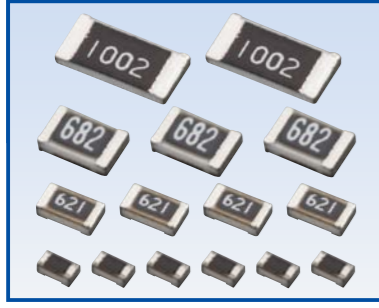


# Metal thin film chip resistors (Ultra-precision)

■ RG series (This series now includes the former RGH series.) AEC-Q200 Compliant



## Features

- Ultimate chip resistors: the result of all of our thin film technology expertise including inorganic passivation
- Resistance drift: less than +/-0.1% after 10000 hour accelerated reliability test
- +/-0.02% of resistance tolerance and +/-5ppm/°C of temperature coefficient of resistance
- Excellent tolerance to power surges

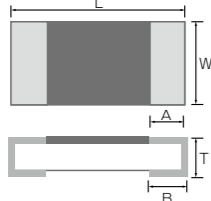
## Applications

- Any applications that require precision resistors such as automotive electronics, industrial test and measurement equipment, and consumer electronics

## Specifications

\*Standard stock item: E-24 series with TOR P, Q, and R grades, as well as tolerance D and B grades. Other E-24 grades and E-96 series are made to order

### Dimensions



Dimension (inch)	RG1005 (0402) OLD:RGH1005-2B included	RG1608 (0603) OLD:RGH1608-2C included	RG2012 (0805) OLD:RGH2012-2E included	RG3216 (1206)
L	1.00±0.05	1.60±0.20	2.00±0.20	3.20±0.20
W	0.50±0.05	0.80±0.20	1.25±0.20	1.60±0.20
A	0.20±0.10	0.30±0.20	0.40±0.20	0.50±0.25
B	0.25±0.05	0.30±0.20	0.40±0.20	0.50±0.20
T	0.35±0.05	0.40±0.10	0.40±0.10	0.40±0.10

NOTE Obsolete: RGH1005-2B (0402) RGH1608-2C (0603) RGH2012-2E (0805)  
Alternative P/N: RG1005 (0402) RG1608 (0603) RG2012 (0805)

### Electrical characteristics

Series name	RG1005				RG1608						
Rated power*1	High power application Regular power application High precision	1/8W (OLD: RGH1005-2B) 1/16W 1/32W			1/6W (OLD: RGH1608-2C) 1/10W 1/16W						
E series offered	E-24, E-96										
Resistance range (Ω)	10~46.4	47~97.6	100~2.94k	3k~100k	10~46.4	47~97.6	100~4.99k	5.1k~270k	274k~332k	340k~360k	
Resistance tolerance (%)	±0.02% (P) ±0.05% (W) ±0.1% (B) ±0.25% (C) ±0.5% (D)	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Temperature coefficient of resistance (ppm/°C)	±5 (V) ±10 (N) ±25 (P) ±50 (Q) ±100 (R)	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Maximum voltage	75V				100V						
Operating temperature	-55°C~155°C				-55°C~155°C						
Packaging	5,000pcs 10,000pcs	CodeT5 CodeT10			CodeT5						

Series name	RG2012				RG3216					
Rated power*1	High power application Regular power application High precision	1/4W (OLD: RGH2012-2E) 1/8W 1/10W			1/4W 1/8W					
E series offered	E-24, E-96									
Resistance range (Ω)	10~46.4	47~97.6	100~10k	10.2k~475k	487k~1M	10~46.4	47~97.6	100~33.2k	34k~1M	
Resistance tolerance (%)	±0.02% (P) ±0.05% (W) ±0.1% (B) ±0.25% (C) ±0.5% (D)	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○
Temperature coefficient of resistance (ppm/°C)	±5 (V) ±10 (N) ±25 (P) ±50 (Q)	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○
Maximum voltage	150V				200V					
Operating temperature	-55°C~155°C				-55°C~155°C					
Packaging	5,000pcs CodeT5				CodeT5					

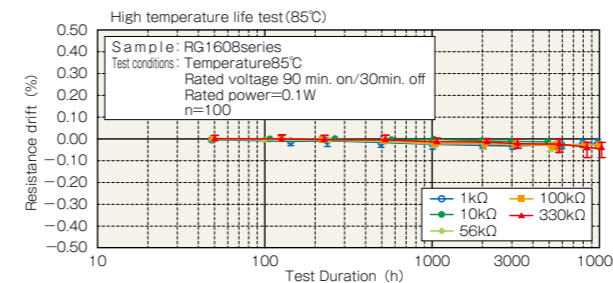
\*1 Depending on customer's reliability requirements, power rating between high power and regular power can be selected.  
· Contact us for RG3225 with 1/2W rated power.

## Reliability characteristics

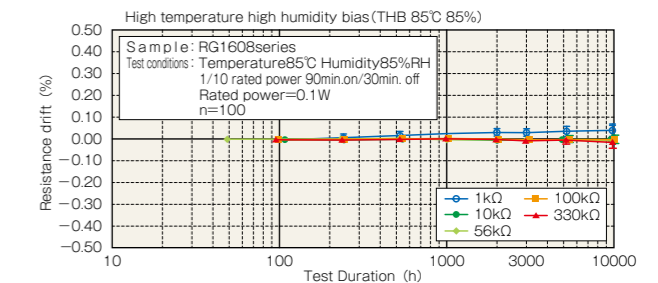
Item	Test Method	Specification: drift limits for each power rating						(Typical)
		Low		Regular		High		
		≤47Ω	≥47Ω	≤47Ω	≥47Ω	≤47Ω	≥47Ω	
Short time Overload	Applied voltage : 2.5 times. Test duration: 5 seconds. (When maximum operating voltage: 2 times or less)	±0.10%	±0.05%	±0.10%	±0.05%	-	±0.10%	±(0.01%)
Load Life	Test temperature : 85°C (When high voltage : 70°C). Applied voltage : rated voltage. Repeat 1000 hours as follow : 90 mins on/30mins off.	±0.25%	±0.10%	±0.50%	±0.25%	-	±0.50%	±(0.01%)
Moisture load life	Test condition: 85°C, 85% RH. Applied power : 1/10 rated power. Repeat 1000 hours as follow : 90 mins on/30mins off.	±0.25%	±0.10%	±0.50%	±0.25%	-	±0.50%	±(0.05%)
Temperature Cycle	Repeat 1000 cycle as follow : -55°C (30 min.)/Room Temp.(2 min.) / +125°C (30min.)/Room Temp.(2min.)	±0.25%	±0.10%	±0.25%	±0.10%	-	±0.10%	±(0.01%)
High temperature Exposure	+155°C for 1000 hours with no load	±0.25%	±0.10%	±0.25%	±0.10%	-	±0.10%	±(0.01%)

## 10000 hour reliability test data

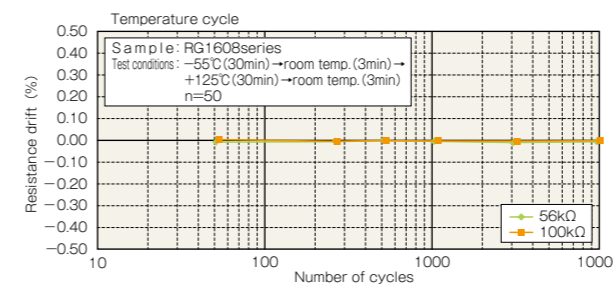
### Life test



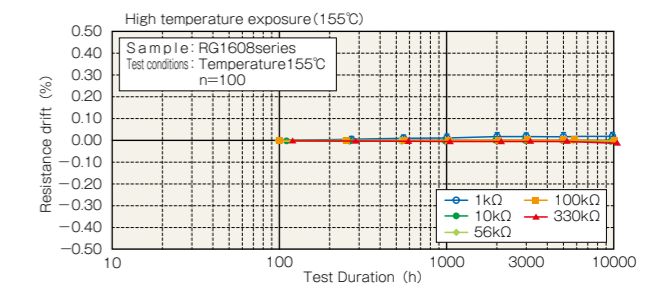
### High temperature high humidity bias test



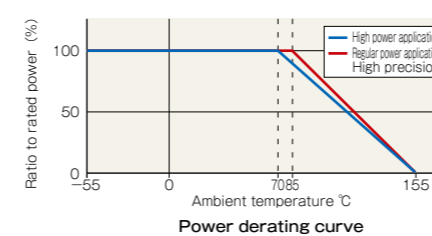
### Temperature cycle test



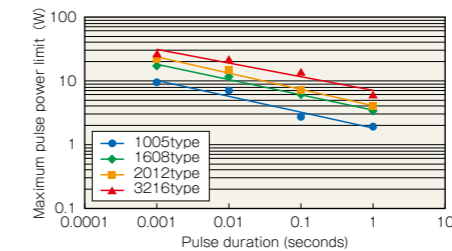
### High temperature exposure test



## Power derating characteristics



## Maximum pulse power limit



## Part numbering system

