



Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

Technical Data ZA series



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

industrial.panasonic.com/ww/products/capacitors/polymer-capacitors/hybrid-aluminum

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

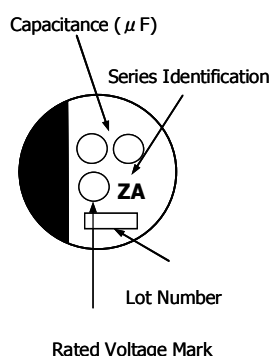
Part Number: EEHZA1E330R

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

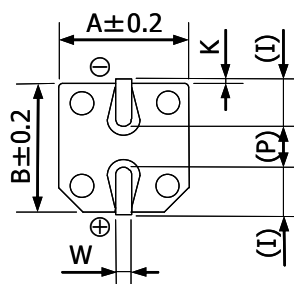
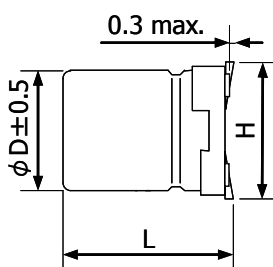
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	33 μF (at 120 Hz)
Capacitance Tolerance	±20 %

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

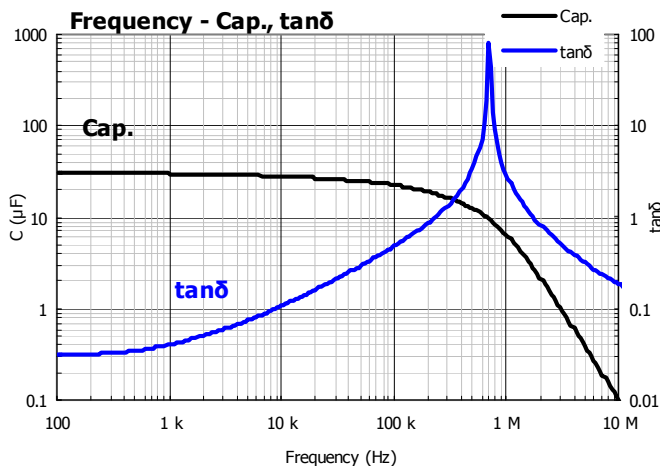
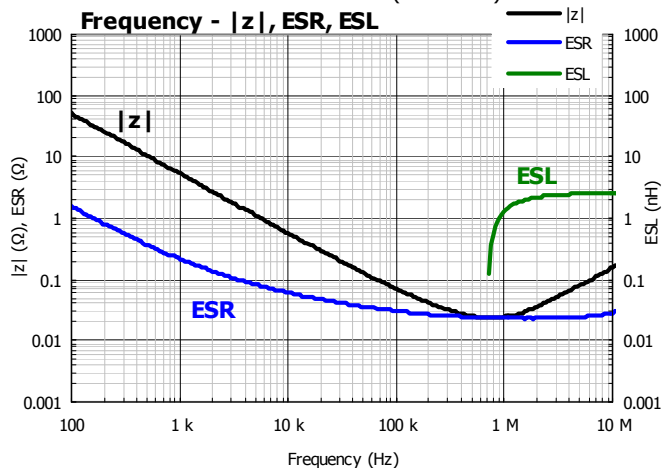


	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
H	6.5 max.
I	2.2
W	0.65±0.10
P	1.5
K	0.35+0.15/-0.20

(): Reference Size

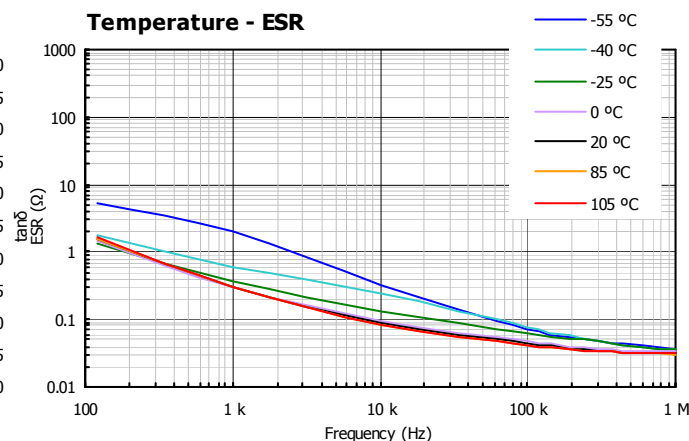
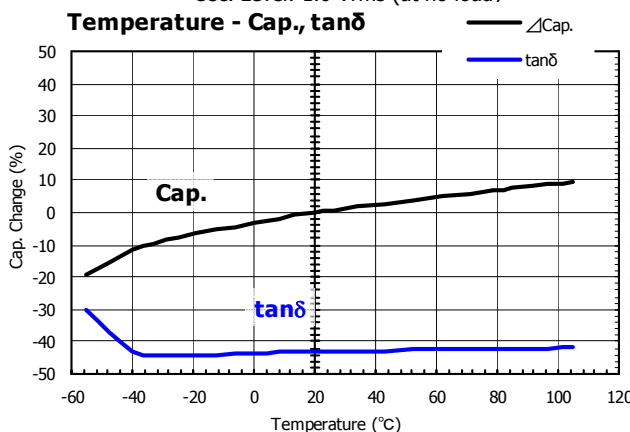
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

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

ZA series

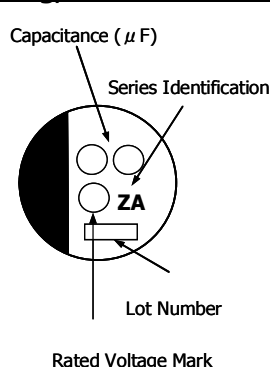
Part Number: EEHZA1E560P

$\phi 6.3 \times 5.8$ mm / 25 V / 56 μ F / 105 °C, 10000 h

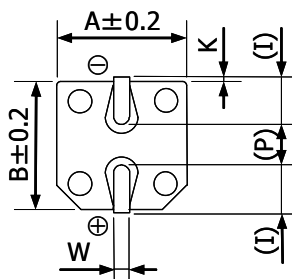
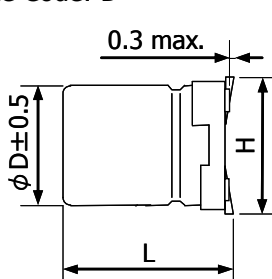
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	56 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.14 max. (at 120 Hz)
DC Leakage Current	14 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	50 m Ω 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



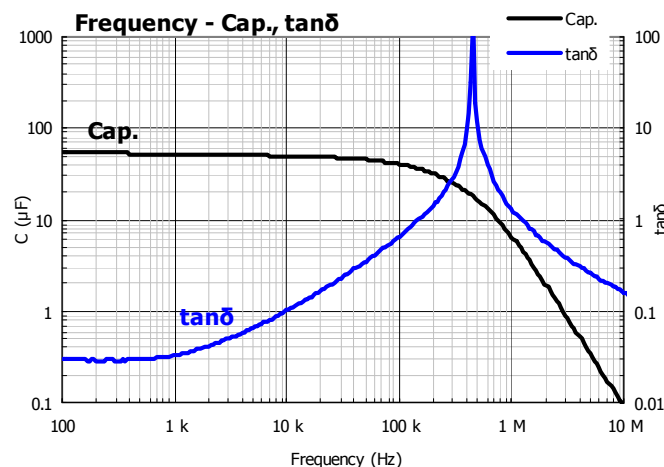
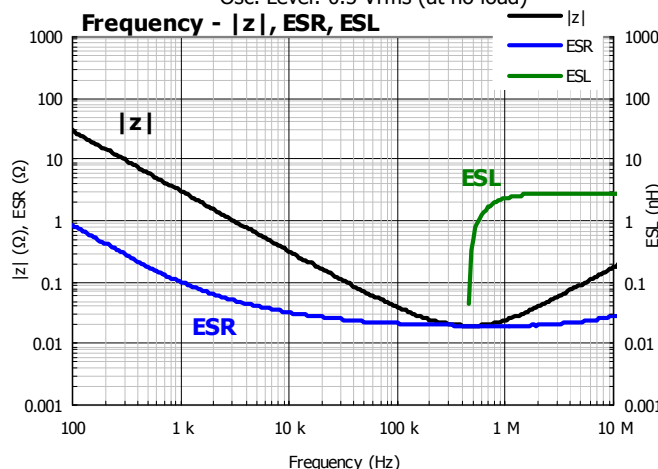
	(mm)
D	6.3
L	5.8 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

() :

Reference Size

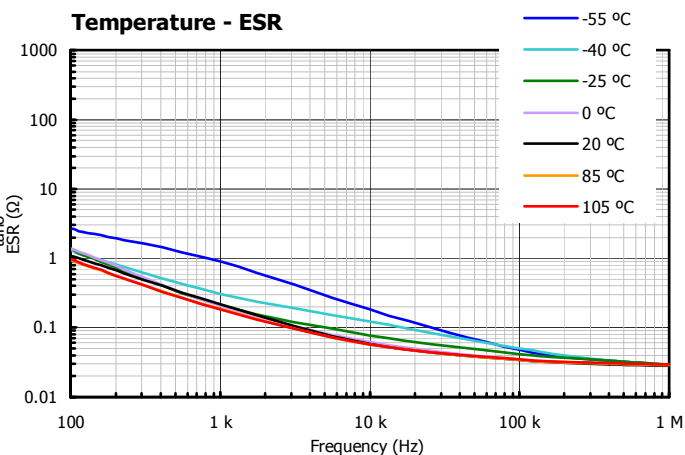
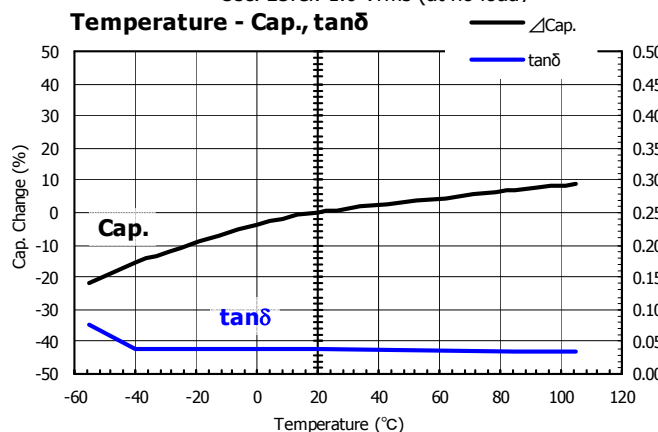
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

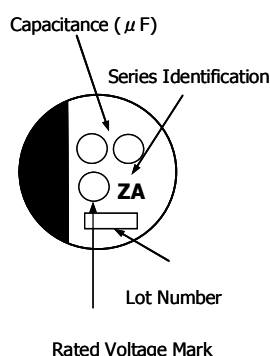
Part Number: EEHZA1E101XP

$\phi 6.3 \times 7.7$ mm / 25 V / 100 μ F / 105 °C, 10000 h

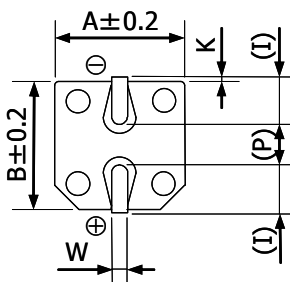
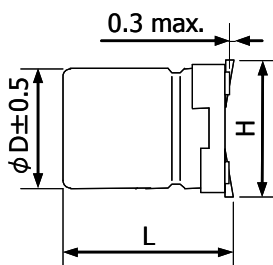
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	100 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.14 max. (at 120 Hz)
DC Leakage Current	25.0 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	30 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: D8

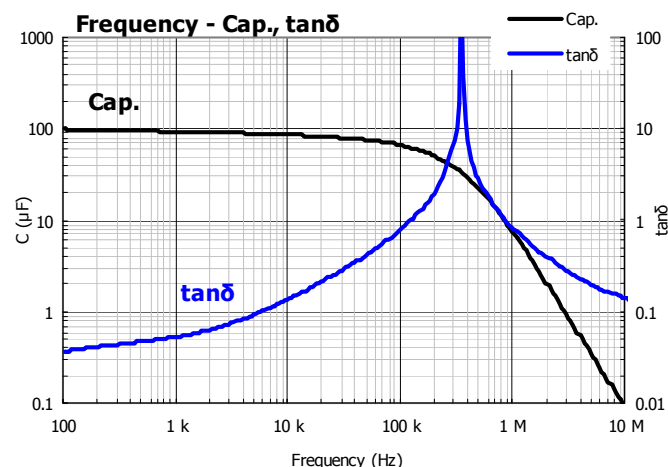
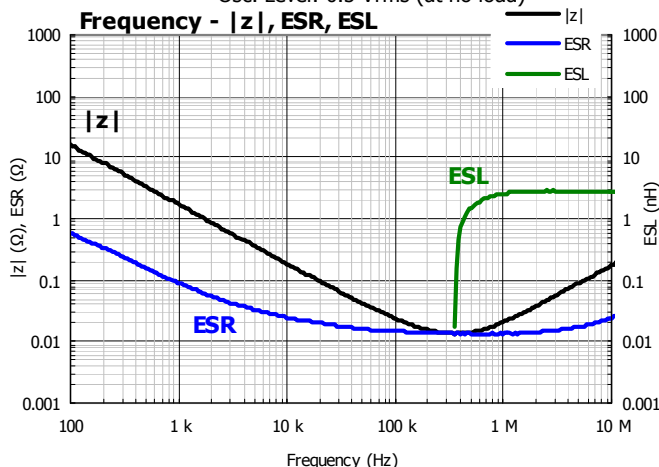


	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

(): Reference Size

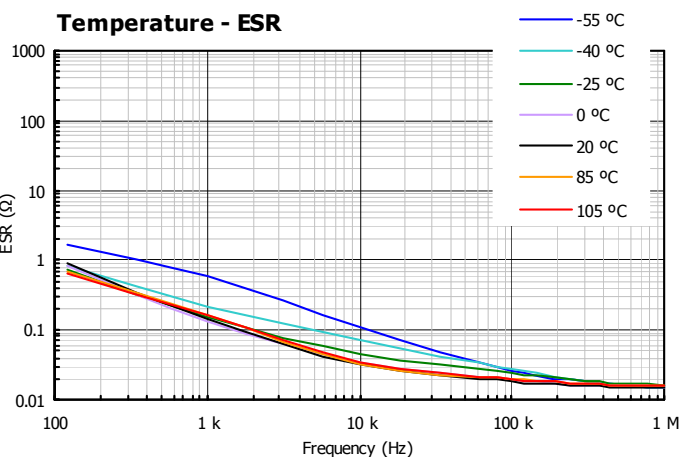
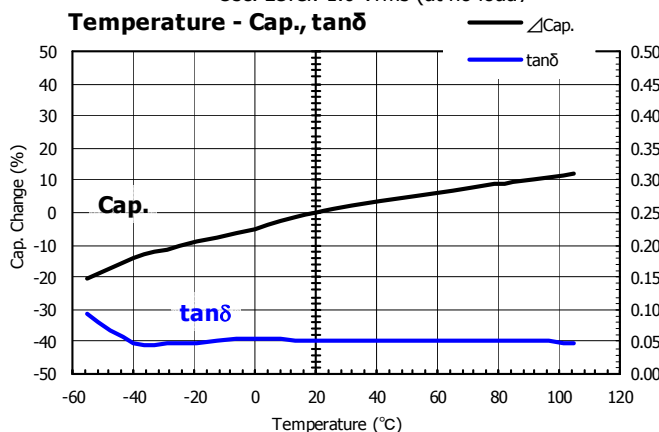
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

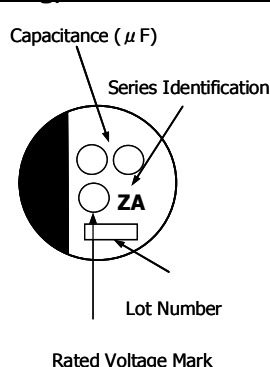
Part Number: EEHZA1E221P

$\phi 8.0 \times 10.2$ mm / 25 V / 220 μ F / 105 °C, 10000 h

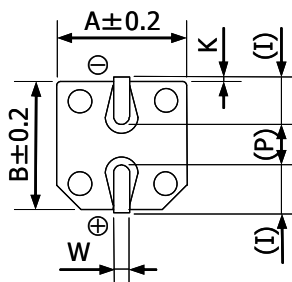
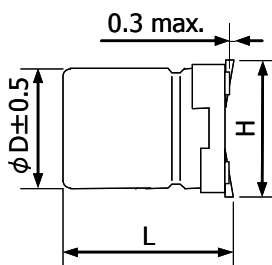
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	220 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.14 max. (at 120 Hz)
DC Leakage Current	55.0 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	27 m Ω 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

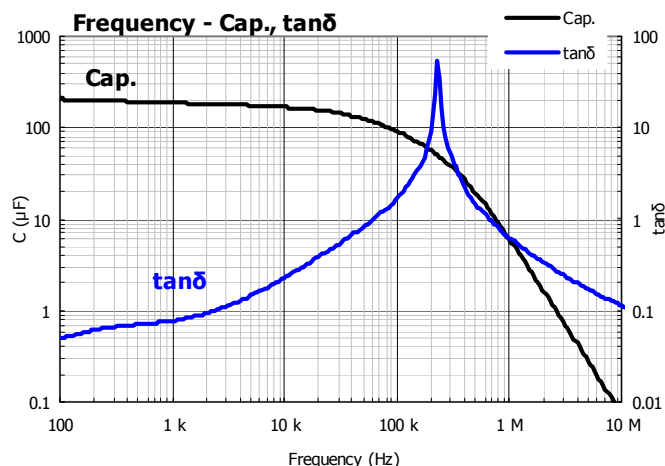
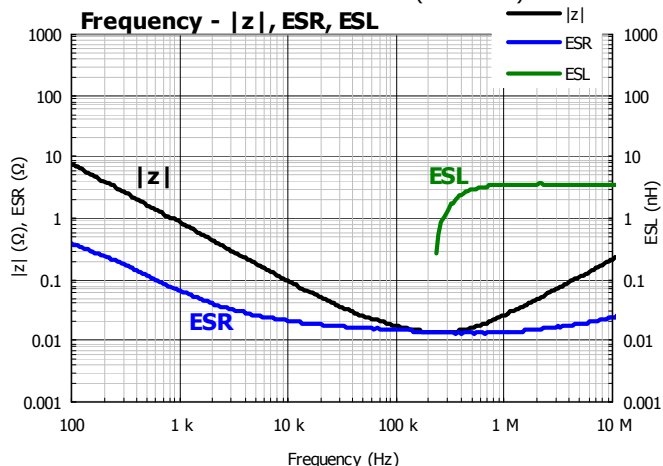


	(mm)
D	8.0
L	10.2 ± 0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9 ± 0.2
P	3.1
K	0.7 ± 0.2

(): Reference Size

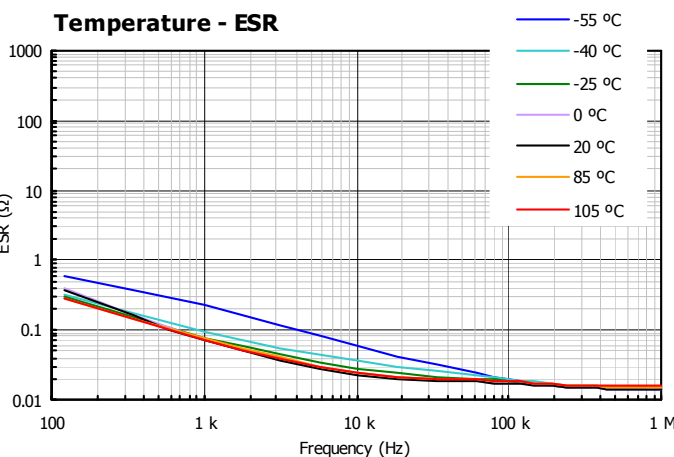
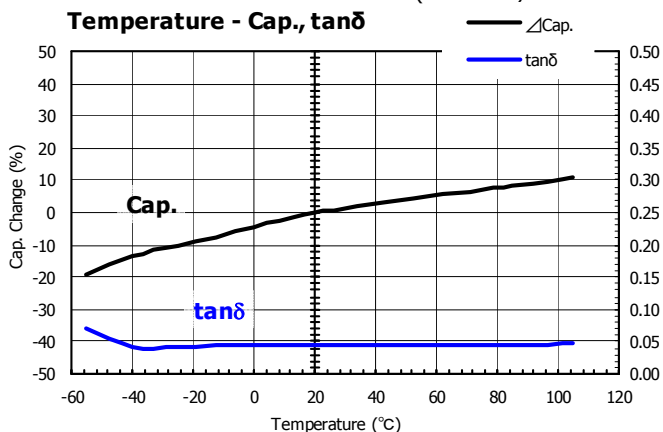
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

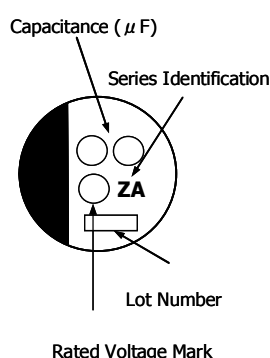
Part Number: EEHZA1E331P

$\phi 10.0 \times 10.2$ mm / 25 V / 330 μ F / 105 °C, 10000 h

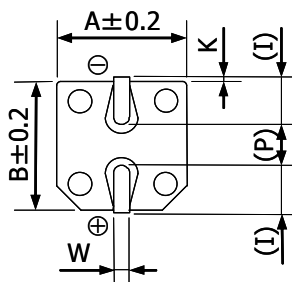
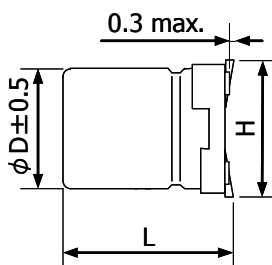
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	330 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	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

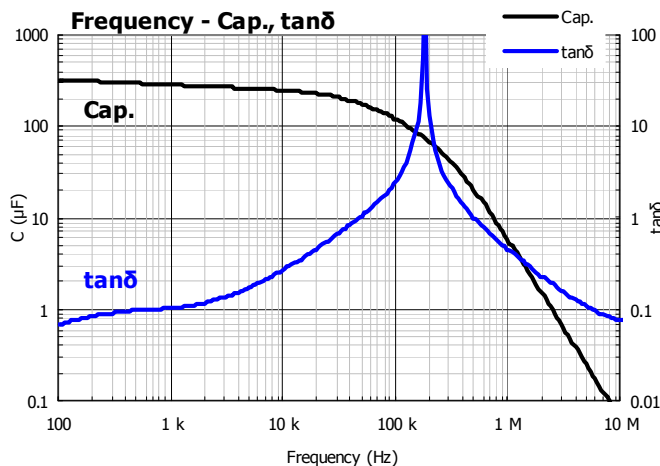
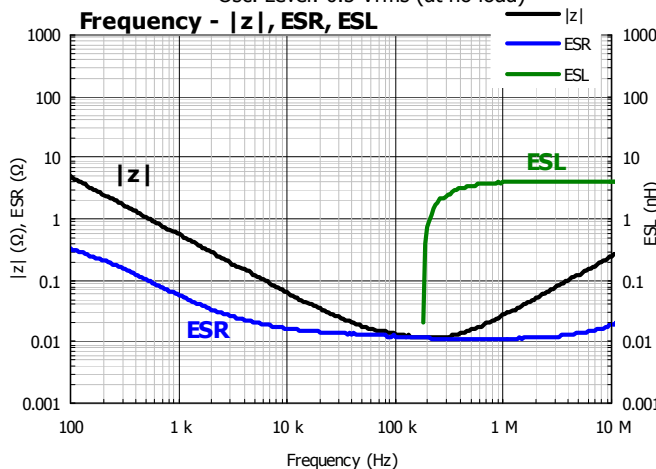


	(mm)
D	10.0
L	10.2 \pm 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 \pm 0.2
P	4.6
K	0.7 \pm 0.2

(): Reference Size

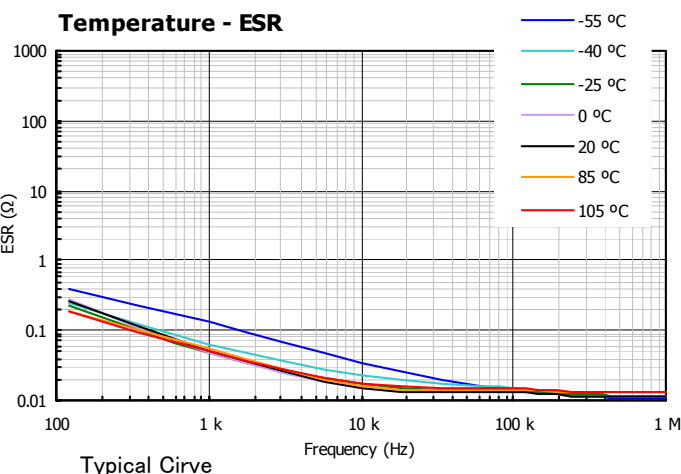
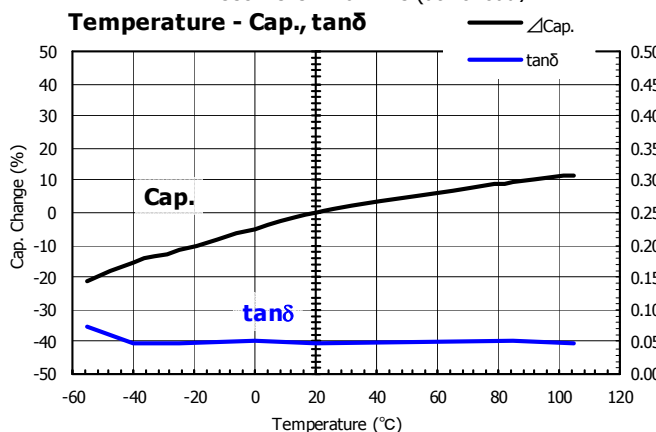
Frequency - |z|, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

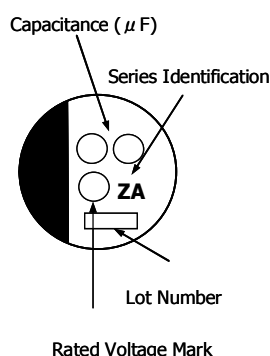
Part Number: EEHZA1V220R

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

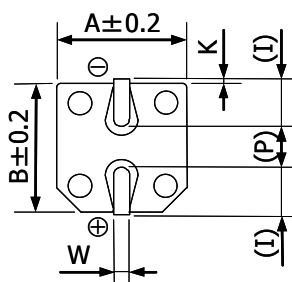
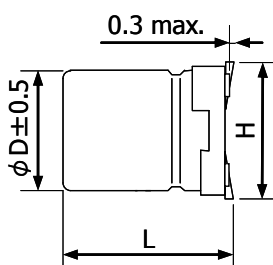
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

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

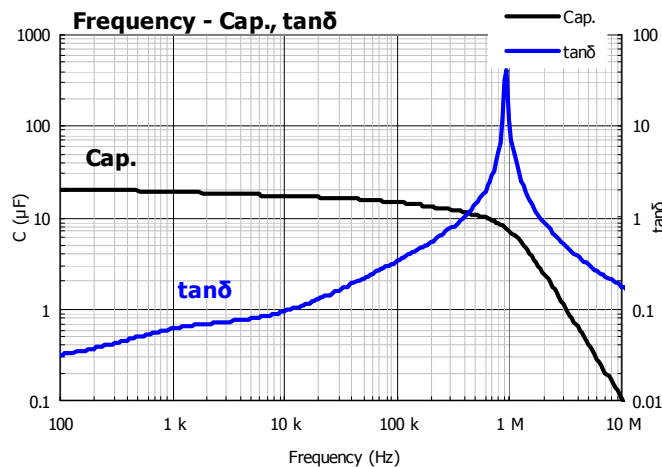
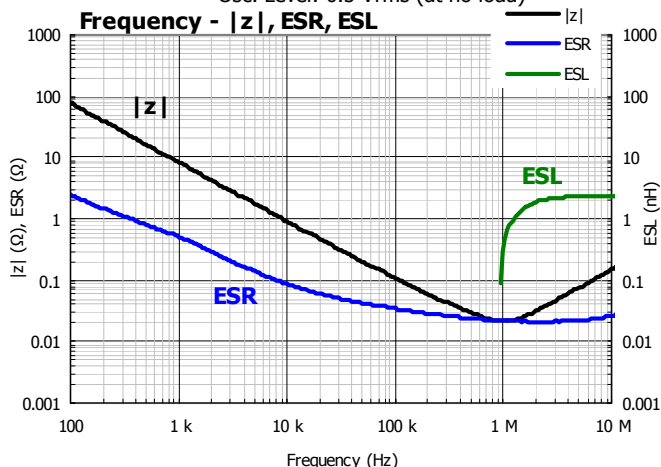


	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
H	6.5 max.
I	2.2
W	0.65±0.10
P	1.5
K	0.35+0.15/-0.20

(): Reference Size

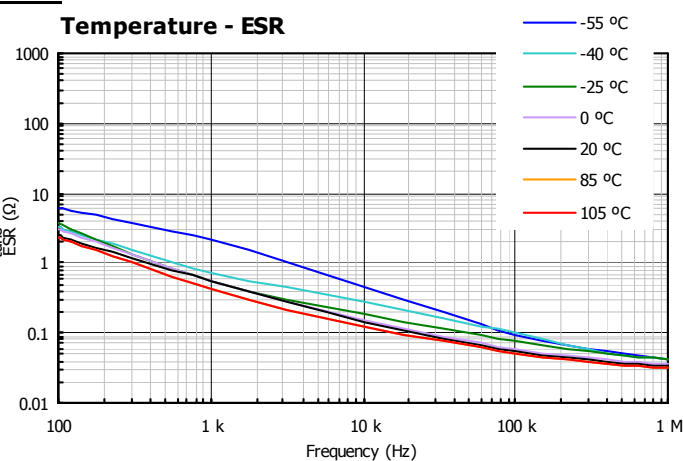
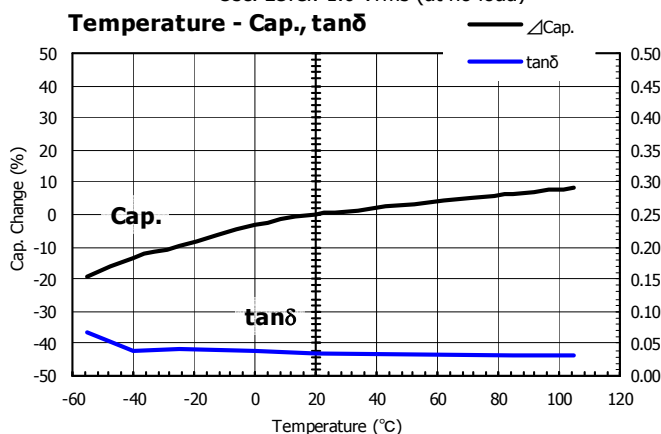
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

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

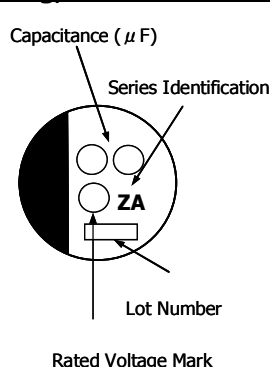
Part Number: EEHZA1V270P

$\phi 6.3 \times 5.8$ mm / 35 V / 27 μ F / 105 °C, 10000 h

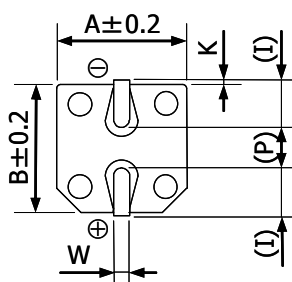
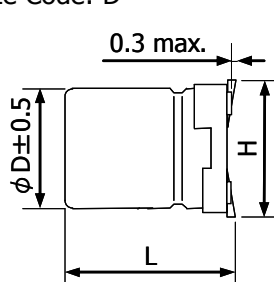
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	27 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.12 max. (at 120 Hz)
DC Leakage Current	9.4 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	60 m Ω 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



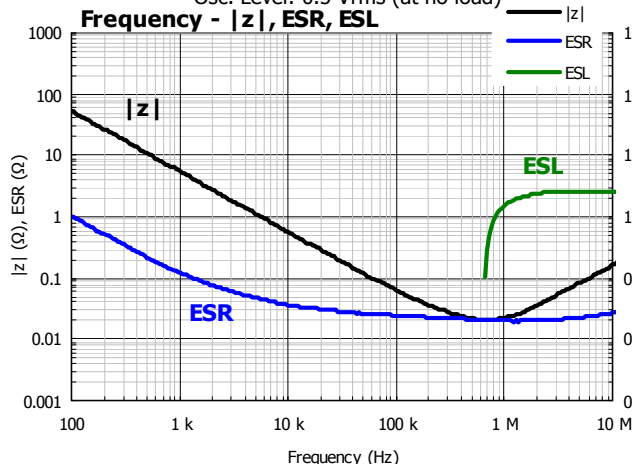
	(mm)
D	6.3
L	5.8 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

() :

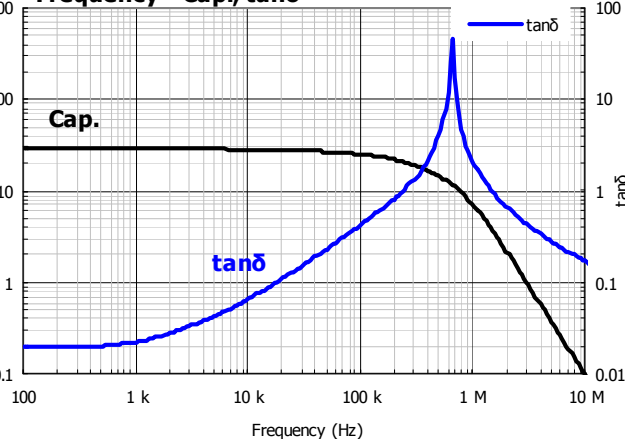
Reference Size

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

Osc. Level: 0.5 Vrms (at no load)

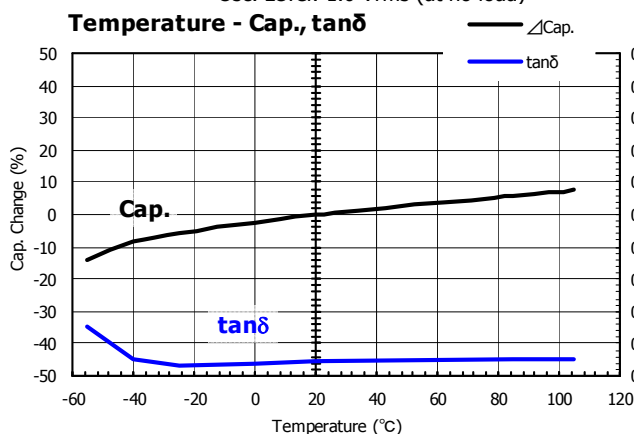


Frequency - Cap., $\tan \delta$

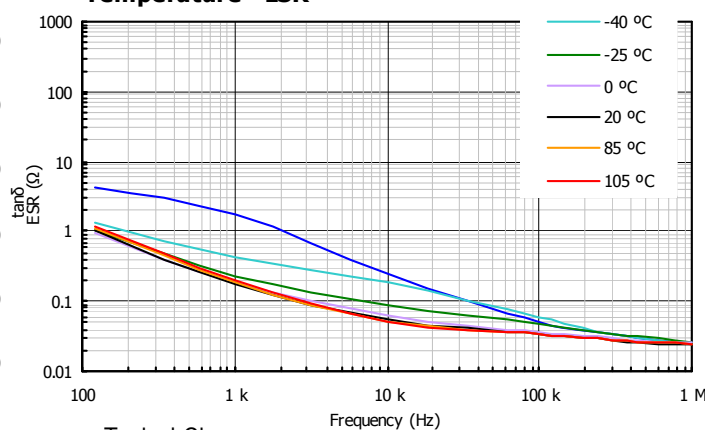


Temperature - Capacitance, $\tan \delta$, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



Temperature - ESR



Typical Curve

Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

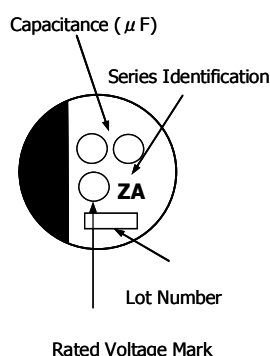
Part Number: EEHZA1V470P

$\phi 6.3 \times 5.8$ mm / 35 V / 47 μ F / 105 °C, 10000 h

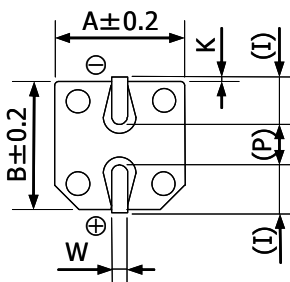
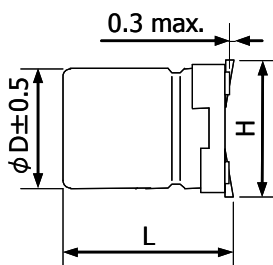
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	47 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.12 max. (at 120 Hz)
DC Leakage Current	16.4 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	60 m Ω 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

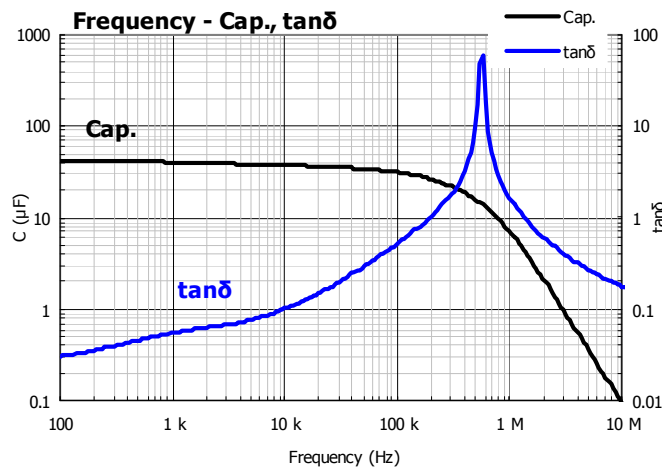
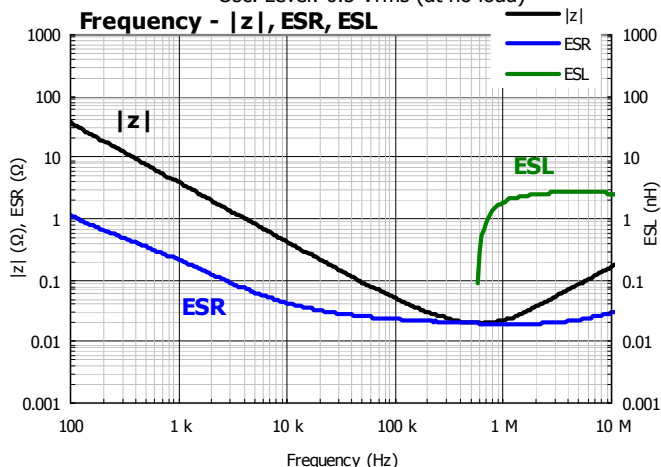


	(mm)
D	6.3
L	5.8 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / - 0.20$

(): Reference Size

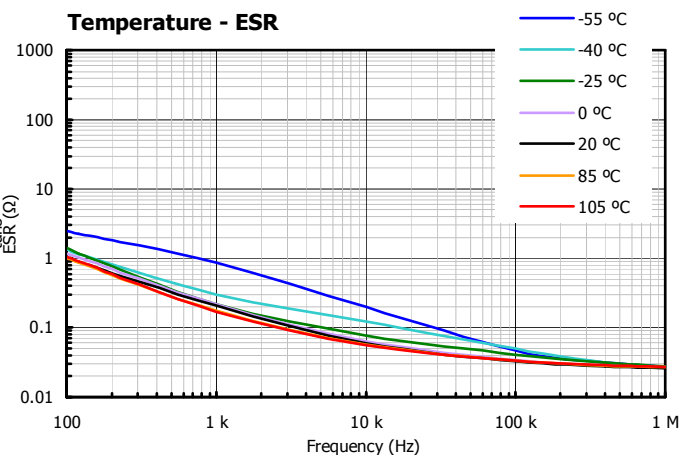
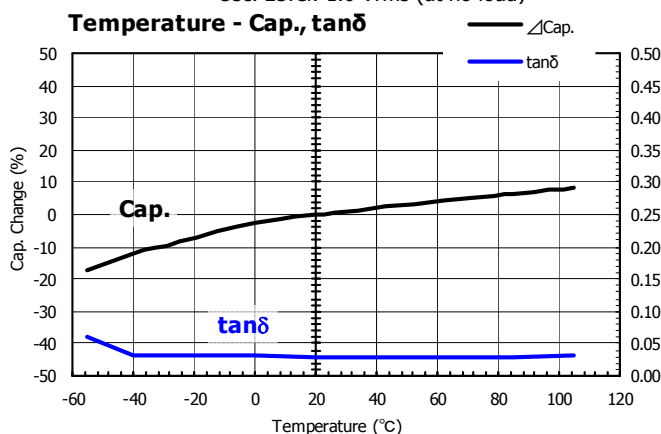
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

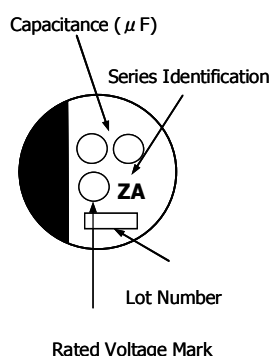
Part Number: EEHZA1V680XP

$\phi 6.3 \times 7.7$ mm / 35 V / 68 μ F / 105 °C, 10000 h

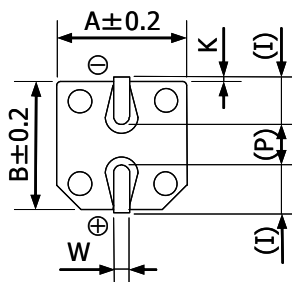
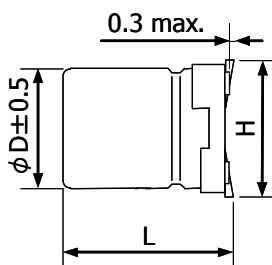
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	68 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.12 max. (at 120 Hz)
DC Leakage Current	23.8 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	35 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: D8

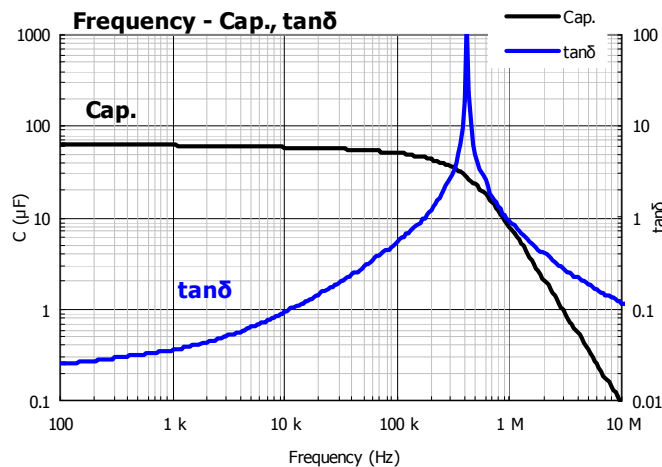
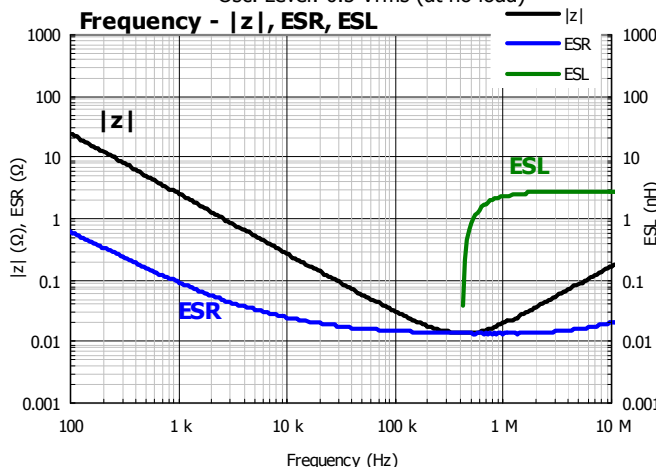


	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

(): Reference Size

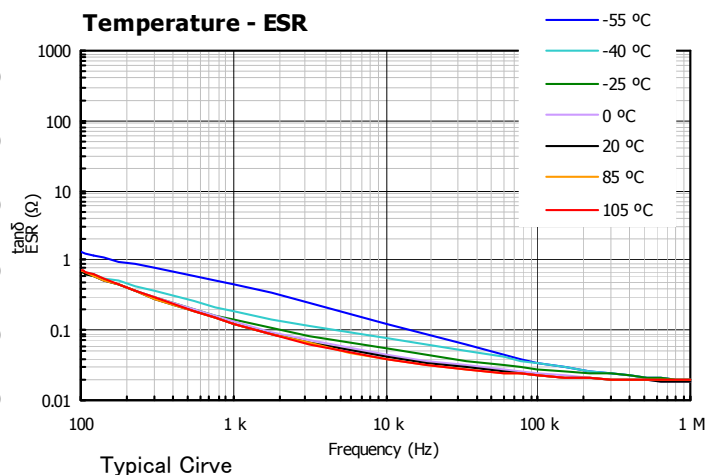
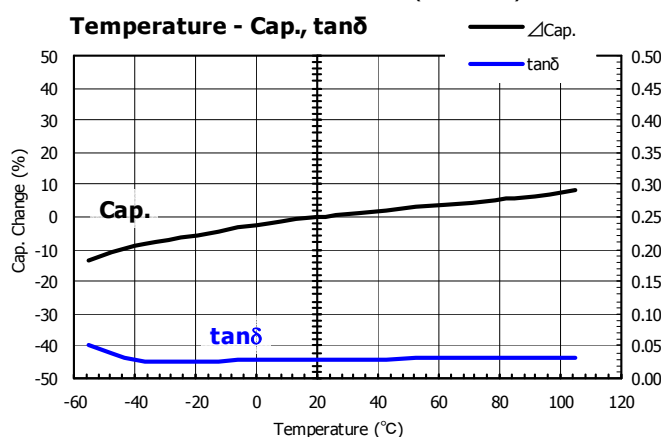
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

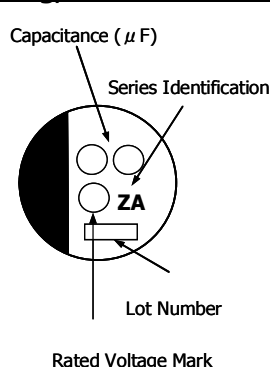
Part Number: EEHZA1V151P

$\phi 8.0 \times 10.2$ mm / 35 V / 150 μ F / 105 °C, 10000 h

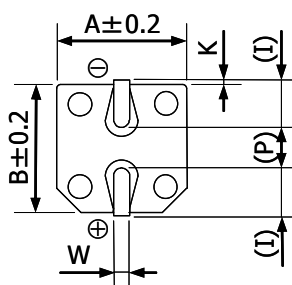
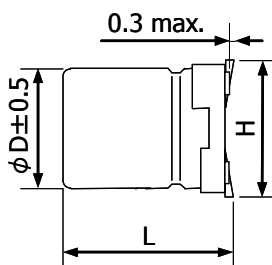
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	150 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.12 max. (at 120 Hz)
DC Leakage Current	52.5 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	27 m Ω 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

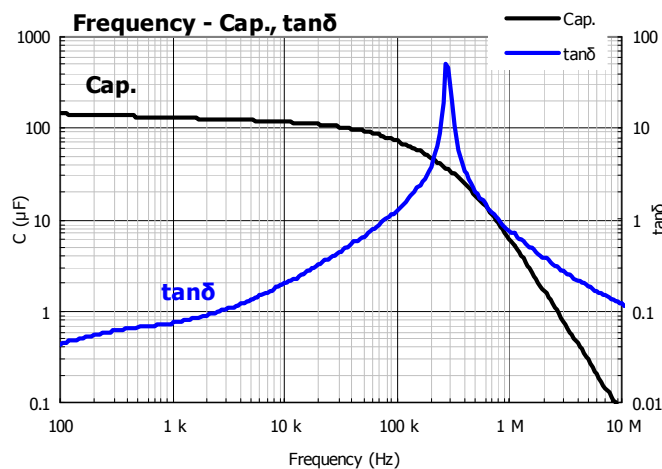
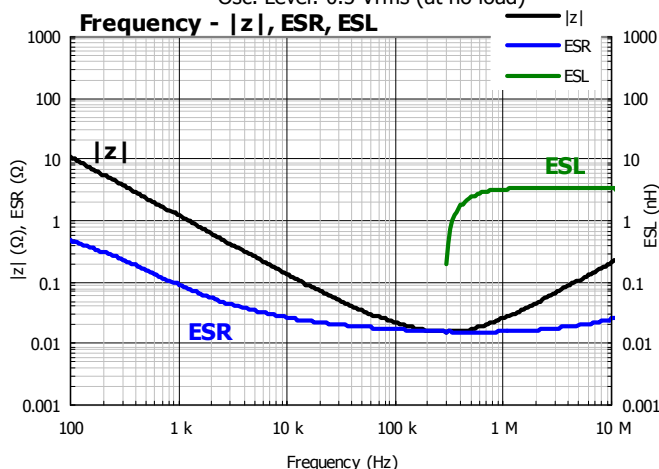


	(mm)
D	8.0
L	10.2 ± 0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9 ± 0.2
P	3.1
K	0.7 ± 0.2

(): Reference Size

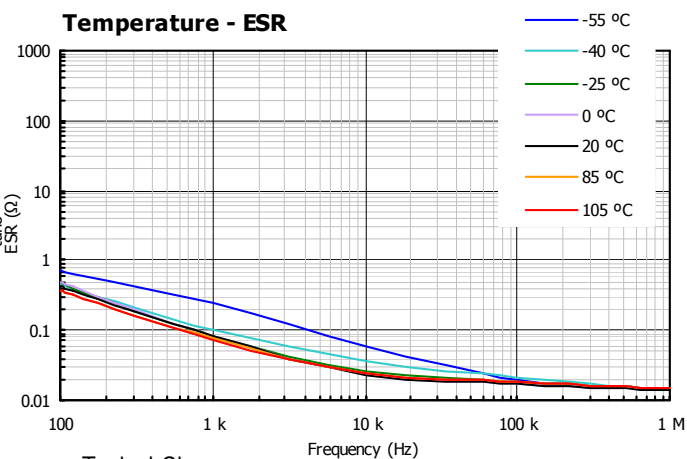
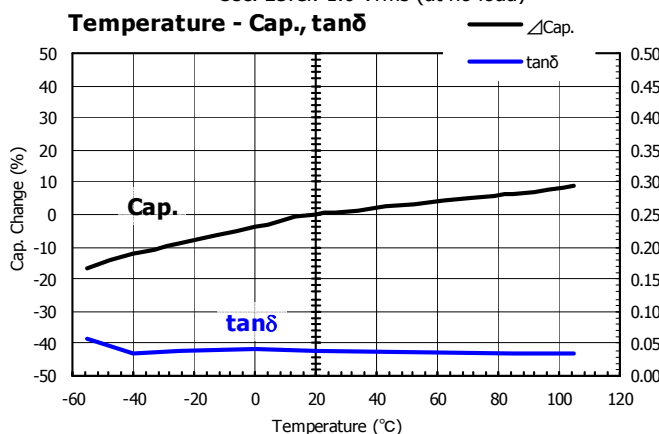
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



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

Osc. Level: 1.0 Vrms (at no load)



Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

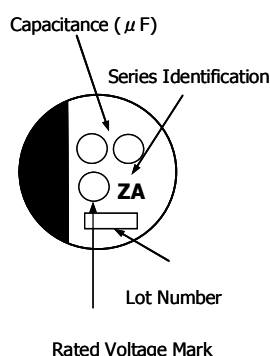
Part Number: EEHZA1V271P

$\phi 10.0 \times 10.2$ mm / 35 V / 270 μ F / 105 °C, 10000 h

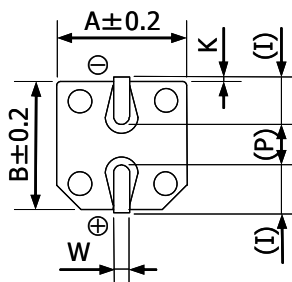
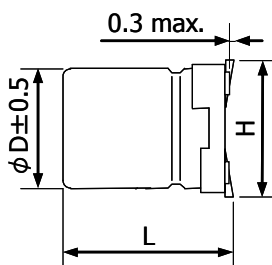
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	270 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.12 max. (at 120 Hz)
DC Leakage Current	94.5 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

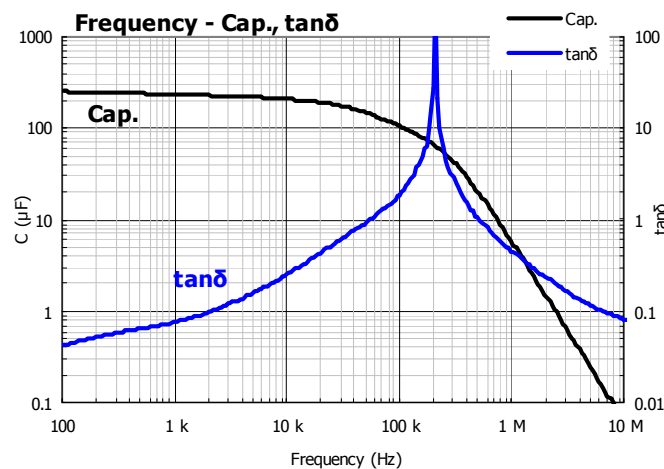
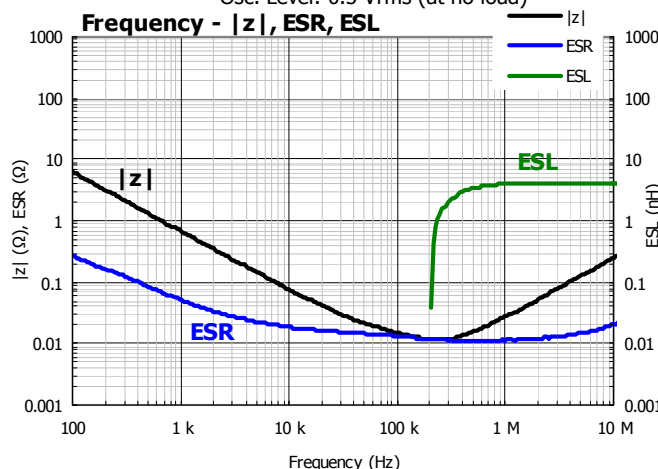


	(mm)
D	10.0
L	10.2 ± 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 ± 0.2
P	4.6
K	0.7 ± 0.2

(): Reference Size

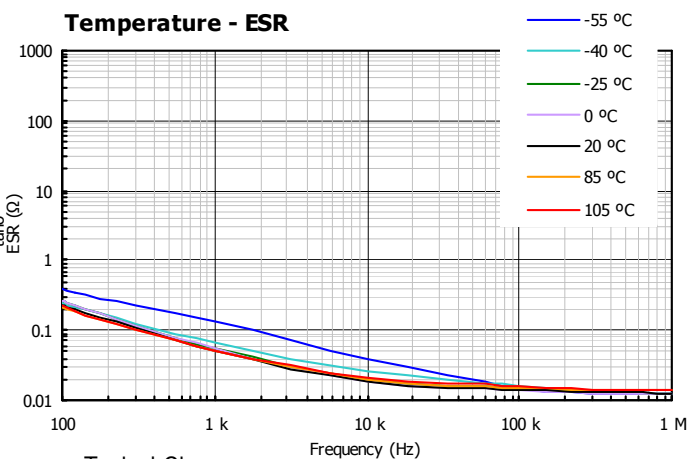
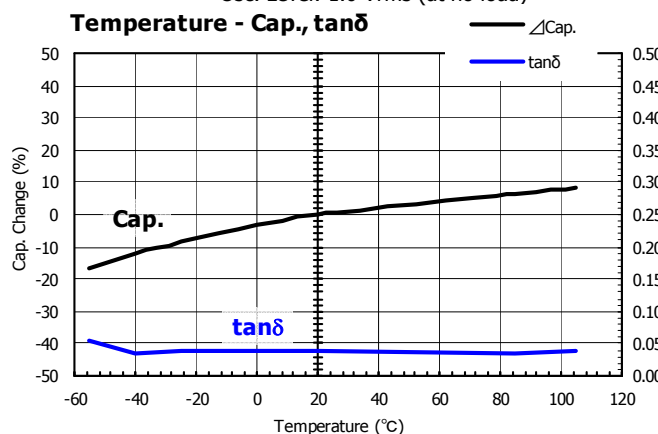
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

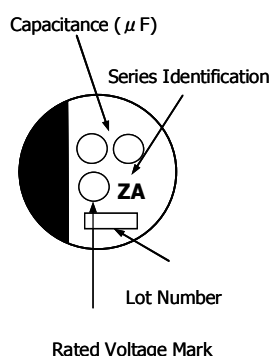
Part Number: EEHZA1H100R

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

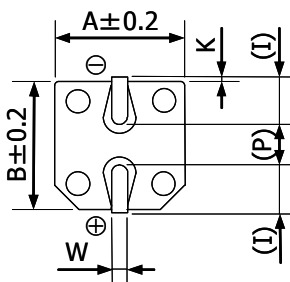
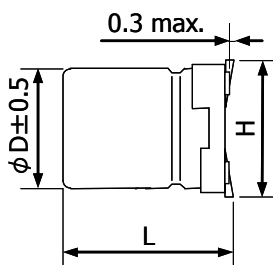
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	10 μF (at 120 Hz)
Capacitance Tolerance	±20 %

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)



Size Code: C

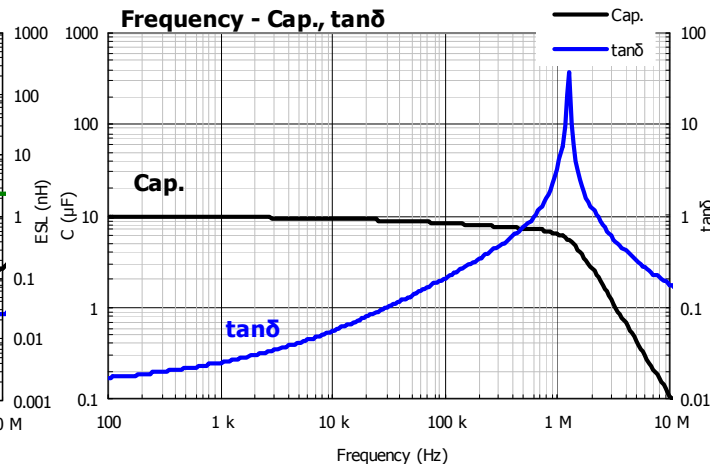
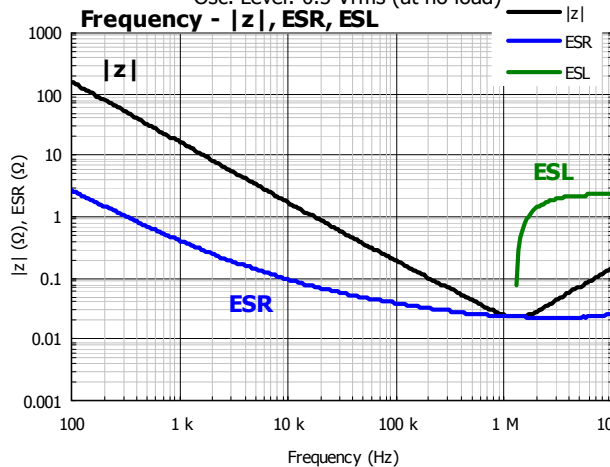


	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
H	6.5 max.
I	2.2
W	0.65±0.10
P	1.5
K	0.35+0.15/-0.20

(): Reference Size

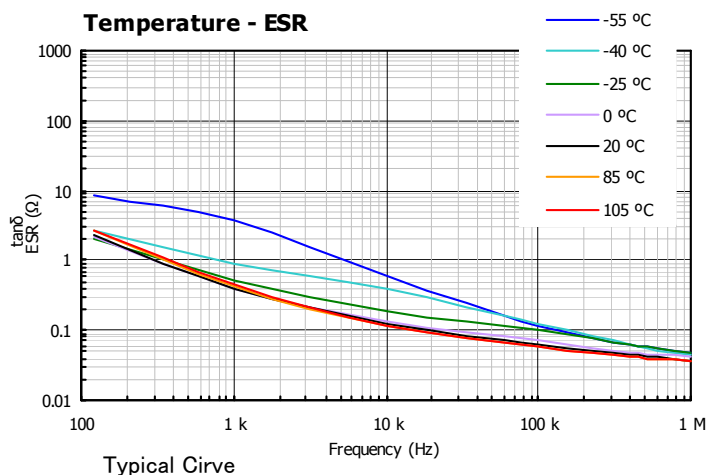
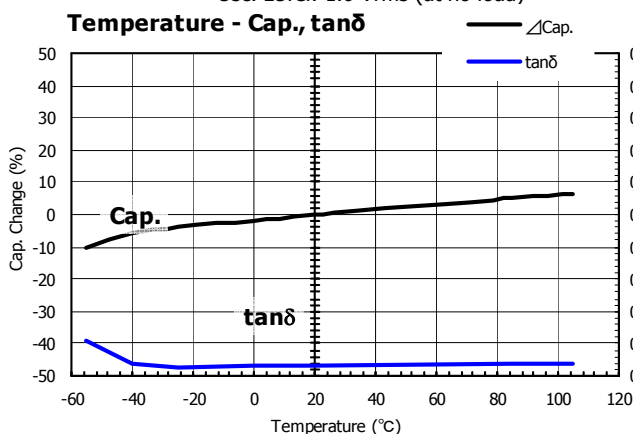
Frequency - |z|, ESR, ESL, Capacitance, tanδ Characteristics

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

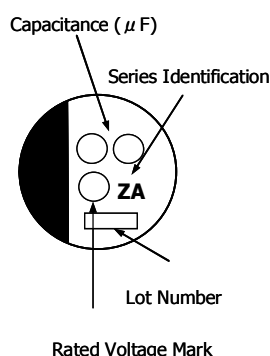
Part Number: EEHZA1H220P

$\phi 6.3 \times 5.8$ mm / 50 V / 22 μ F / 105 °C, 10000 h

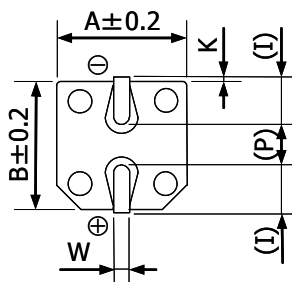
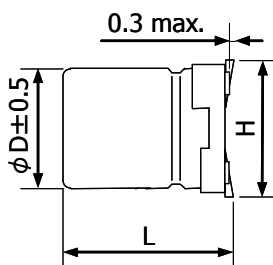
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	22 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.10 max. (at 120 Hz)
DC Leakage Current	11 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	80 m Ω 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

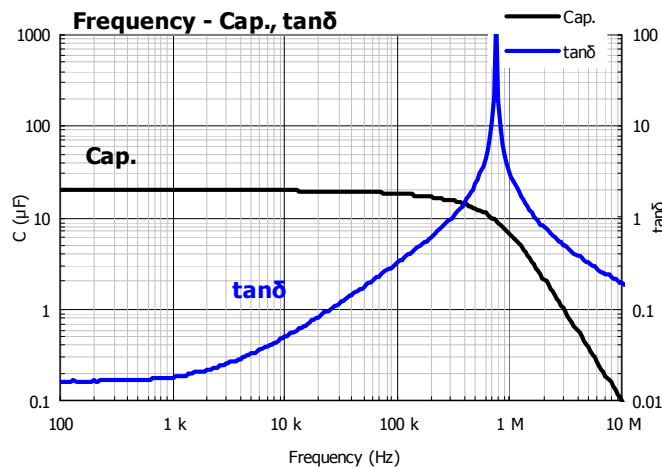
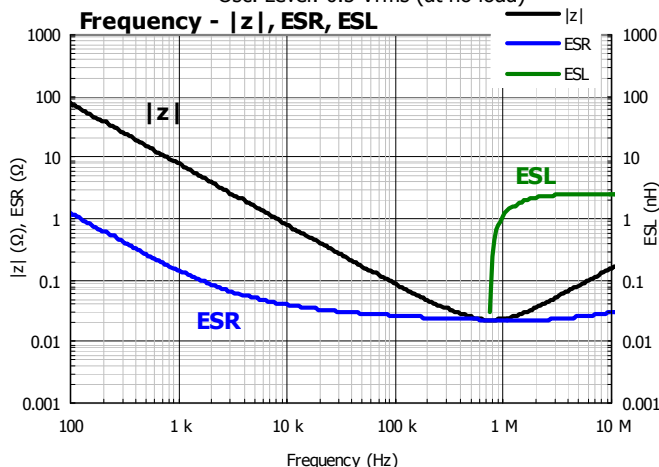


	(mm)
D	6.3
L	5.8 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / - 0.20$

(): Reference Size

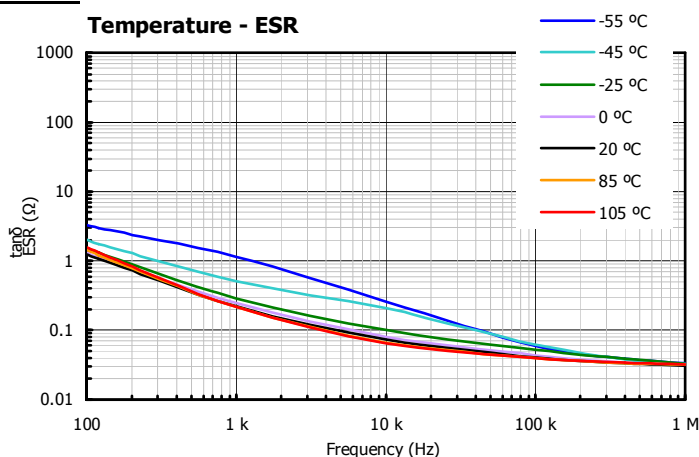
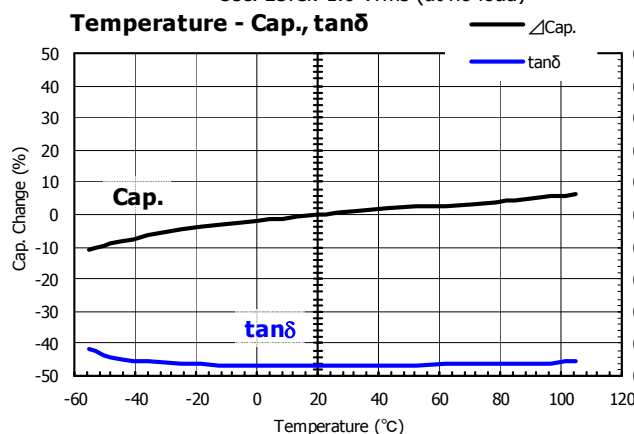
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

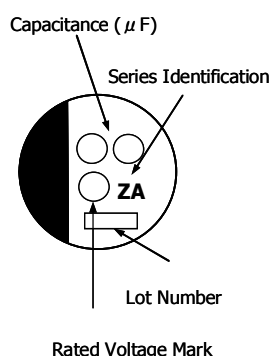
Part Number: EEHZA1H330XP

$\phi 6.3 \times 7.7$ mm / 50 V / 33 μ F / 105 °C, 10000 h

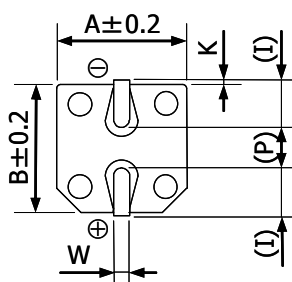
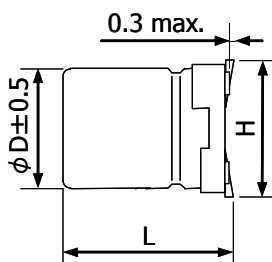
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	33 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	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 °C)
Endurance	105 °C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: D8

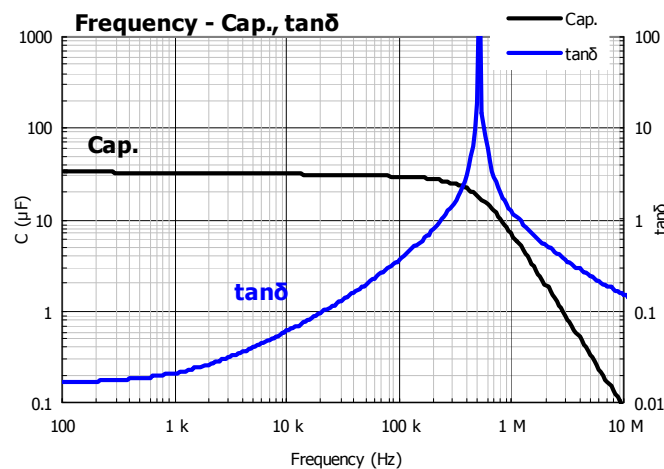
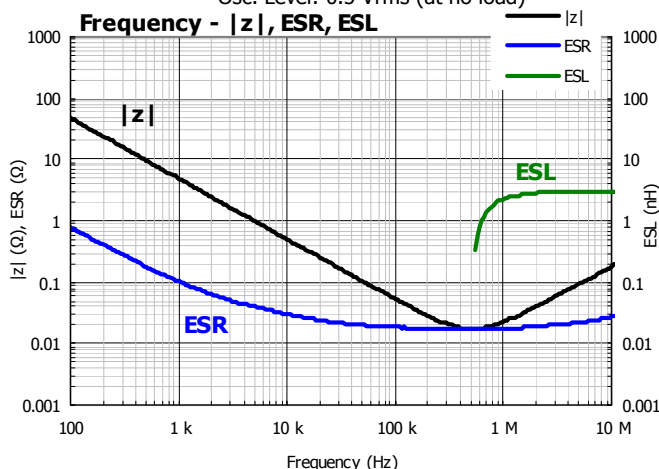


	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

(): Reference Size

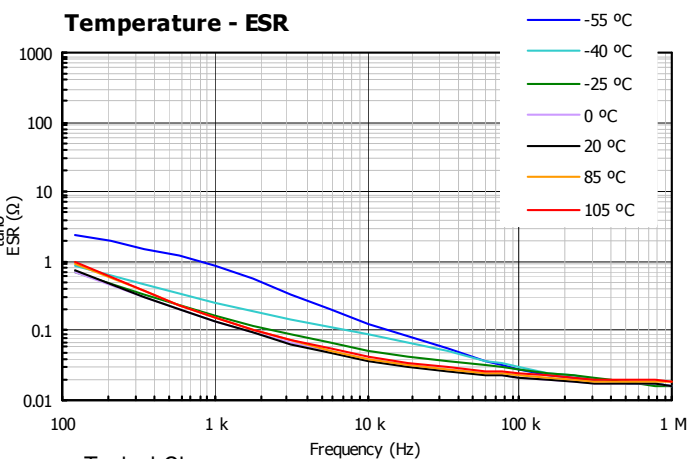
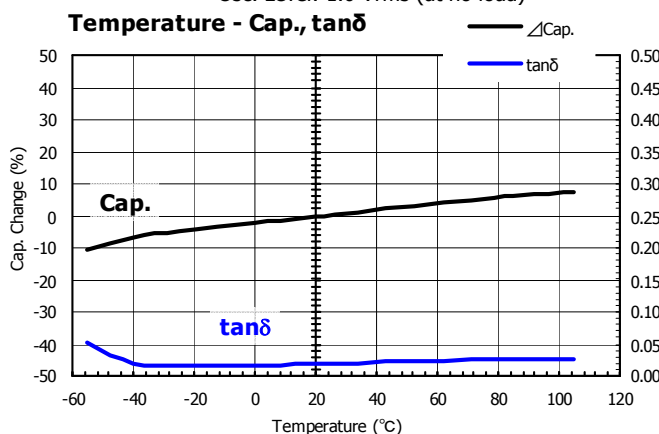
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

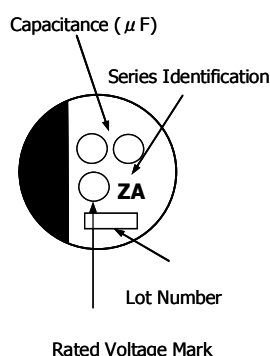
Part Number: EEHZA1H680P

$\phi 8.0 \times 10.2$ mm / 50 V / 68 μ F / 105 $^{\circ}$ C, 10000 h

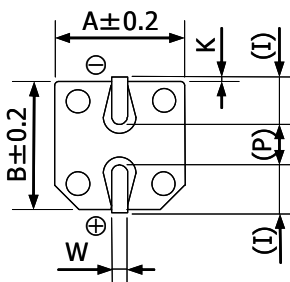
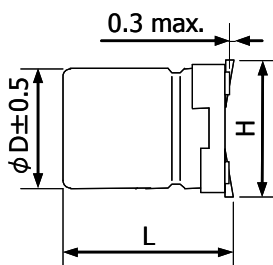
Category Temperature Range	-55 to 105 $^{\circ}$ C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	68 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.1 max. (at 120 Hz)
DC Leakage Current	34 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	30 m Ω max. (at 100 kHz)
Ripple Current	1800 mArms max. (at 100 kHz, 105 $^{\circ}$ C)
Endurance	105 $^{\circ}$ C, 10000 h

Marking, Dimensions in mm (not to scale)



Size Code: F

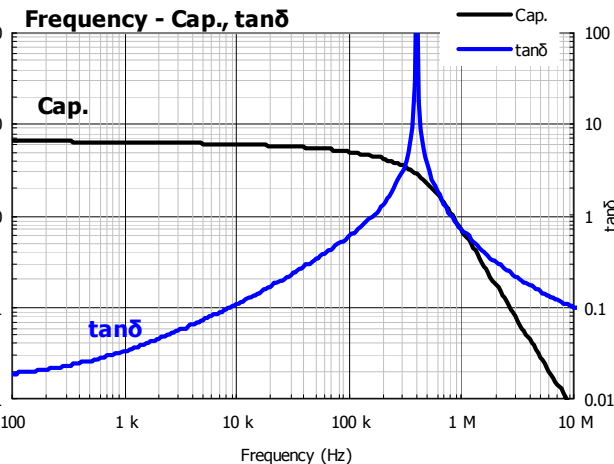
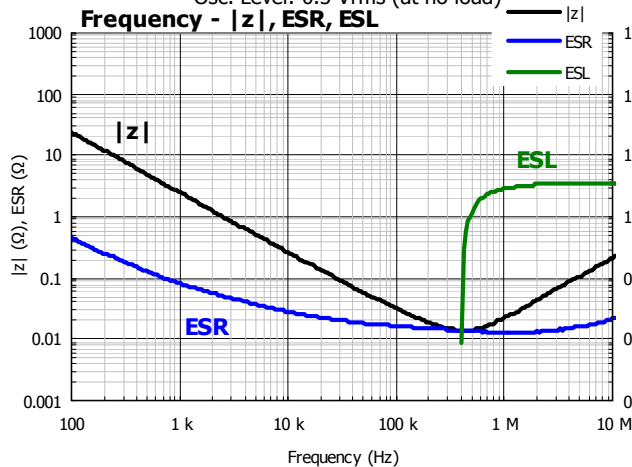


	(mm)
D	8.0
L	10.2 ± 0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9 ± 0.2
P	3.1
K	0.7 ± 0.2

(): Reference Size

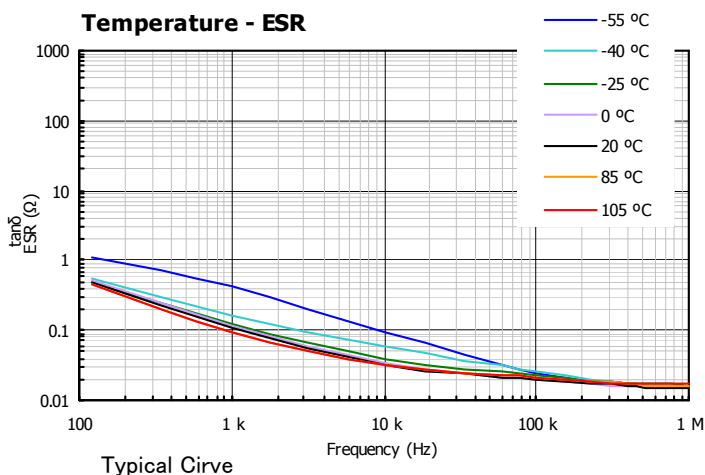
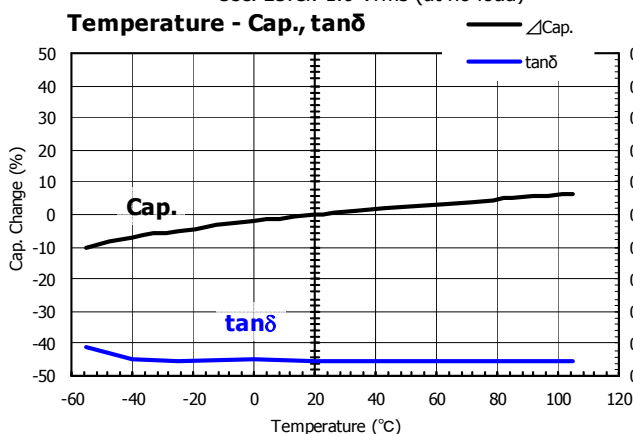
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

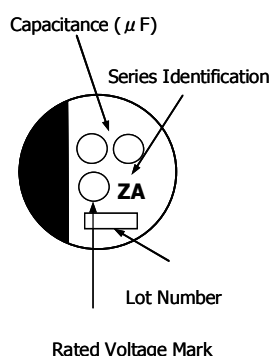
Part Number: EEHZA1H101P

$\phi 10.0 \times 10.2$ mm / 50 V / 100 μ F / 105 °C, 10000 h

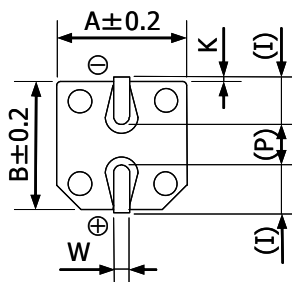
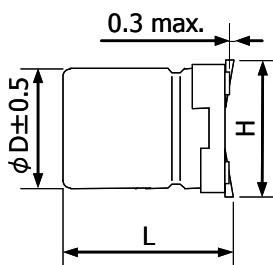
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	100 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	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

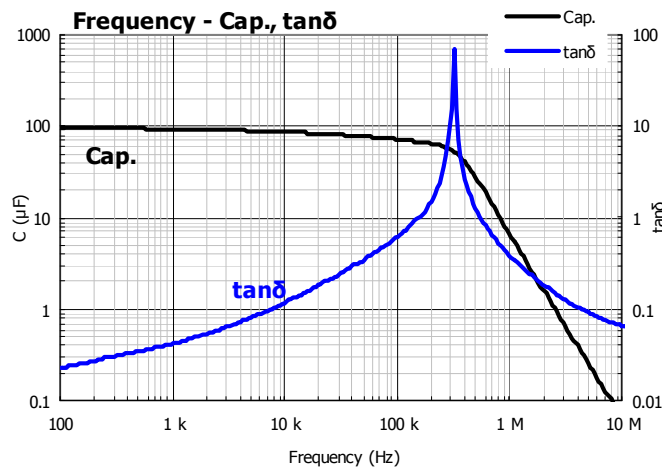
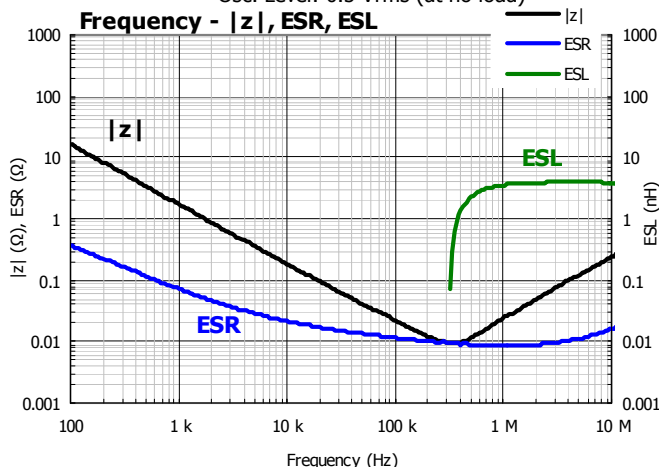


	(mm)
D	10.0
L	10.2 \pm 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 \pm 0.2
P	4.6
K	0.7 \pm 0.2

(): Reference Size

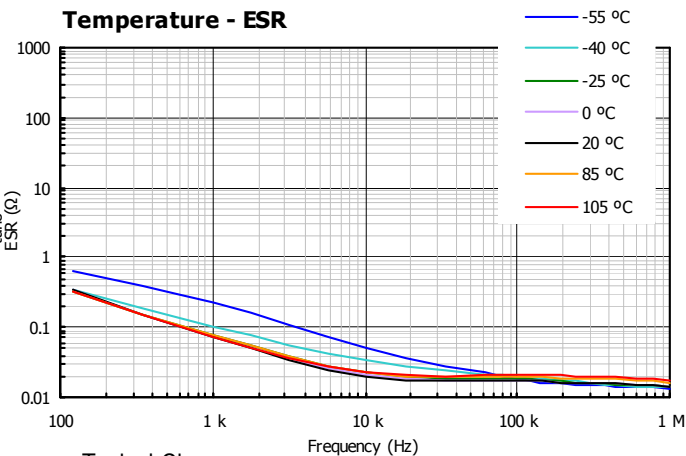
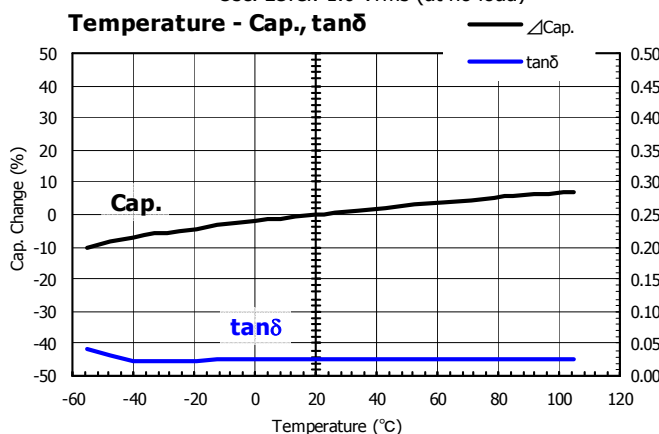
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

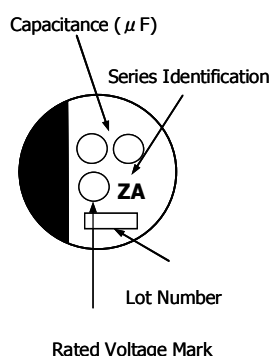
Part Number: EEHZA1J100P

$\phi 6.3 \times 5.8$ mm / 63 V / 10 μ F / 105 °C, 10000 h

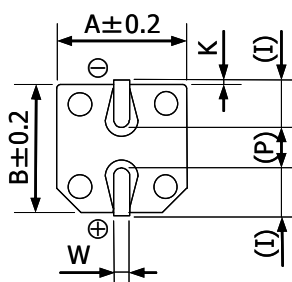
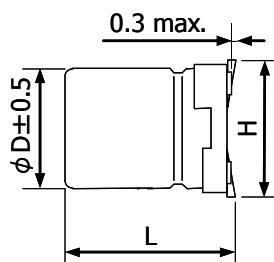
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	10 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
DC Leakage Current	6.3 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	120 m Ω 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

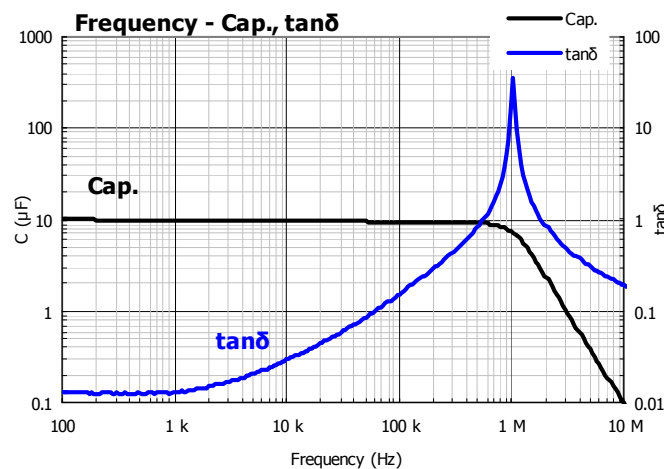
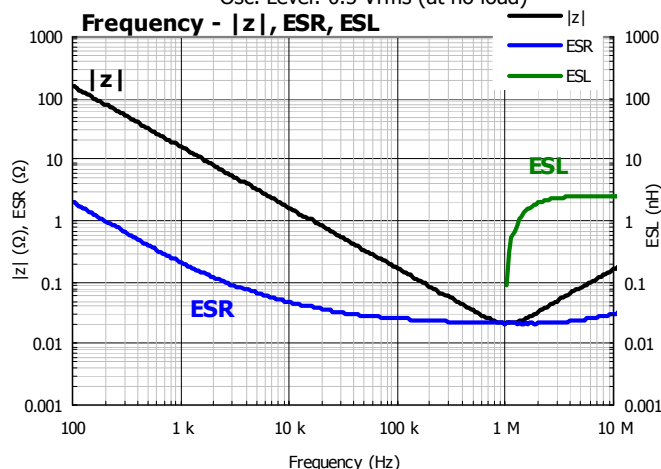


	(mm)
D	6.3
L	5.8 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	$0.35 + 0.15 / -0.20$

(): Reference Size

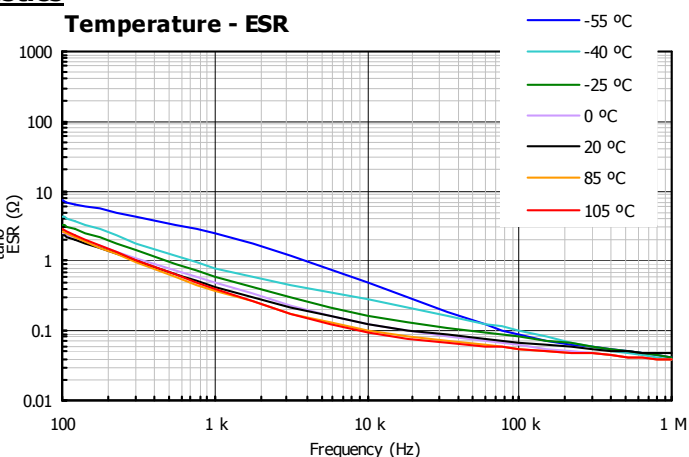
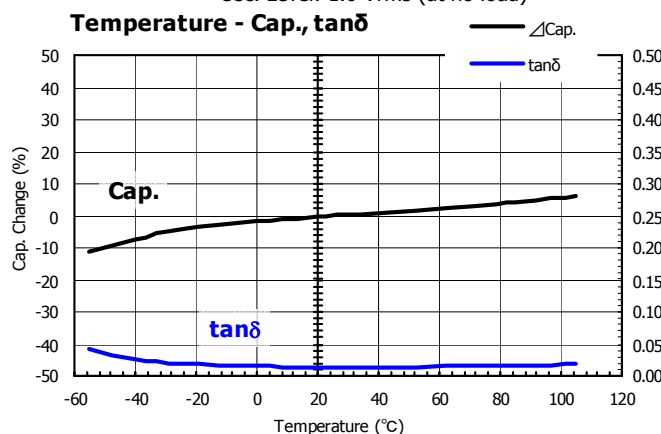
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

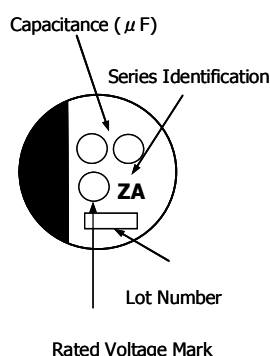
Part Number: EEHZA1J220XP

$\phi 6.3 \times 7.7$ mm / 63 V / 22 μ F / 105 °C, 10000 h

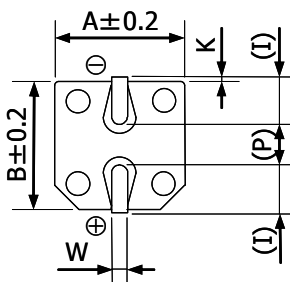
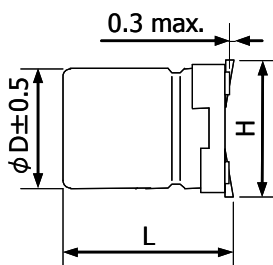
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	22 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
DC Leakage Current	13.8 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	80 m Ω 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

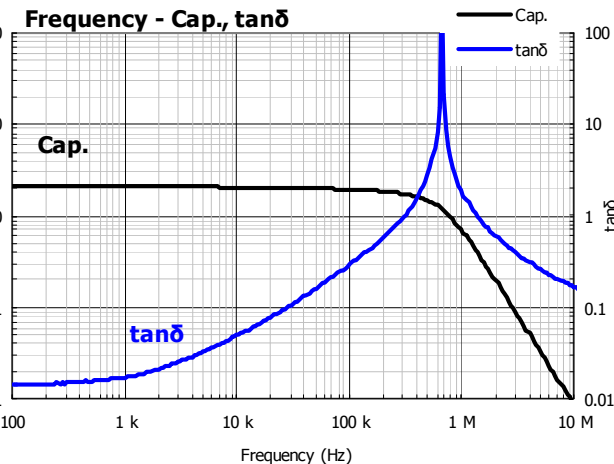
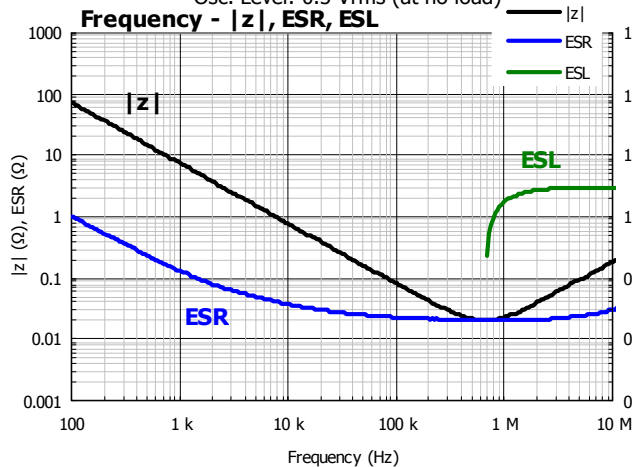


	(mm)
D	6.3
L	7.7 ± 0.3
A, B	6.6
H	7.8 max.
I	2.6
W	0.65 ± 0.10
P	1.8
K	0.35 ± 0.15 / -0.20

(): Reference Size

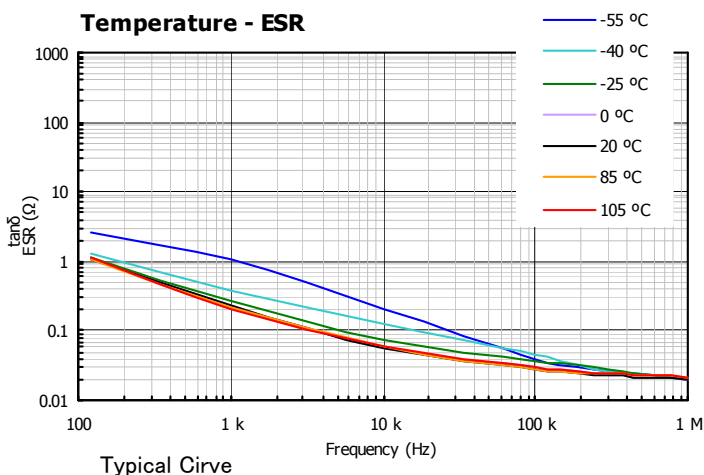
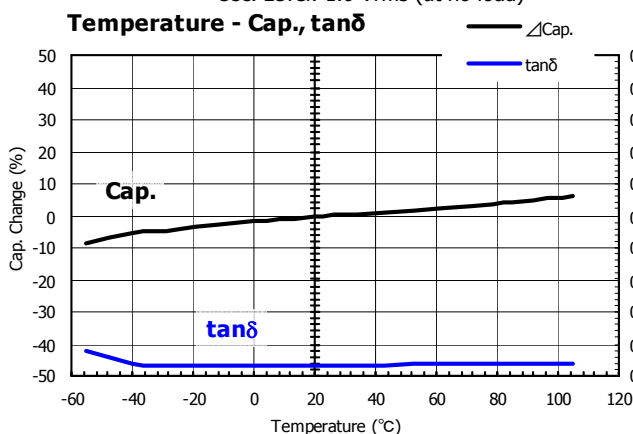
Frequency - |z|, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

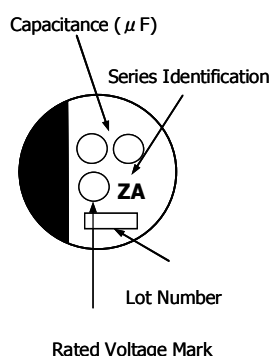
Part Number: EEHZA1J330P

$\phi 8.0 \times 10.2$ mm / 63 V / 33 μ F / 105 °C, 10000 h

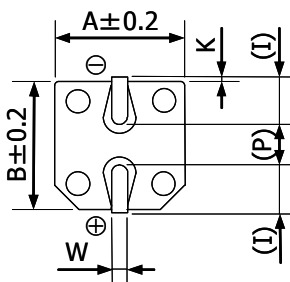
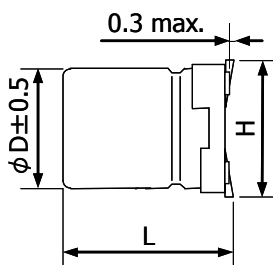
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	33 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
DC Leakage Current	20.7 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	40 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)



Size Code: F

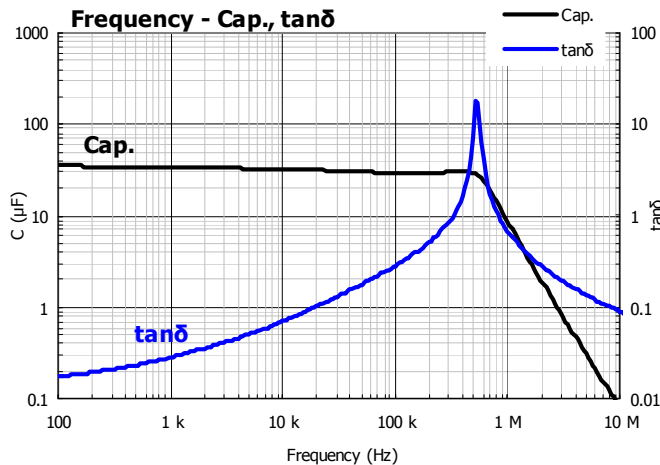
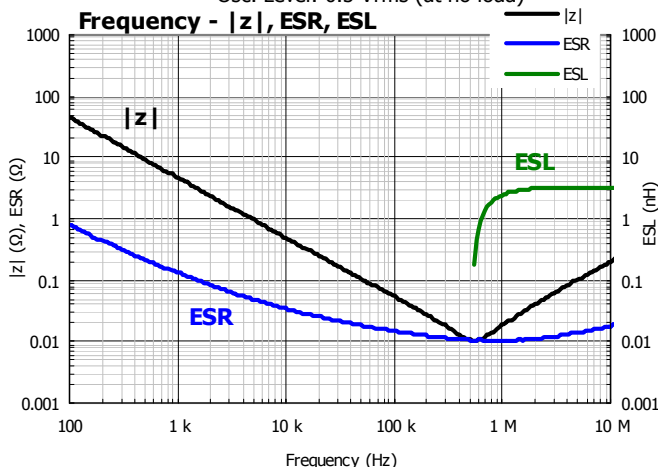


	(mm)
D	8.0
L	10.2 \pm 0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9 \pm 0.2
P	3.1
K	0.7 \pm 0.2

(): Reference Size

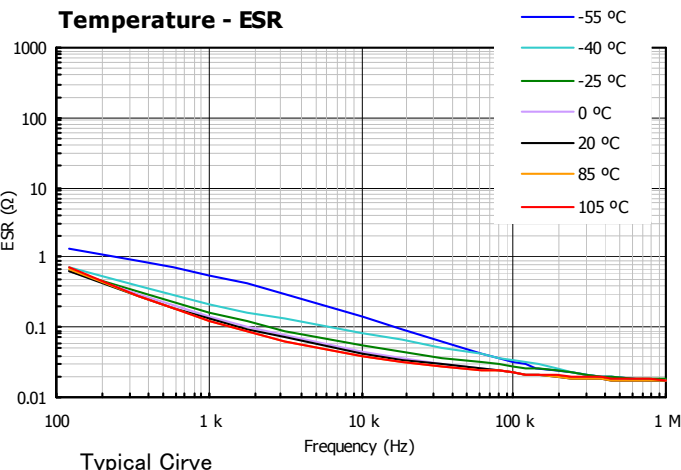
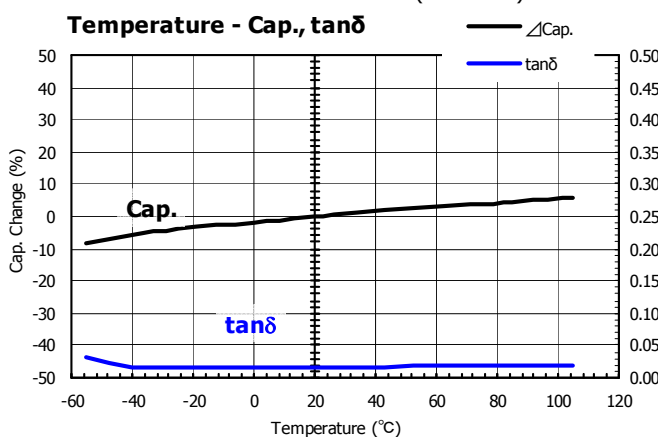
Frequency - |z|, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



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

Osc. Level: 1.0 Vrms (at no load)



Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZA series

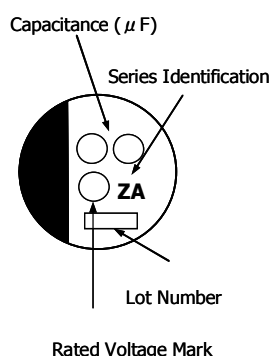
Part Number: EEHZA1J560P

$\phi 10.0 \times 10.2$ mm / 63 V / 56 μ F / 105 °C, 10000 h

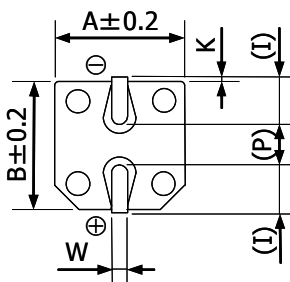
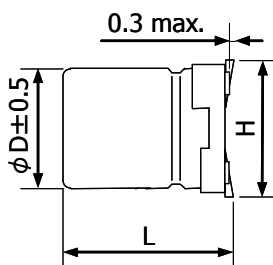
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	56 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
DC Leakage Current	35.2 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	30 m Ω 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: G

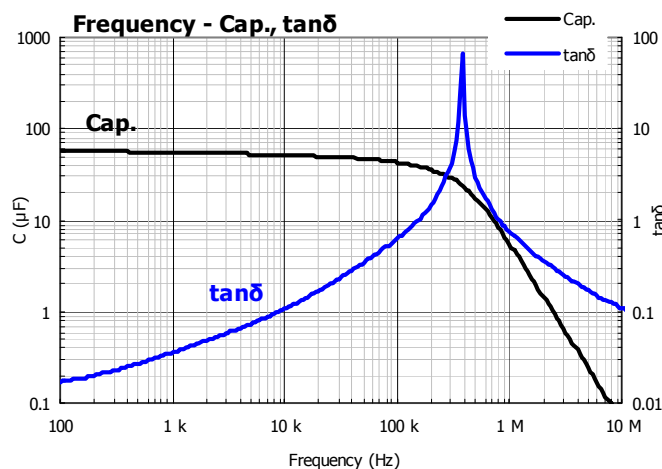
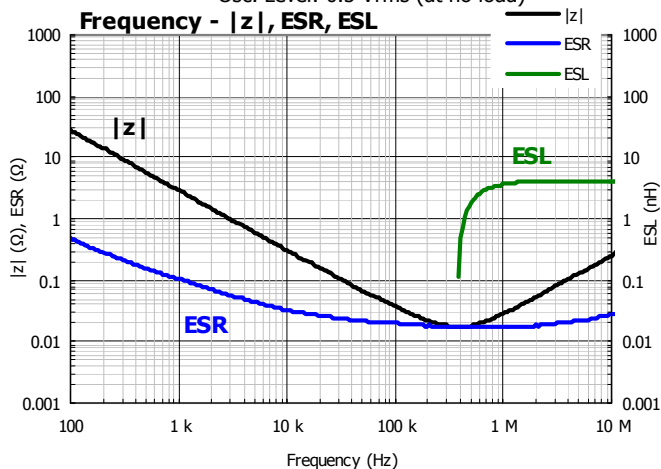


	(mm)
D	10.0
L	10.2 ± 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 ± 0.2
P	4.6
K	0.7 ± 0.2

(): Reference Size

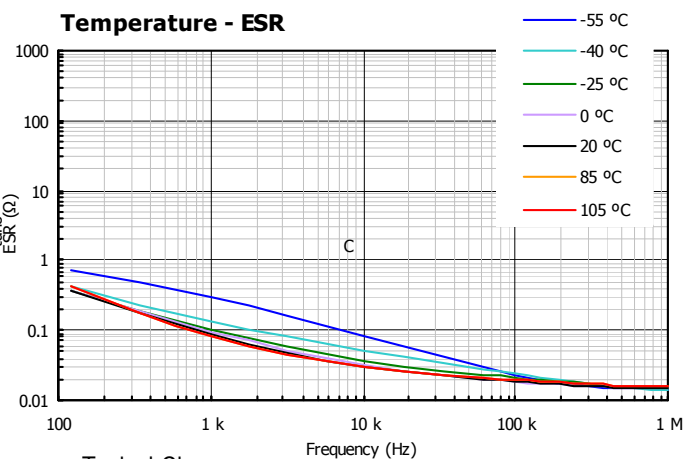
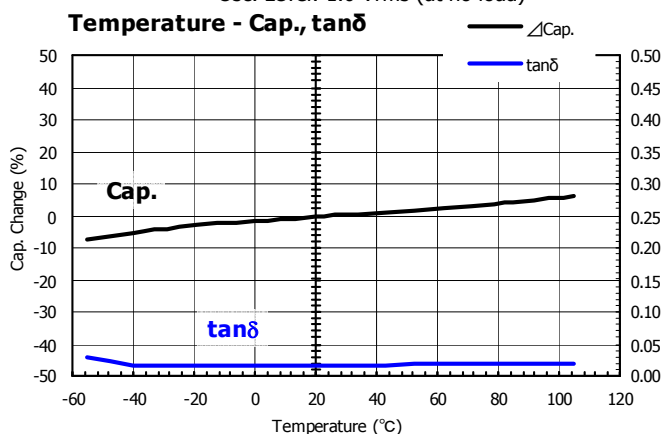
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

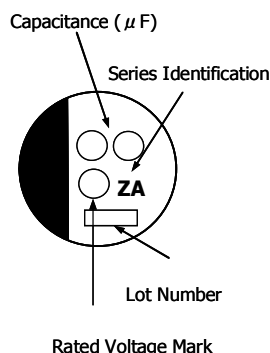
Part Number: EEHZA1K220P

$\phi 8.0 \times 10.2$ mm / 80 V / 22 μ F / 105 °C, 10000 h

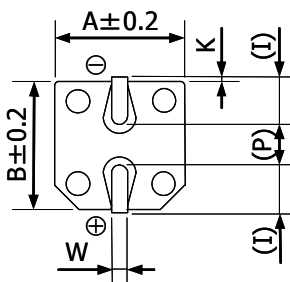
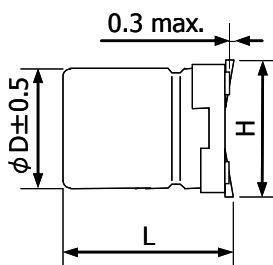
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	22 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	0.08 max. (at 120 Hz)
DC Leakage Current	17.6 μ A (0.01CV) max. (at W.V., After 2 min)
ESR	45 m Ω 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

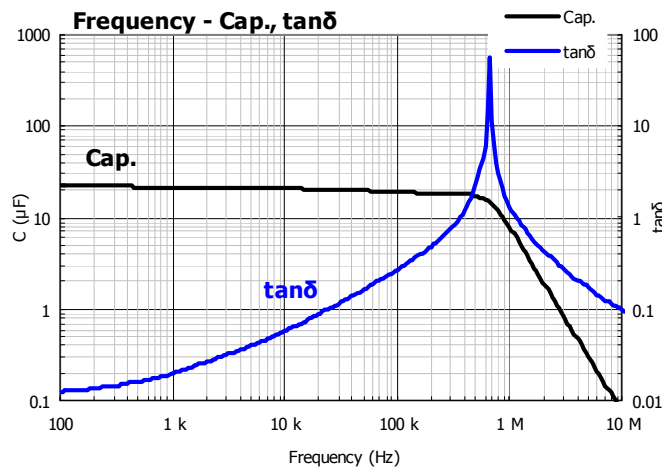
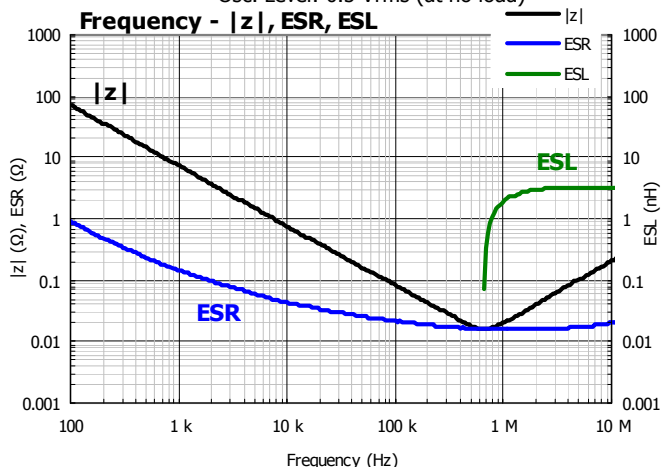


	(mm)
D	8.0
L	10.2 \pm 0.3
A, B	8.3
H	10.0 max.
I	3.4
W	0.9 \pm 0.2
P	3.1
K	0.7 \pm 0.2

(): Reference Size

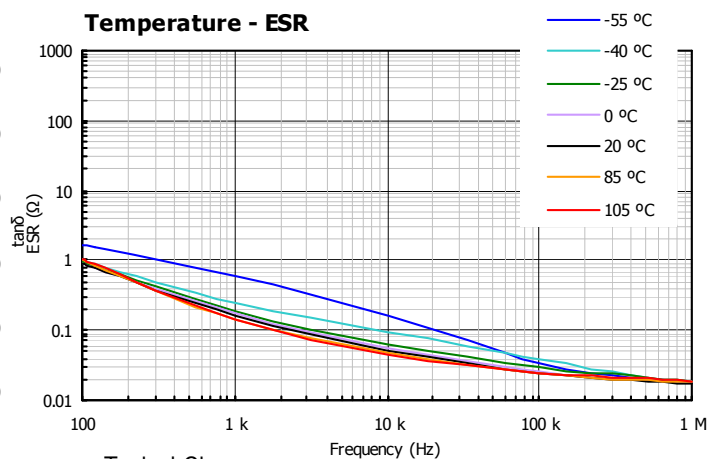
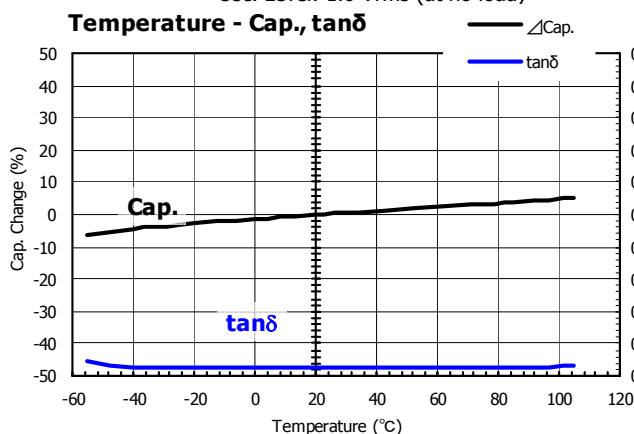
Frequency - |z|, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

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

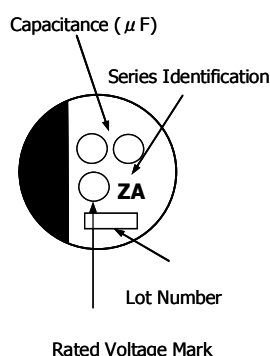
Part Number: EEHZA1K330P

$\phi 10.0 \times 10.2$ mm / 80 V / 33 μ F / 105 °C, 10000 h

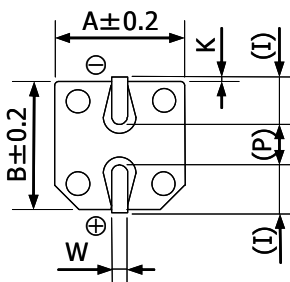
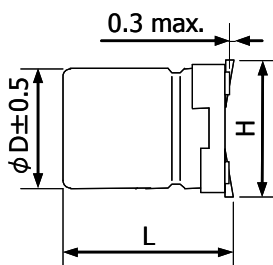
Category Temperature Range	-55 to 105 °C
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	33 μ F (at 120 Hz)
Capacitance Tolerance	± 20 %

$\tan \delta$	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)



Size Code: G

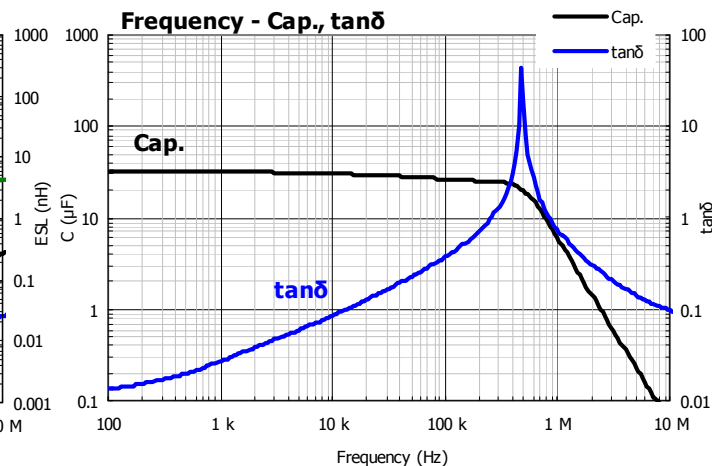
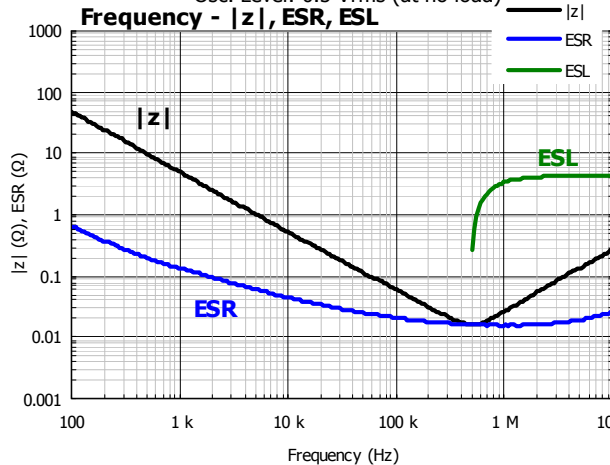


	(mm)
D	10.0
L	10.2 \pm 0.3
A, B	10.3
H	12.0 max.
I	3.5
W	0.9 \pm 0.2
P	4.6
K	0.7 \pm 0.2

(): Reference Size

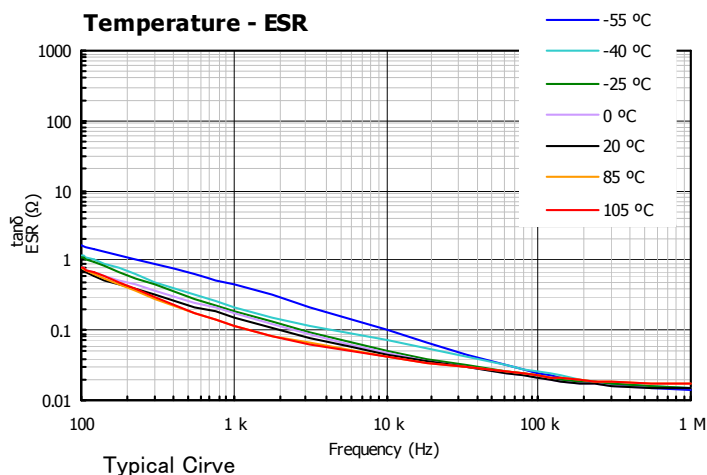
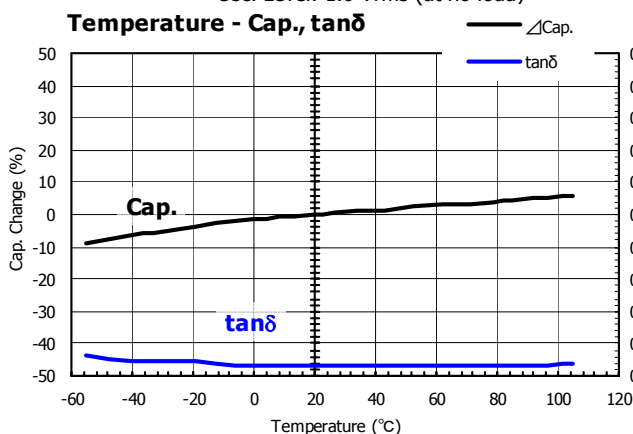
Frequency - $|z|$, ESR, ESL, Capacitance, $\tan \delta$ Characteristics

Osc. Level: 0.5 Vrms (at no load)



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

Osc. Level: 1.0 Vrms (at no load)



Typical Curve

M E M O

M E M O

M E M O

Technical Data of Conductive Polymer Hybrid
Aluminium Electrolytic Capacitors

The First edition : July 1st 2013

The Second edition : June 1st 2014

Yamaguchi Plant, Device Solutions Business Division
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