Panasonic

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

Technical Data ZC series





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



Technical Data

Conductive Polymer Hybrid Aluminum Electrolytic Capacitor

V type ZC series







EEHZC1E330R	25V33 μ F	ϕ 5x5.8	··· ZC-2
EEHZC1E560P	25V56µF	ϕ 6.3x5.8	··· ZC-3
EEHZC1E101XP	25V100µF	ϕ 6.3x7.7	··· ZC-4
EEHZC1E221P	25V220µF	ϕ 8x10.2	··· ZC-5
EEHZC1E331P	25V330µF	ϕ 10x10.2	··· ZC-6
EEHZC1V220R	35V22µF	ϕ 5x5.8	··· ZC-7
EEHZC1V470P	35V47µF	ϕ 6.3x5.8	··· ZC-8
EEHZC1V680XP	35V68µF	ϕ 6.3x7.7	··· ZC-9
EEHZC1V151P	35V150µF	ϕ 8x10.2	··· ZC-10
EEHZC1V271P	35V270µF	ϕ 10x10.2	··· ZC-11
EEHZC1H100R	50V10μF	ϕ 5x5.8	··· ZC-12
EEHZC1H220P	50V22µF	ϕ 6.3x5.8	··· ZC-13
EEHZC1H330XP	50V33μF	ϕ 6.3x7.7	··· ZC-14
EEHZC1H680P	50V68µF	ϕ 8x10.2	··· ZC-15
EEHZC1H101P	50V100µF	ϕ 10x10.2	··· ZC-16
EEHZC1H121P	50V12 0 μF	ϕ 10x10.2	··· ZC-17
EEHZC1J100P	63V10µF	ϕ 6.3x5.8	··· ZC-18
EEHZC1J220XP	63V22µF	ϕ 6.3x7.7	··· ZC-19
EEHZC1J330P	63V33µF	ϕ 8x10.2	··· ZC-20
EEHZC1J560P	63V56µF	ϕ 10x10.2	··· ZC-21
EEHZC1J680P	63V68µF	ϕ 10x10.2	··· ZC-22
EEHZC1K220P	80V22µF	ϕ 8x10.2	··· ZC-23
EEHZC1K330P	80V33µF	ϕ 10x10.2	··· ZC-24
EEHZC1K470P	80V47μF	φ 10x10.2	··· ZC-25

V type ZC series

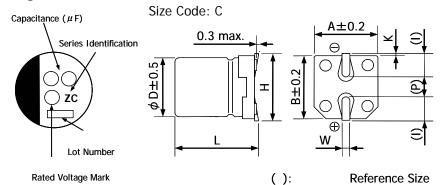
Part Number: EEHZC1E330R

 $\phi 5.0 \times 5.8 \text{ mm} / 25 \text{ V} / 33 \mu F / 125 ^{\circ}\text{C}, 4000 \text{ h}$

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	33 µF (at 120 Hz)
Capacitance Tolerance	±20 %

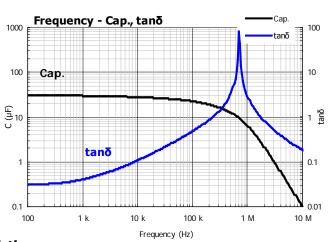
tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	8.2 µA (0.01CV) max. (at W.V., After 2 min)
ESR	80 mΩ max. (at 100 kHz)
Ripple Current	550 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)



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

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



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load) -55 °C Temperature - ESR Temperature - Cap., tanδ 40 °C 1000 50 0.50 -25 °C tanδ 40 0.45 0 °C 100 30 0.40 20 °C 20 0.35 Change (%) (3) 10 0.30 105 °C tanð ESR 0 0.25 125 °C 양 -10 0.20 -20 0.15 0.1 0.10 -30 -40 0.05 0.00 0.01 100 120 -60 -40 -20 20 40 60 140 10 k 100 k 1 M Temperature (°C) Frequency (Hz) Typical Cirve



— ZC−2 — Jun. 2014

V type ZC series

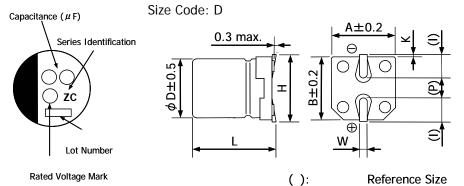
Part Number: EEHZC1E560P

 $\phi 6.3 \times 5.8 \text{ mm} / 25 \text{ V} / 56 \mu\text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 °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	900 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)



(mm)

D 6.3

L 5.8±0.3

A, B 6.6

H 7.8 max.

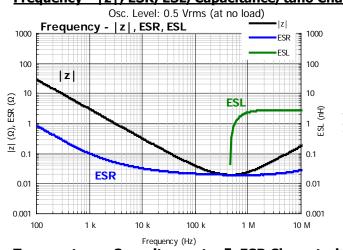
I 2.6

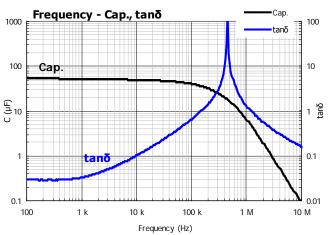
W 0.65±0.10

P 1.8

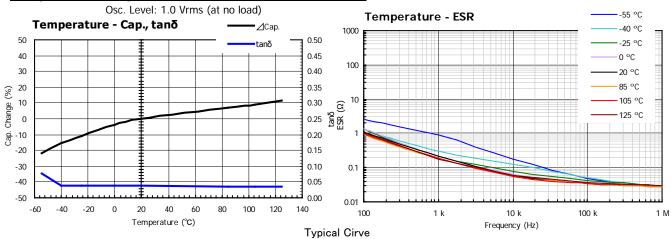
K 0.35+0.15/-0.20

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





Temperature - Capacitance, tanδ, ESR Characteristics





— ZC−3 — Jun. 2014

V type ZC series

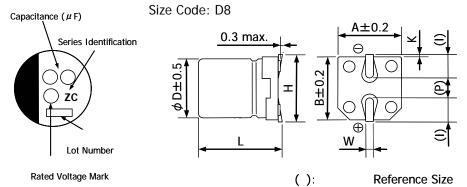
Part Number: EEHZC1E101XP

φ6.3×7.7 mm / 25 V / 100 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	100 µF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	25 µA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1400 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)



(mm)

D 6.3

L 7.7±0.3

A, B 6.6

H 7.8 max.

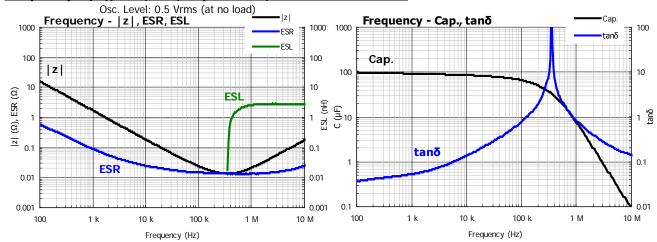
I 2.6

W 0.65±0.10

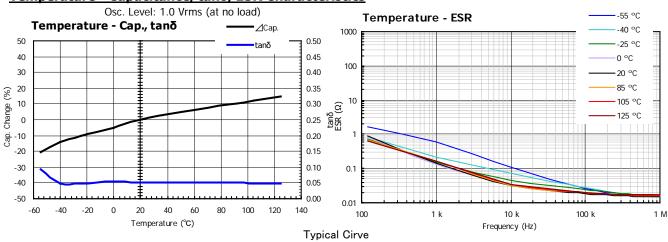
P 1.8

K 0.35+0.15/-0.20

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



Temperature - Capacitance, tanδ, ESR Characteristics





— ZC−4 — Jun. 2014

V type ZC series

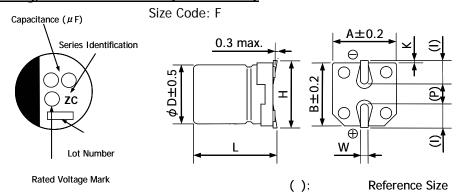
Part Number: EEHZC1E221P

 $\phi 8.0 \times 10.2$ mm / 25 V / 220 μF / 125 $^{\circ}C$, 4000 h

	1
Category Temperature Range	-55 to 125 ℃
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 μA (0.01CV) max. (at W.V., After 2 min)
ESR	27 mΩ max. (at 100 kHz)
Ripple Current	1600 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

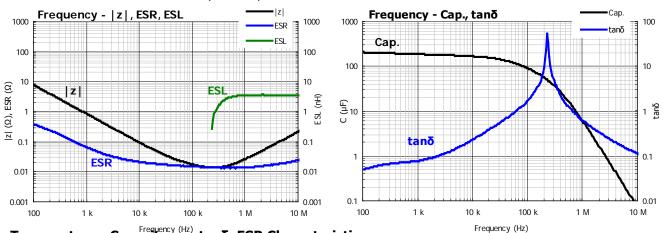
Marking, Dimensions in mm (not to scale)



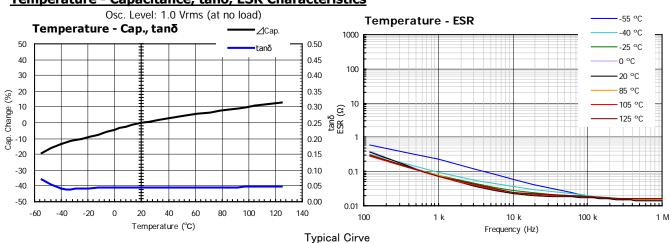
	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
Н	10.0 max.
Ī	3.4
W	0.9±0.2
Р	3.1
K	0.7±0.2

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

Osc. Level: 0.5 Vrms (at no load)



Temperature - Capacitance, tanδ, ESR Characteristics



— ZC−5 — Jun. 2014

V type ZC series

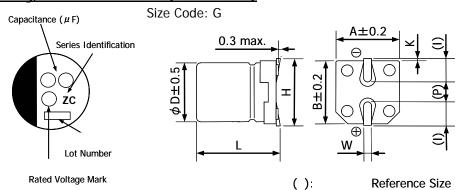
Part Number: EEHZC1E331P

 $\phi10.0\times10.2$ mm / 25 V / 330 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 25 V
Nominal Capacitance Range	330 µF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.14 max. (at 120 Hz)
DC Leakage Current	82.5 µA (0.01CV) max. (at W.V., After 2 min)
ESR	20 mΩ max. (at 100 kHz)
Ripple Current	2000 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)



	(mm)
D	10.0
L	10.2±0.3
A, B	10.3
Н	12.0 max.
Ī	3.5
W	0.9±0.2
Р	4.6
K	0.7±0.2

100

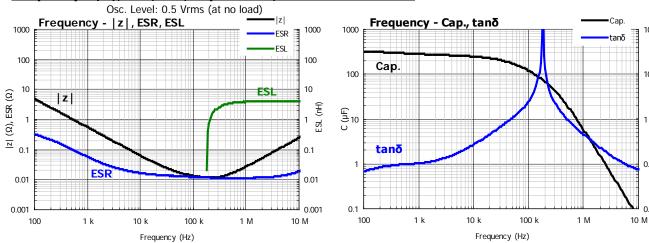
10

tang 1

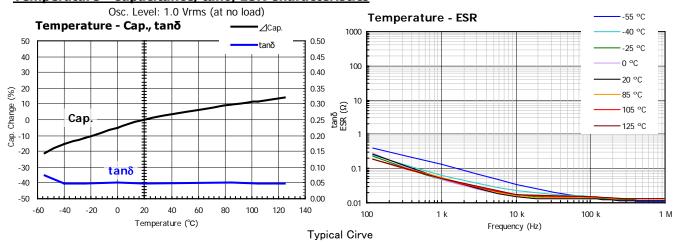
0.1

0.01

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



Temperature - Capacitance, tanδ, ESR Characteristics





- ZC-6 -Jun. 2014

V type ZC series

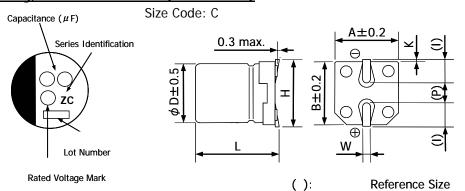
Part Number: EEHZC1V220R

 $\phi 5.0 \times 5.8 \text{ mm} / 35 \text{ V} / 22 \mu\text{F} / 125 ^{\circ}\text{C}, 4000 \text{ h}$

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

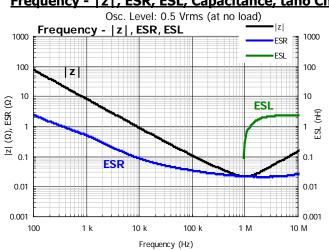
tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	7.7 µA (0.01CV) max. (at W.V., After 2 min)
ESR	100 mΩ max. (at 100 kHz)
Ripple Current	550 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

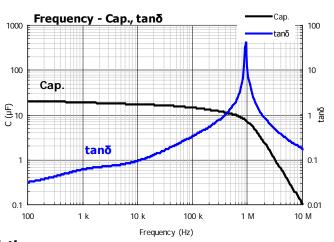
Marking, Dimensions in mm (not to scale)



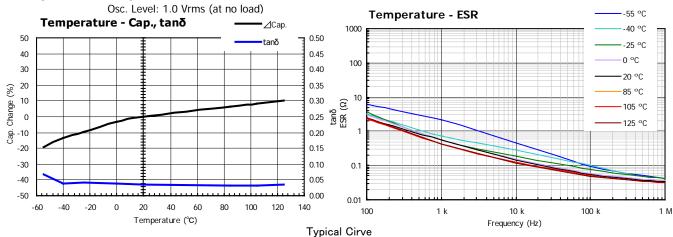
	(mm)
D	5.0
L	5.8±0.3
A, B	5.3
Н	6.5 max.
I	2.2
W	0.65±0.10
Р	1.5
K	0.35+0.15/-0.20

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





Temperature - Capacitance, tanδ, ESR Characteristics





− ZC−7 − Jun. 2014

V type ZC series

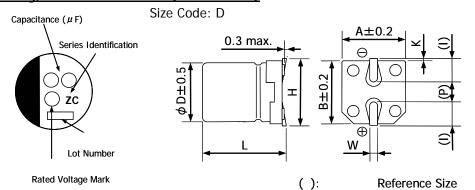
Part Number: EEHZC1V470P

 $\phi 6.3 \times 5.8$ mm / 35 V / 47 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	47 μF (at 120 Hz)
Capacitance Tolerance	±20 %

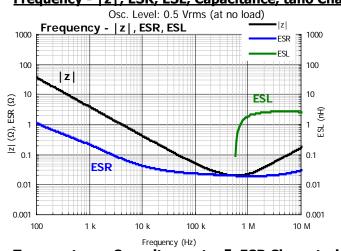
tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	16.4 µA (0.01CV) max. (at W.V., After 2 min)
ESR	60 mΩ max. (at 100 kHz)
Ripple Current	900 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

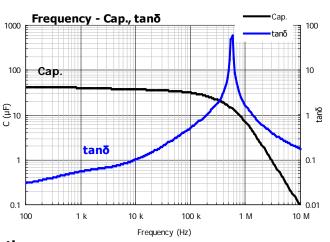
Marking, Dimensions in mm (not to scale)



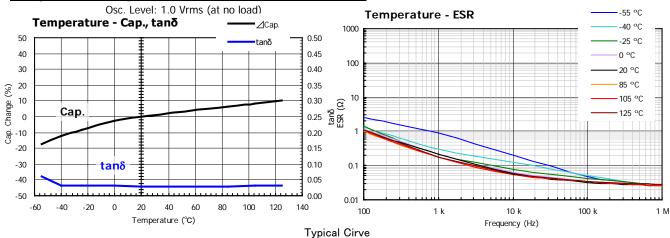
	(mm)
D	6.3
L	5.8±0.3
A, B	6.6
Н	7.8 max.
1	2.6
W	0.65±0.10
Р	1.8
K	0.35+0.15/-0.20

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





Temperature - Capacitance, tanδ, ESR Characteristics



- ZC-8 - Jun. 2014

V type ZC series

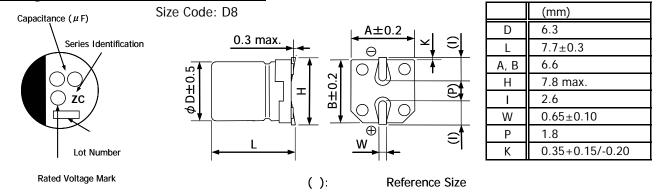
Part Number: EEHZC1V680XP

 $\phi 6.3 \times 7.7 \text{ mm} / 35 \text{ V} / 68 \mu F / 125 °C, 4000 h$

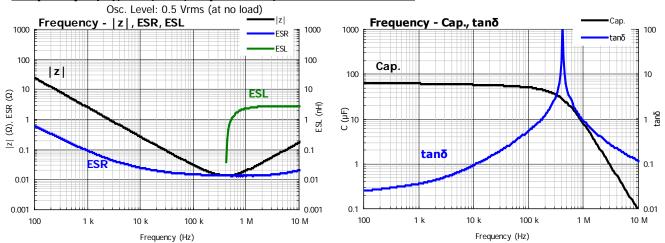
Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	68 μF (at 120 Hz)
Capacitance Tolerance	±20 %

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	1400 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

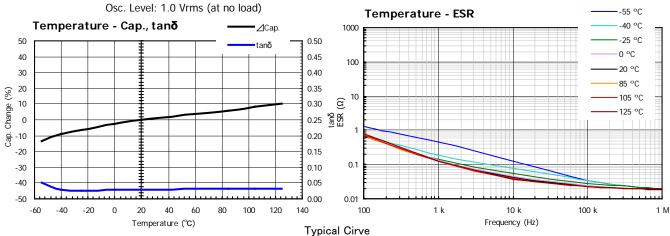
Marking, Dimensions in mm (not to scale)



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



Temperature - Capacitance, tanδ, ESR Characteristics





— ZC−9 — Jun. 2014

V type ZC series

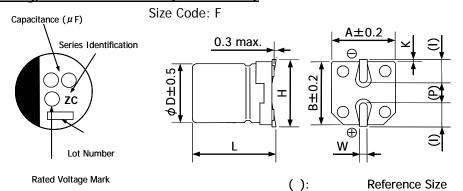
Part Number: EEHZC1V151P

 $\phi 8.0 \times 10.2 \text{ mm} / 35 \text{ V} / 150 \,\mu\text{F} / 125 \,^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 35 V
Nominal Capacitance Range	150 µF (at 120 Hz)
Capacitance Tolerance	±20 %

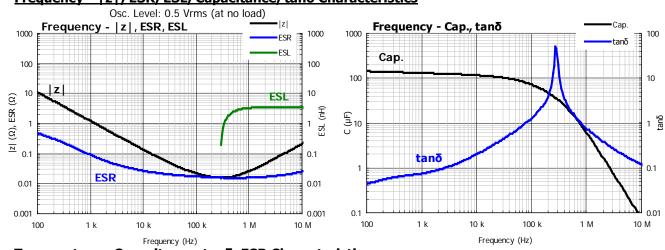
tanδ	0.12 max. (at 120 Hz)
DC Leakage Current	52.5 µA (0.01CV) max. (at W.V., After 2 min)
ESR	27 mΩ max. (at 100 kHz)
Ripple Current	1600 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

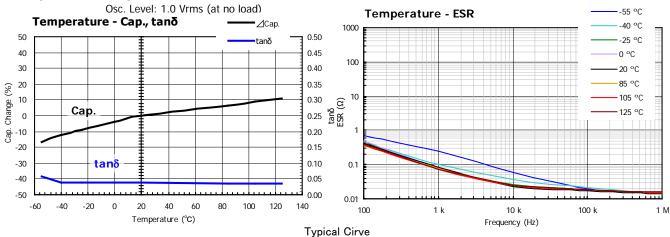
Marking, Dimensions in mm (not to scale)



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

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





V type ZC series

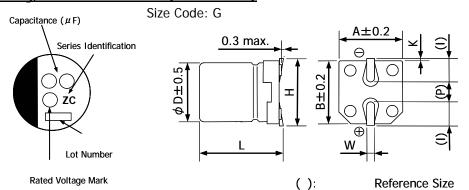
Part Number: EEHZC1V271P

 $\phi10.0\times10.2$ mm / 35 V / 270 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 ℃
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	2000 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 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.

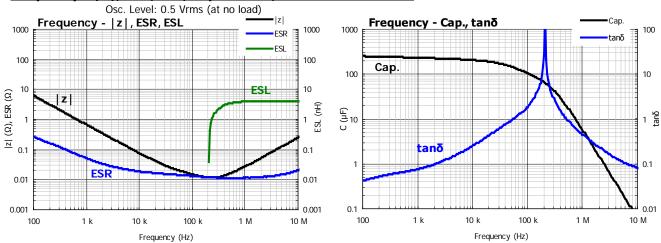
I 3.5

W 0.9±0.2

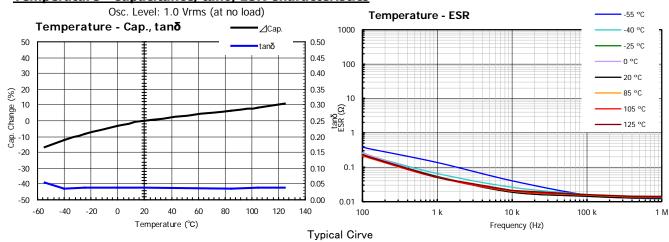
P 4.6

K 0.7±0.2

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



Temperature - Capacitance, tanδ, ESR Characteristics





- ZC-11 - Jun. 2013

V type ZC series

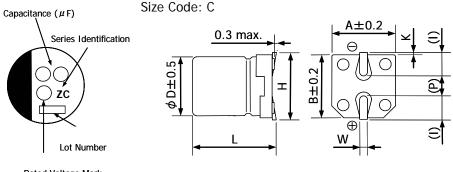
Part Number: EEHZC1H100R

 $\phi 5.0 \times 5.8 \text{ mm} / 50 \text{ V} / 10 \mu \text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 ℃
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	500 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)



(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

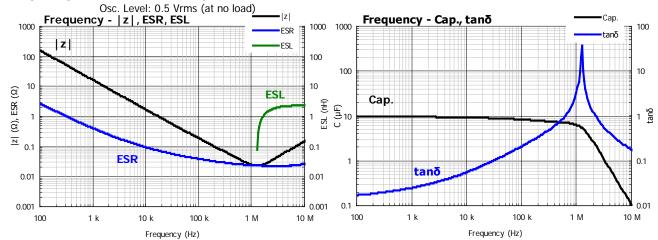
K 0.35+0.15/-0.20

Jun. 2014

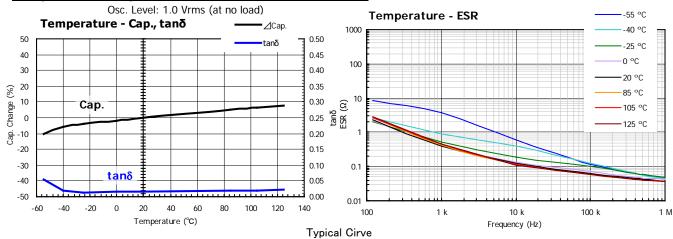
Rated Voltage Mark

(): Reference Size

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



Temperature - Capacitance, tanδ, ESR Characteristics





— ZC−12 —

V type ZC series

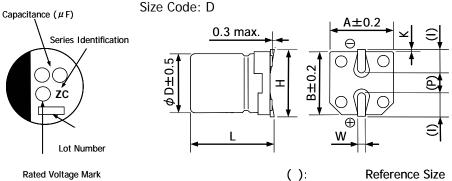
Part Number: EEHZC1H220P

 $\phi 6.3 \times 5.8 \text{ mm} / 50 \text{ V} / 22 \mu \text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 °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	750 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)

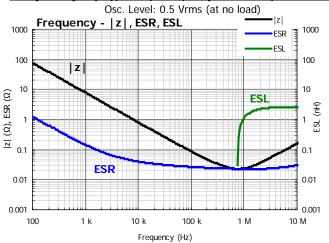


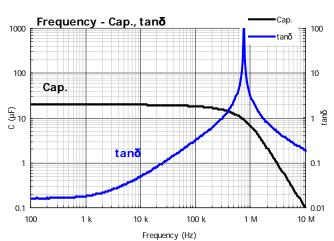
(mm) 6.3 D 5.8±0.3 L 6.6 A, B 7.8 max. Η 2.6 W 0.65 ± 0.10 1.8 0.35 + 0.15 / -0.20

Rated Voltage Mark

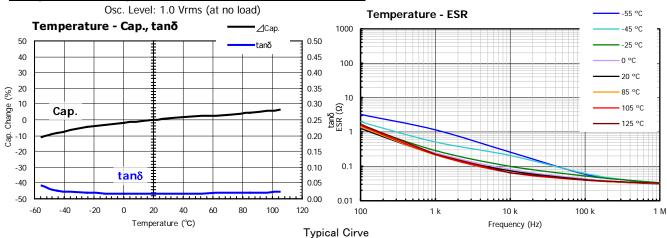
Reference Size

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





Temperature - Capacitance, tanδ, ESR Characteristics





- ZC-13 -

Jun. 2013

V type ZC series

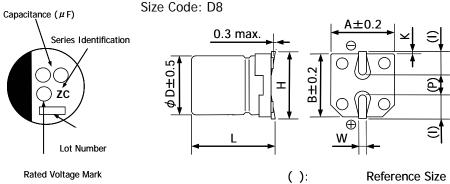
Part Number: EEHZC1H330XP

 $\phi 6.3 \times 7.7 \text{ mm} / 50 \text{ V} / 33 \mu \text{F} / 125 ^{\circ}\text{C}, 4000 \text{ h}$

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	33 µF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.10 max. (at 120 Hz)
DC Leakage Current	16.5 µA (0.01CV) max. (at W.V., After 2 min)
ESR	40 mΩ max. (at 100 kHz)
Ripple Current	1100 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)

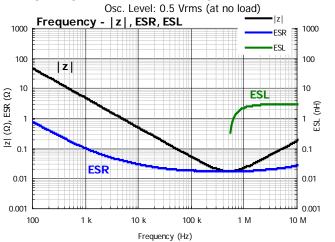


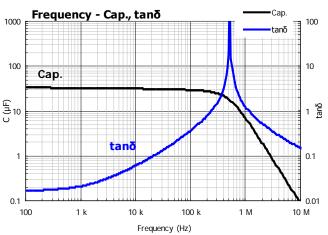
(mm) 6.3 D 7.7±0.3 L A, B 6.6 7.8 max. Η 2.6 W 0.65 ± 0.10 1.8 0.35 + 0.15 / -0.20

Rated Voltage Mark

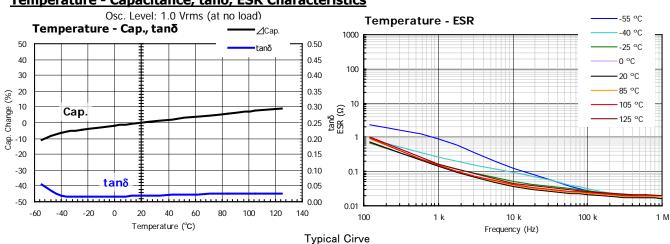
Reference Size

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





Temperature - Capacitance, tanδ, ESR Characteristics



- ZC-14 -Jun. 2014

V type ZC series

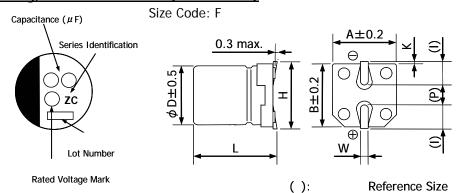
Part Number: EEHZC1H680P

 $\phi 8.0 \times 10.2 \text{ mm} / 50 \text{ V} / 68 \mu\text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	68 μF (at 120 Hz)
Capacitance Tolerance	±20 %

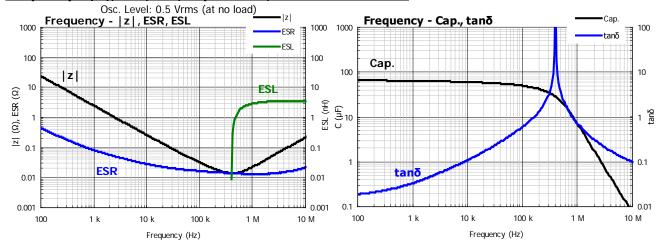
tanδ	0.1 max. (at 120 Hz)
DC Leakage Current	34 µA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1250 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

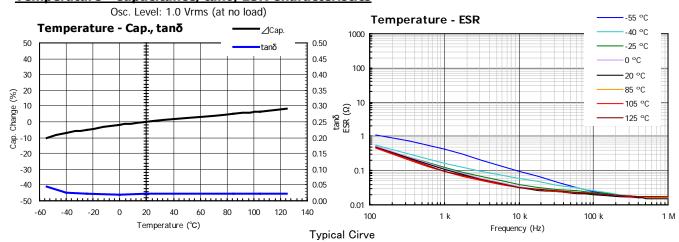
Marking, Dimensions in mm (not to scale)



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

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







V type ZC series

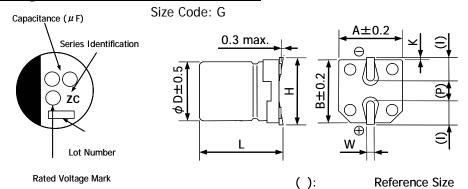
Part Number: EEHZC1H101P

 $\phi10.0\times10.2$ mm / 50 V / 100 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 50 V
Nominal Capacitance Range	100 µF (at 120 Hz)
Capacitance Tolerance	±20 %

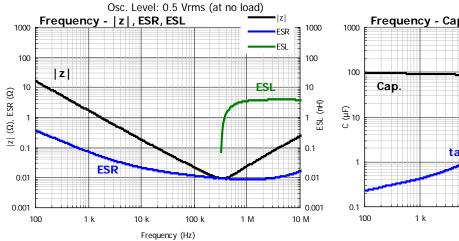
tanδ	0.1 max. (at 120 Hz)
DC Leakage Current	50 μA (0.01CV) max. (at W.V., After 2 min)
ESR	28 mΩ max. (at 100 kHz)
Ripple Current	1600 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

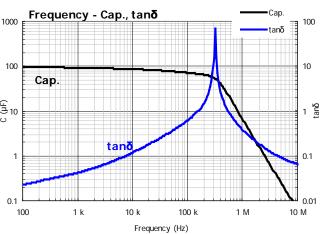
Marking, Dimensions in mm (not to scale)

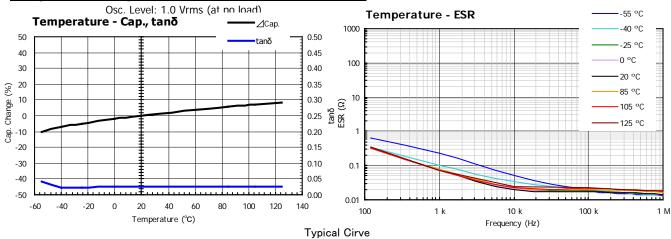


	(mm)
D	10.0
L	10.2±0.3
A, B	10.3
Н	12.0 max.
I	3.5
W	0.9±0.2
Р	4.6
K	0.7±0.2

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







V type ZC series

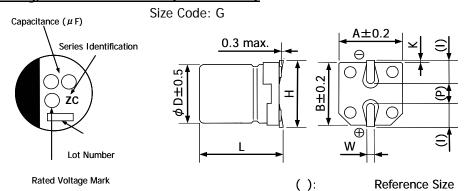
Part Number: EEHZC1H121P

 $\phi10.0\times10.2$ mm / 50 V / 120 μF / 125 °C, 4000 h

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

tanδ	0.10 max. (at 120 Hz)
DC Leakage Current	60.0 μA (0.01CV) max. (at W.V., After 2 min)
ESR	28 mΩ max. (at 100 kHz)
Ripple Current	1600 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 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

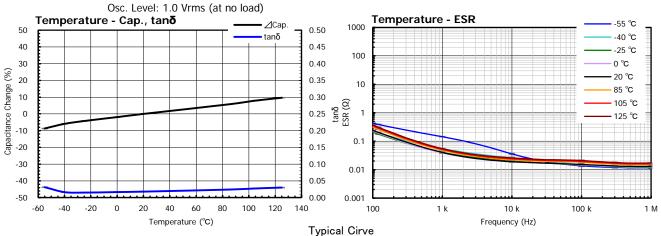
P 4.6

K 0.7±0.2

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

Osc. Level: 0.5 Vrms (at no load) Frequency - Cap., tanδ Frequency - |z|, ESR, ESL Cap. 1000 10000 1000 100 tanδ FSR FSL 100 1000 | z | 10 10 (Ω) , ESR (Ω) Cap. **ESL** ESL (PH) C (PH) 0 anδ 0.1 0.1 10 0.1 **ESR** 0.01 0.01 0.001 0.001 0.01 10 k 100 k 100 1 k 10 k 10 M 10 M 100 k Frequency (Hz) Frequency (Hz)

Temperature - Capacitance, tanδ, ESR Characteristics



— ZC-17 — Mar. 2016

V type ZC series

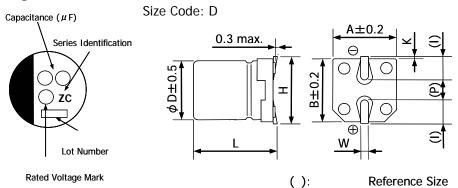
Part Number: EEHZC1J100P

 $\phi 6.3 \times 5.8 \text{ mm} / 63 \text{ V} / 10 \mu \text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	10 μF (at 120 Hz)
Capacitance Tolerance	±20 %

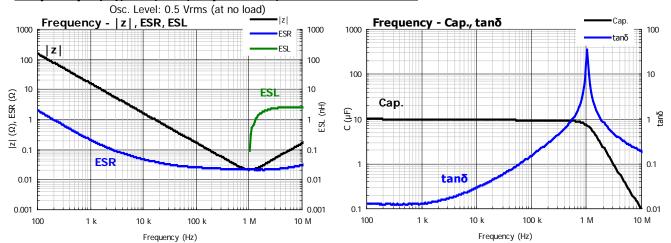
tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	6.3 µA (0.01CV) max. (at W.V., After 2 min)
ESR	120 mΩ max. (at 100 kHz)
Ripple Current	700 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)

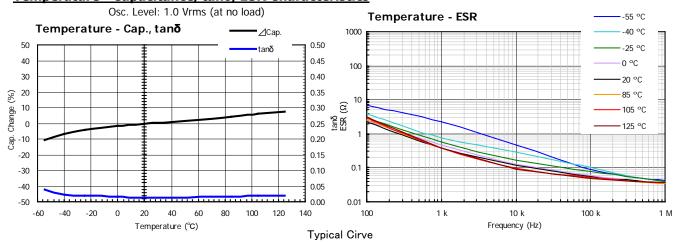


(mm) D 6.3 5.8±0.3 ı 6.6 A, B 7.8 max. Η 2.6 W 0.65 ± 0.10 1.8 0.35 + 0.15 / -0.20

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



Temperature - Capacitance, tanδ, ESR Characteristics





- ZC-18 -Jun. 2014

V type ZC series

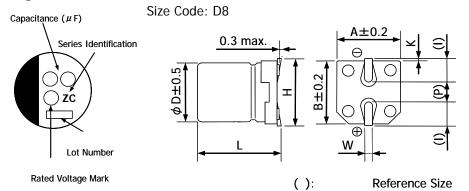
Part Number: EEHZC1J220XP

 $\phi 6.3 \times 7.7 \text{ mm} / 63 \text{ V} / 22 \mu \text{F} / 125 ^{\circ}\text{C}$, 4000 h

	T
Category Temperature Range	-55 to 125 °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	900 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)



(mm)

D 6.3

L 7.7±0.3

A, B 6.6

H 7.8 max.

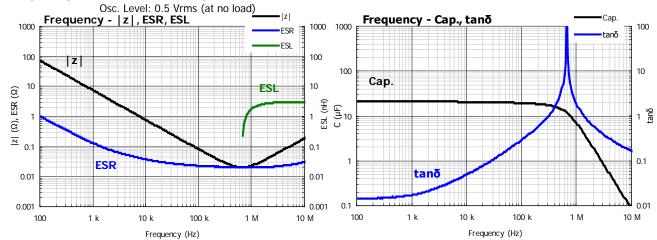
I 2.6

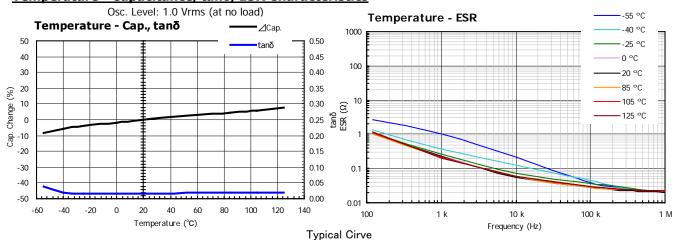
W 0.65±0.10

P 1.8

K 0.35+0.15/-0.20

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







V type ZC series

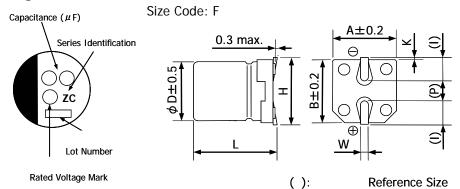
Part Number: EEHZC1J330P

 $\phi 8.0 \times 10.2 \text{ mm} / 63 \text{ V} / 33 \mu F / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	33 μF (at 120 Hz)
Capacitance Tolerance	±20 %

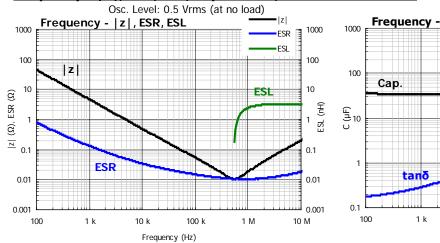
tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	20.7 μA (0.01CV) max. (at W.V., After 2 min)
ESR	40 mΩ max. (at 100 kHz)
Ripple Current	1100 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

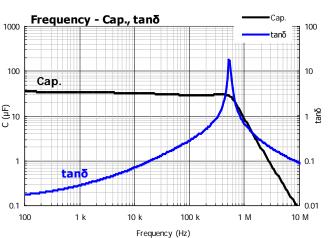
Marking, Dimensions in mm (not to scale)

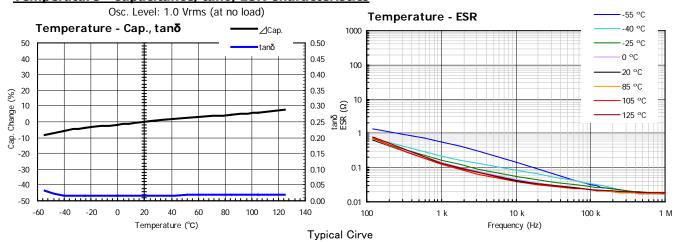


	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
Н	10.0 max.
ı	3.4
W	0.9±0.2
Р	3.1
K	0.7±0.2

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







V type ZC series

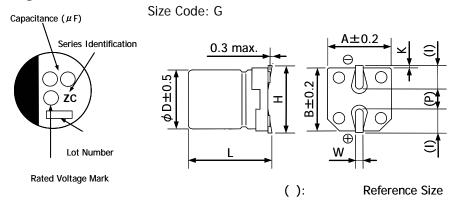
Part Number: EEHZC1J560P

 ϕ 10.0×10.2 mm / 63 V / 56 μ F / 125 °C, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	56 μF (at 120 Hz)
Capacitance Tolerance	±20 %

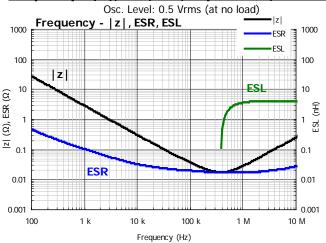
tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	35.2 μA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1400 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

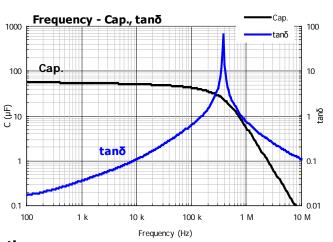
Marking, Dimensions in mm (not to scale)



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

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





Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load) **Temperature - ESR** -55 °C Temperature - Cap., tanδ ■ ∠Cap 1000 40 °C 50 0.50 -25 °C tanδ 40 0.45 0 °C 30 0.40 20 °C 0.35 Cap. Change (%) 85 °C <u>a</u> 0.30 105 °C 0.25 tan 82.0 0 -10 0.20 -20 0.15 -30 0.10 0.1 0.05 0.00 0.01 100 120 -60 -40 -20 20 40 60 140 10 k 100 k 1 k 1 M Temperature (°C) Frequency (Hz) Typical Cirve



- ZC-21 - Jun. 2014

V type ZC series

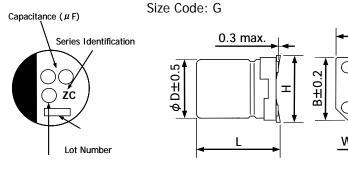
Part Number: EEHZC1J680P

 $\phi10.0\times10.2$ mm / 63 V / 68 μF / 125 °C, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 63 V
Nominal Capacitance Range	68 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	42.8 µA (0.01CV) max. (at W.V., After 2 min)
ESR	30 mΩ max. (at 100 kHz)
Ripple Current	1400 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)



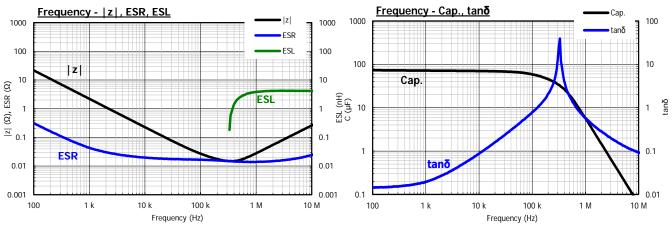
	(mm)
D	10.0
L	10.2±0.3
A, B	10.3
Н	12.0 max.
1	3.5
W	0.9±0.2
Р	4.6
K	0.7±0.2

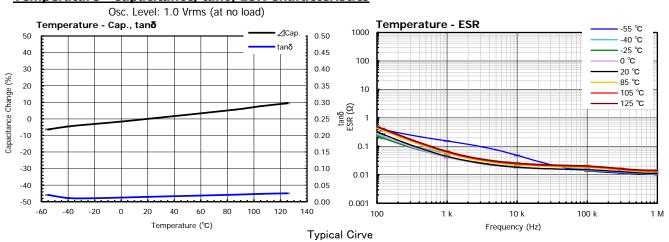
Rated Voltage Mark

(): Reference Size

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

Osc. Level: 0.5 Vrms (at no load)





V type ZC series

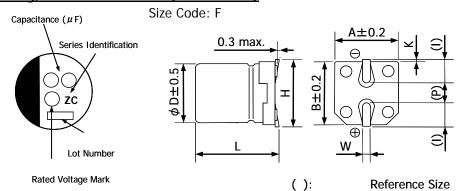
Part Number: EEHZC1K220P

 $\phi 8.0 \times 10.2 \text{ mm} / 80 \text{ V} / 22 \mu\text{F} / 125 ^{\circ}\text{C}$, 4000 h

Category Temperature Range	-55 to 125 ℃
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	22 μF (at 120 Hz)
Capacitance Tolerance	±20 %

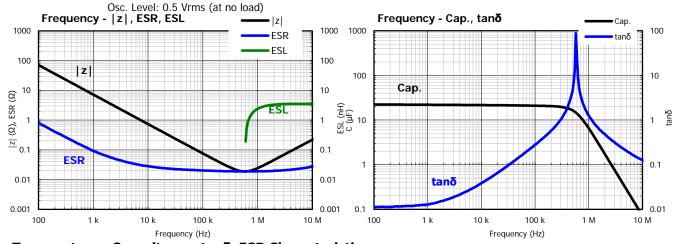
tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	17.6 µA (0.01CV) max. (at W.V., After 2 min)
ESR	45 mΩ max. (at 100 kHz)
Ripple Current	1050 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)



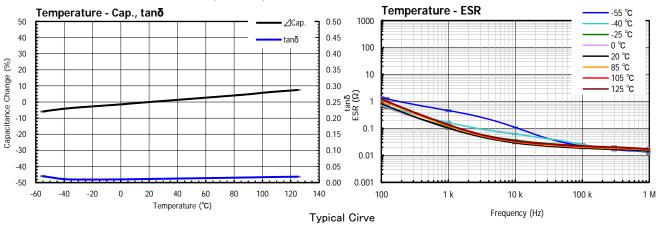
	(mm)
D	8.0
L	10.2±0.3
A, B	8.3
Н	10.0 max.
I	3.4
W	0.9±0.2
Р	3.1
K	0.7±0.2

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



Temperature - Capacitance, tanδ, ESR Characteristics

Osc. Level: 1.0 Vrms (at no load)



- ZC-23 - Mar. 2016

V type ZC series

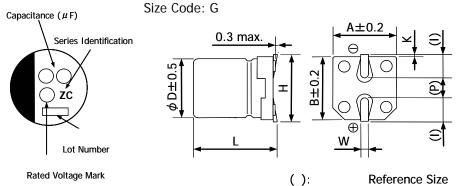
Part Number: EEHZC1K330P

 ϕ 10.0×10.2 mm / 80 V / 33 μ F / 125 °C, 4000 h

-55 to 125 ℃
DC 80 V
33 µF (at 120 Hz)
±20 %

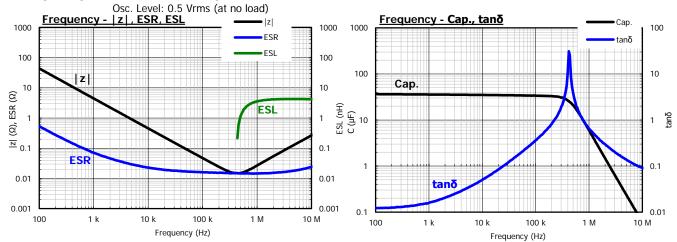
tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	26.4 µA (0.01CV) max. (at W.V., After 2 min)
ESR	36 mΩ max. (at 100 kHz)
Ripple Current	1360 mArms max. (at 100 kHz, 125 °C)
Endurance	125 ℃, 4000 h

Marking, Dimensions in mm (not to scale)

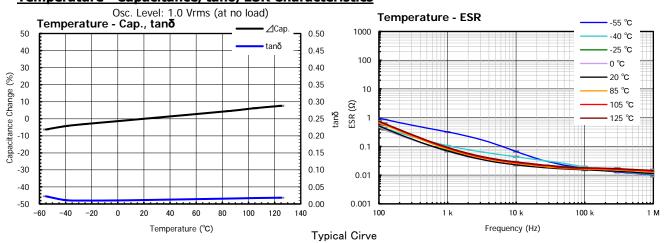


(mm) 10.0 D 10.2±0.3 L A, B 10.3 12.0 max. Η 3.5 W 0.9 ± 0.2 4.6 0.7 ± 0.2

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



Temperature - Capacitance, tanδ, ESR Characteristics





- ZC-24 -Mar. 2016

V type ZC series

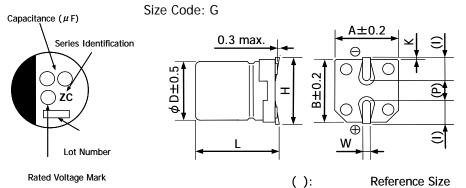
Part Number: EEHZC1K470P

 ϕ 10.0×10.2 mm / 80 V / 47 μ F / 125 °C, 4000 h

Category Temperature Range	-55 to 125 °C
Rated W.V. Range	DC 80 V
Nominal Capacitance Range	47 μF (at 120 Hz)
Capacitance Tolerance	±20 %

tanδ	0.08 max. (at 120 Hz)
DC Leakage Current	37.6 μA (0.01CV) max. (at W.V., After 2 min)
ESR	36 mΩ max. (at 100 kHz)
Ripple Current	1360 mArms max. (at 100 kHz, 125 °C)
Endurance	125 °C, 4000 h

Marking, Dimensions in mm (not to scale)



(mm)

D 10.0

L 10.2±0.3

A, B 10.3

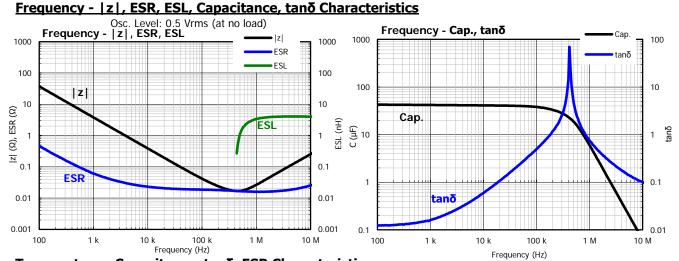
H 12.0 max.

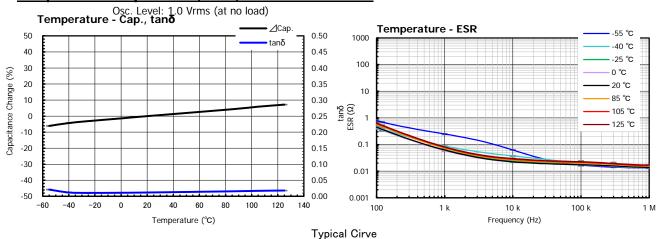
I 3.5

W 0.9±0.2

P 4.6

K 0.7±0.2







M E M O



M E M O



M E M O



Technical Data of Conductive Polymer Hybrid Aluminum Electrolytic Capacitors

The first edition : July 1st 2013 The revised edition : March 1st 2016

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Device Solutions Business Division
Tel: +81-83-922-8121

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