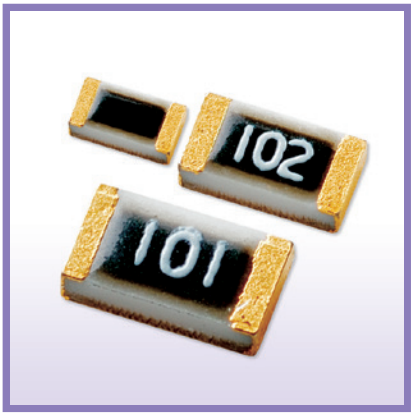


High temperature thin film chip resistors

■RGA series

AEC-Q200 Compliant

Features

- Conductive epoxy compatible
- Operating temperature up to 230°C
- Resistance tolerance: ±0.1%, TCR: ±10ppm/°C
- Thin film structure enabling low noise and anti-sulfur

Applications

- Automotive electronics
- Equipment used in high temperature
- Downhole drilling

◆Part numbering system

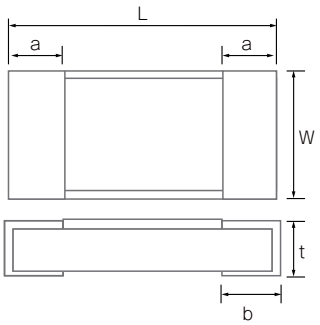
RGA 2012 N - 104 - B - T1

- RGA — Series code
- 2012 — Size: RGA1005, RGA1608,RGA2012
- N — Temperature coefficient of resistance
- 104 — Nominal resistance value (E-24: 3digit, E-96: 4digit)
- B — Resistance tolerance
- T1 — Packaging quantity: T1(1,000pcs), T5(5,000pcs)

◆Electrical Specification

Type	Power ratings	Temperature coefficient of resistance (ppm/°C)	Resistance range(Ω) Resistance tolerance ±0.1% (B)	±0.5% (D)	Maximum voltage	Resistance value series	Operating temperature	Packaging quantity
RGA1005	1/32W	±10(N)	47≦R≦100k		50V	E-24, E-96	-55℃ ~ 230℃	T1
		±25(P)						T5
RGA1608	1/16W	±10(N)	47≦R≦274k		100V			
		±25(P)	47≦R≦332k	47≦R≦360k				
RGA2012	1/10W	±10(N)	47≦R≦475k		150V			
		±25(P)	47≦R≦475k	47≦R≦1M				

◆Dimensions



Type	Size (inch)	L	W	a	b	t
RGA1005	0402	1.00+0.1/-0.05	0.50±0.05	0.20±0.10	0.25±0.05	0.35±0.05
RGA1608	0603	1.60±0.20	0.80+0.25/−0.20	0.30±0.20	0.30±0.20	0.40+0.15/−0.10
RGA2012	0805	2.00±0.20	1.25+0.25/−0.20	0.40±0.20	0.40±0.20	0.40+0.15/−0.10

(unit : mm)

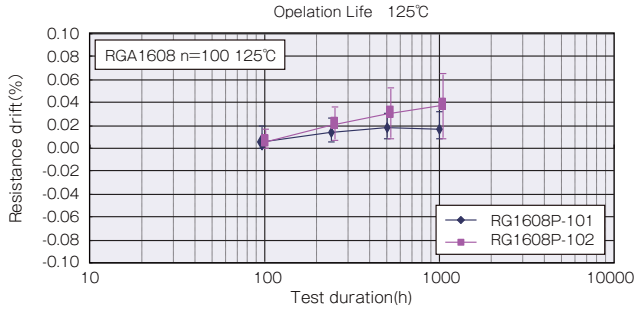
◆Reliability specification

Test items	Condition (test methods (MIL-PRF-55342/JIS C5201-1)	Standard
Short time overload	2.5 x rated voltage,*1 5seconds	±(0.1%+0.01Ω)
Life (biased)	125℃, rated voltage,*1 90min on 30min off, 1000hours	±(0.2%+0.05Ω)
High temperature high humidity	85℃, 85%RH, 1/10 of rated power, 90min on 30min off, 1000hours	±(0.2%+0.01Ω)
Temperature shock	-55℃ (30min) ~ 125℃ (30min) 1000cycles	±(0.2%+0.01Ω)
High temperature exposure	155℃, no bias, 1000hours	±(0.2%+0.05Ω)
Vibration	Frequency 10Hz ~ 500Hz, vibration amplitude 1.5mm or acceleration 10gn test duration for each of 3 axis: 6 hours	±(0.2%+0.05Ω)
Resistance to soldering heat	260±5℃, 10 seconds (reflow)	±(0.5%+0.01Ω)

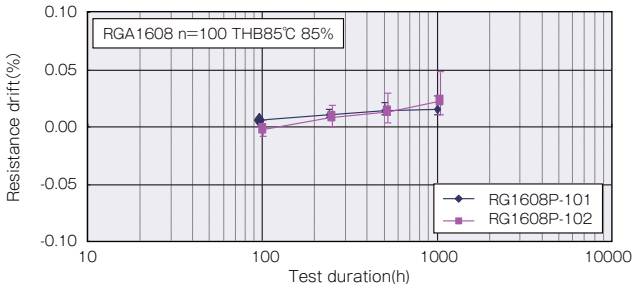
*1 Rated voltage is given by $E=\sqrt{R \times P}$
E= rated voltage (V), R=nominal resistance value(Ω), P=rated power(W)
If rated voltage exceeds maximum voltage /element, maximum voltage/element is the rated voltage.

◆Reliability test data

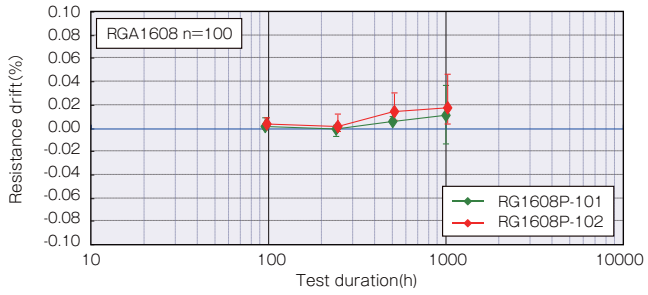
○Biased life test



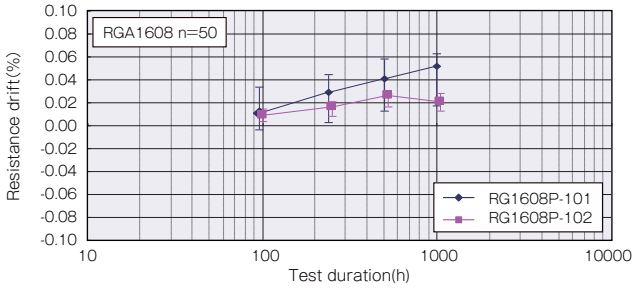
○High temperature high humidity (biased)



○Temperature shock



○High temperature exposure



◆Derating Curve