

TECHNICAL DATA

Metal Film Chip Resistor, High Reliability Type

ERA3A Type(1608 Size)

1. Temperature Coefficient of Resistance
2. Short Time Overload
3. Bending Strength
4. Resistance to Soldering Heat
5. High Temperature Exposure
6. Temperature Cycling
7. Humidity
8. Load Life
9. Load Life in Humidity

Panasonic Electronic Devices Co.,Ltd.
Circuit Components Business Unit

APPROVAL	CHECKED	DESIGN
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TECHNICAL DATA

ERA3A Type (1608 Size)

1. Temperature Coefficient of

Resistance

Hot : 25 to 125°C ●

Cold : -55 to 125°C ○

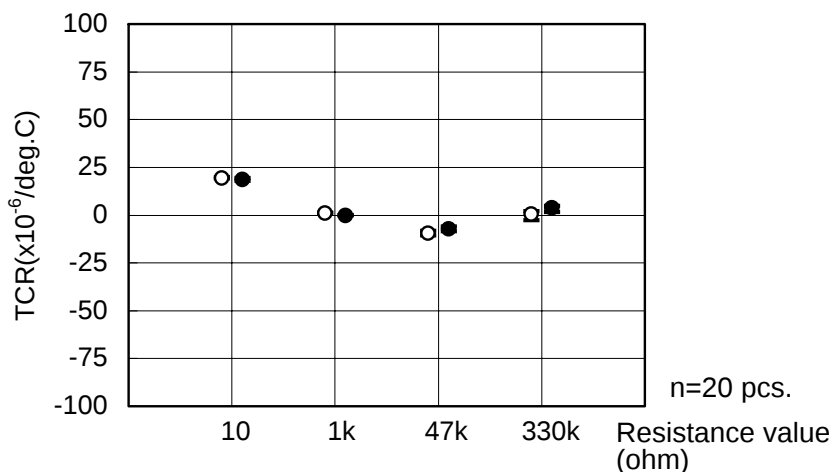
<Specification>

Resistance Range 10Ω ~ 43Ω :

$\pm 50 \times 10^{-6} / ^\circ\text{C}$

Resistance Range 47Ω ~ 330kΩ :

$\pm 25 \times 10^{-6} / ^\circ\text{C}$



2. Short Time Overload

Rated Voltage^{*1} × 2.5 times,
5 seconds

(*1 Maximum Overloaded Voltage
:150V)

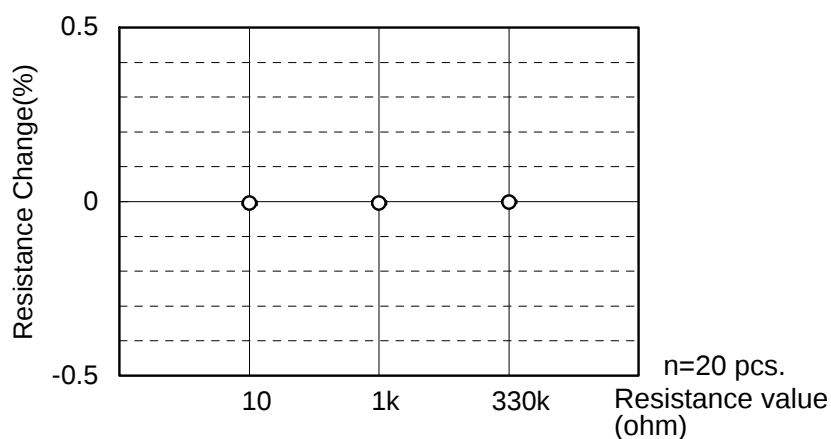
<Specification>

Resistance tolerance $\pm 0.5\%$:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance $\pm 0.1\%$:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$



3. Bending strength

Substrate : Glass epoxy, t=1.6mm

Bending distance : 3mm

Bending time : 10 seconds

<Specification>

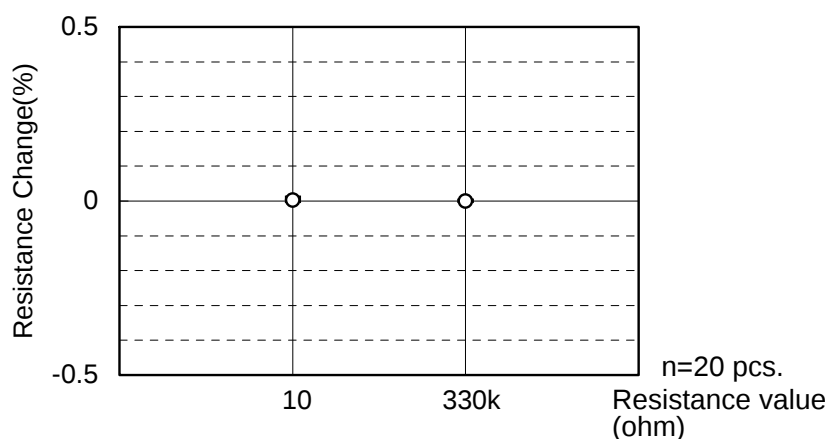
Resistance tolerance $\pm 0.5\%$:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance $\pm 0.1\%$:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

and no mechanical damage



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4. Resistance to Soldering Heat

Solder bath : 270°C ± 3°C

Dipping time : 10 s ± 1 s

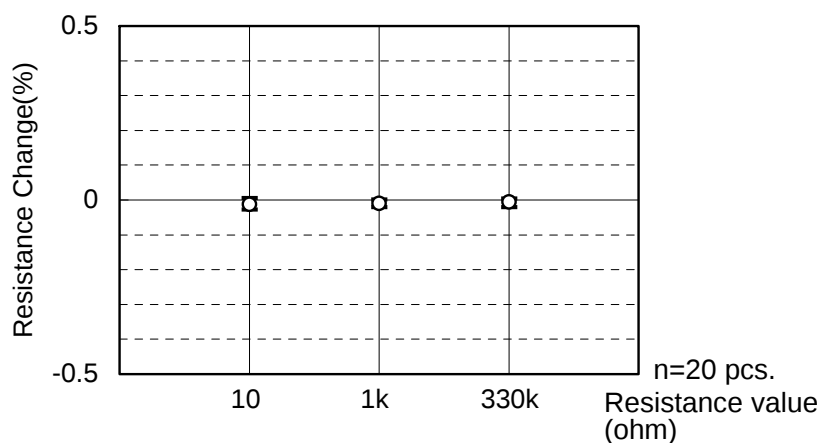
<Specification>

Resistance tolerance ±0.5%:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$



5. High Temperature Exposure

155 °C, 1000 hours,

without load

<Specification>

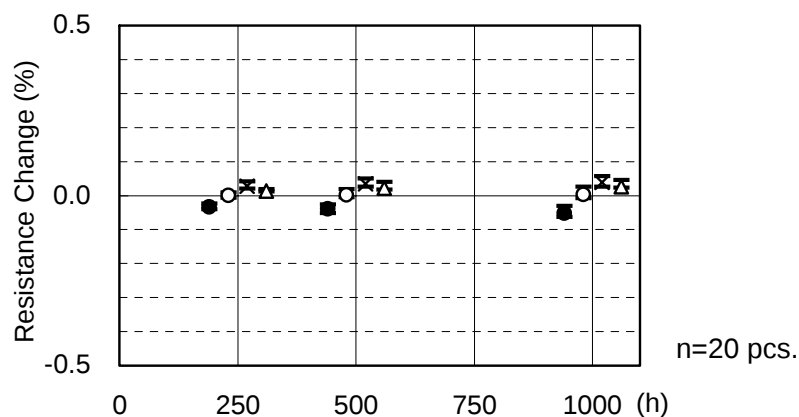
Resistance tolerance ±0.5%:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

● : 10 Ω ○ : 1k Ω
× : 47kΩ : 330kΩ



6. Temperature Cycling

-55 °C 30 minutes

↓ ↑

155 °C 30 minutes

<Specification>

Resistance tolerance ±0.5%:

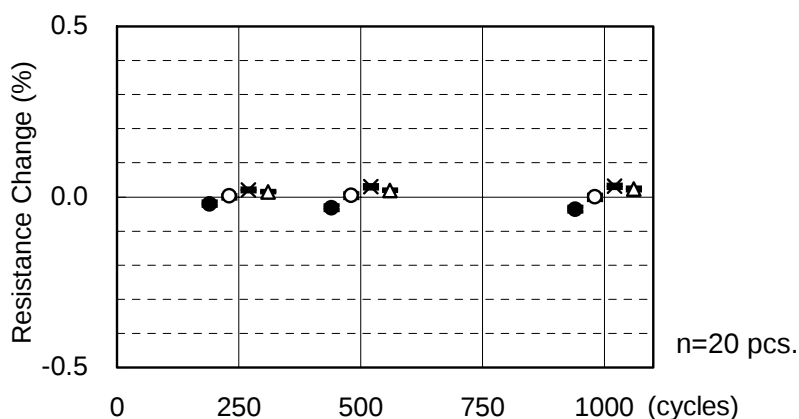
$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

for 5 cycles

● : 10 Ω ○ : 1k Ω
× : 47kΩ : 330kΩ



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7. Humidity

85 °C ± 2 °C, 85%RH

1000 hours, without load

<Specification>

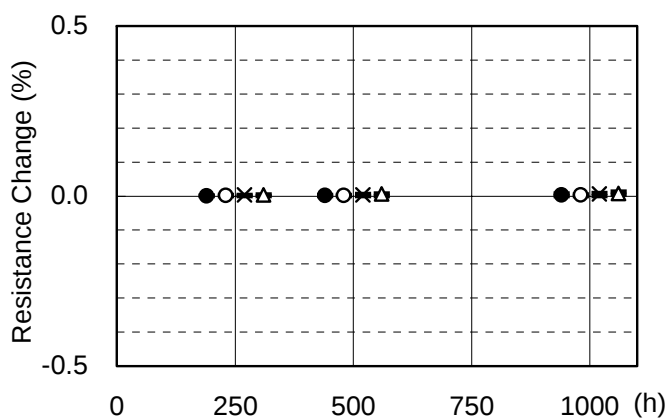
Resistance tolerance ±0.5%:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

● : 10 Ω ○ : 1k Ω
 × : 47k Ω : 330k Ω



n=20 pcs.

8. Load Life

RCWV 1.5 hours ON -

0.5 hours OFF, at 70 °C ± 2 °C

1000 hours

<Specification>

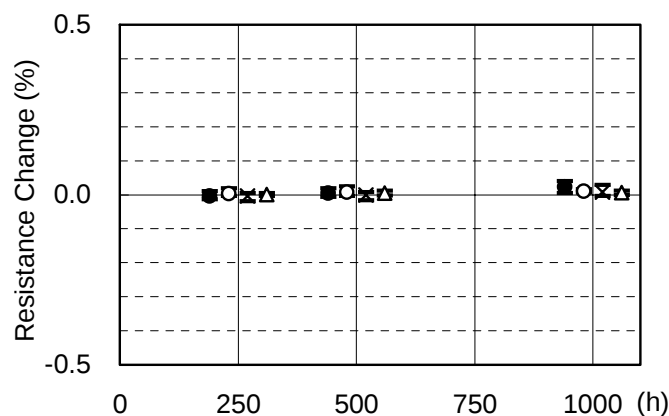
Resistance tolerance ±0.5%:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

● : 10 Ω ○ : 1k Ω
 × : 47k Ω : 330k Ω



n=20 pcs.

9. Load Life in Humidity

RCWV 1.5 hours ON - 0.5 hours OFF, at

85 °C ± 2 °C, 85%RH, 1000 hours

Applied Voltage:

10 to 100k Ω : Rated voltage

Over 100k Ω : 23.7V

<Specification>

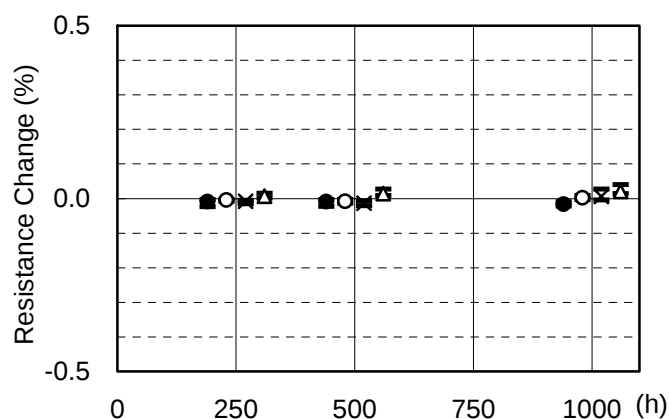
Resistance tolerance ±0.5%:

$\Delta R : \pm (0.5\% + 0.05 \Omega)$

Resistance tolerance ±0.1%:

$\Delta R : \pm (0.1\% + 0.05 \Omega)$

● : 10 Ω ○ : 1k Ω
 × : 47k Ω : 330k Ω



n=20 pcs.