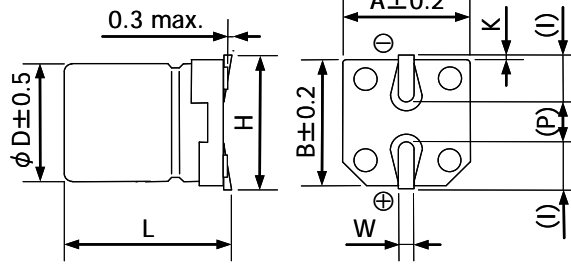
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	17.6 μA (0.01CV) max. (at W.V., After 2 min)
ESR	45 mΩ max. (at 100 kHz)
Ripple Current	1550 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: F

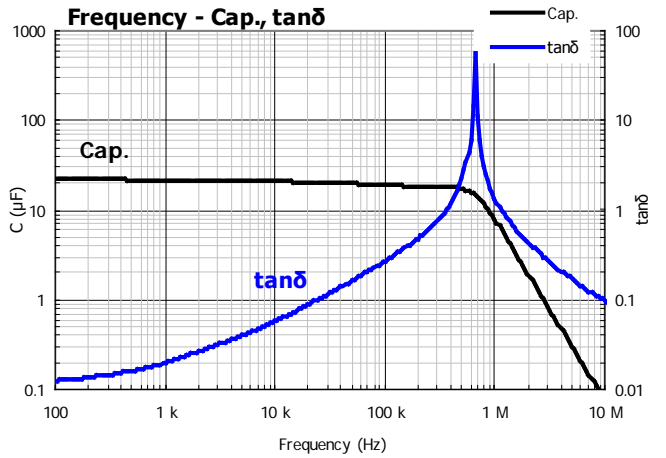
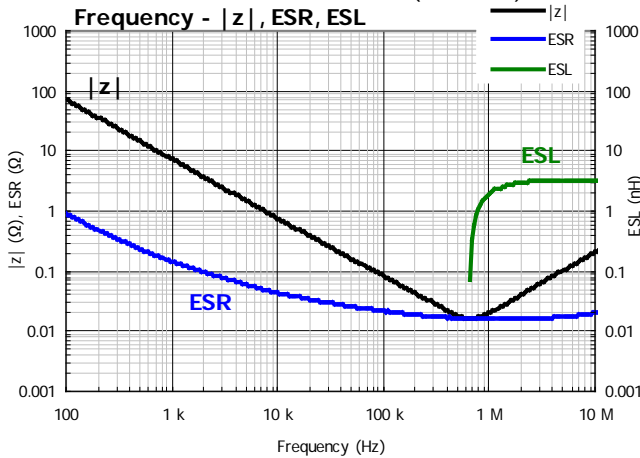


	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9±0.2
P	3.1
K	0.7±0.2

(): Reference Size

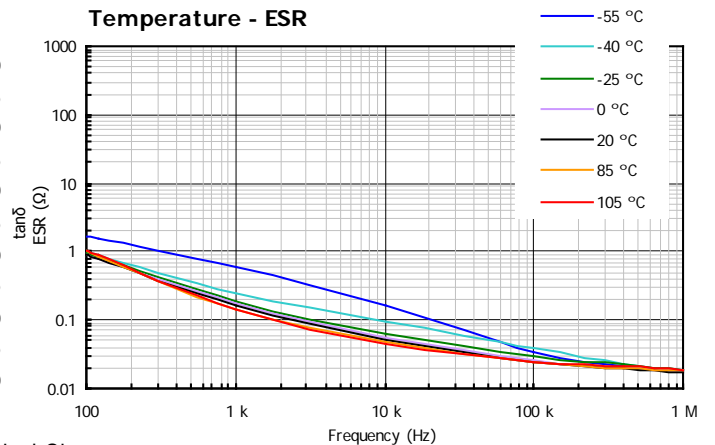
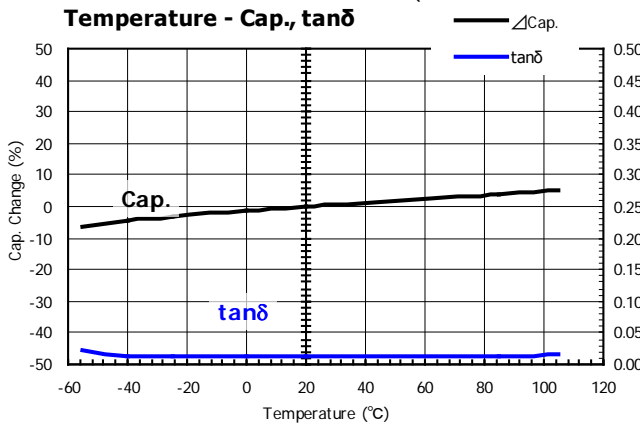
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

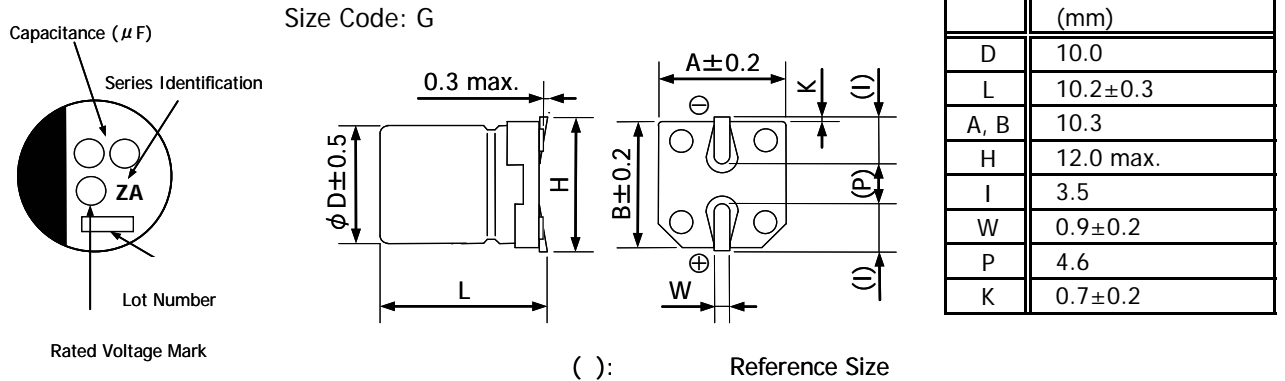
Part Number: EEHZA1K330P

ϕ 10.0×10.2 mm / 80 V / 33 μ F / 105 °C, 10000 h

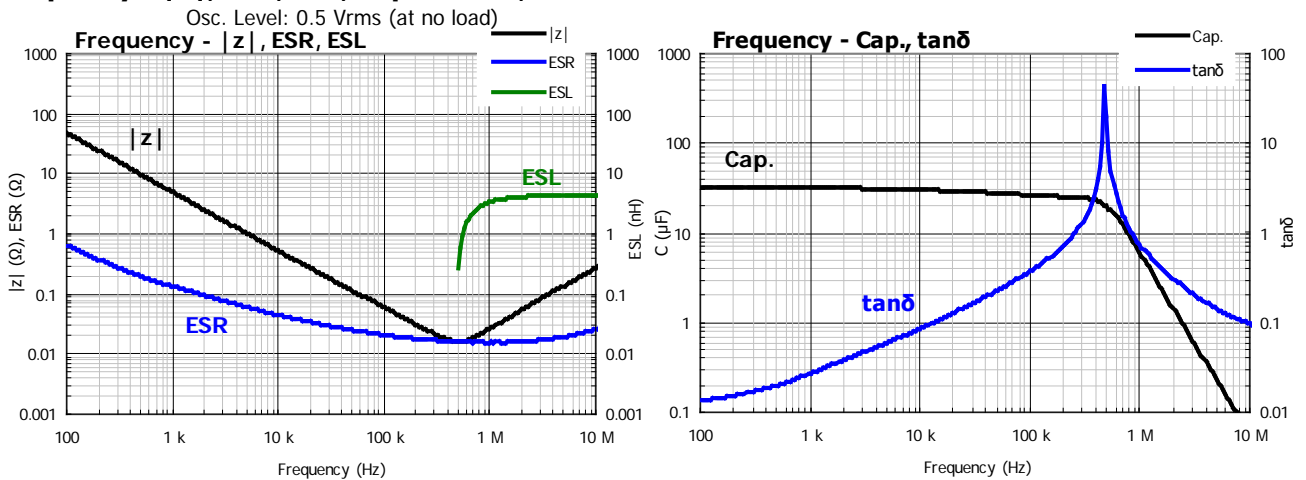
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	33 μ F (at 120 Hz)
Capacitance Tolerance	\pm 20 %

$\tan\delta$	0.08 max. (at 120 Hz)
DC Leakage Current	26.4 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	36 m Ω max. (at 100 kHz)
Ripple Current	1700 mArms max. (at 100 kHz, 105 °C)
Endurance	105 °C, 10000 h

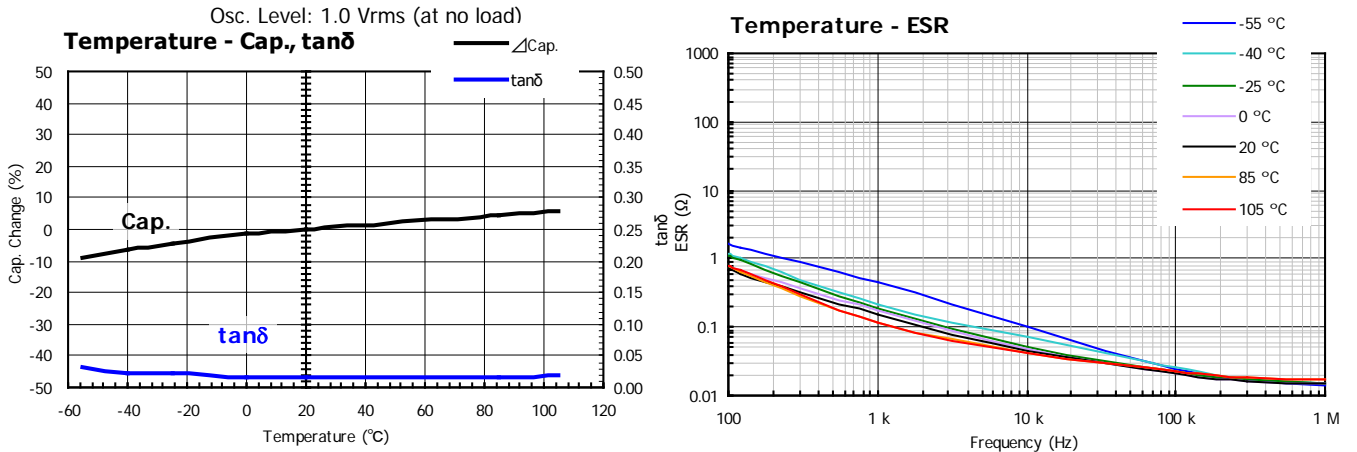
Marking, Dimensions in mm (not to scale)



Frequency - |z|, ESR, ESL, Capacitance, $\tan\delta$ Characteristics



Temperature - Capacitance, $\tan\delta$, ESR Characteristics



Typical Curve

M E M O

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

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