

# Metal thin film chip resistors (wide temperature range)

■ RGT series

AEC-Q200 Compliant

## Features

- Wide temperature operation (Upper category temperature :175°C)
- Long term stability with inorganic passivation
- Resistance tolerance :  $\pm 0.1\%$  , TCR :  $\pm 10\text{ppm}/^\circ\text{C}$
- Thin film structure enabling low noise and anti-sulfur

## Applications

- Automotive electronics
- Industrial measurement instrumentation, industrial machines
- Wide temperature operation machines

Thin film surface mount resistors

RGT series



## ◆ Part numbering system

**RGT 2012 N - 105 - B - T5**

Series code

Size: RGT1005, RGT1608, RGT2012, RGT3216

Temperature coefficient of resistance

Packaging quantity :  
T5(5,000pcs) T10(10,000pcs)

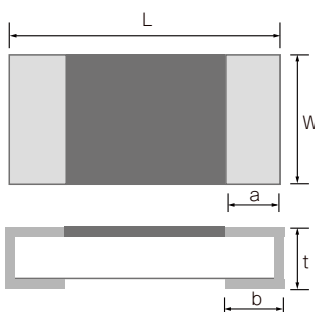
Resistance tolerance  
Nominal resistance value  
(E-24 : 3 digit, E-96 : 4 digit)

## ◆ Electrical Specification

Type	Power ratings	Temperature coefficient of resistance (ppm/°C)	Resistance range( $\Omega$ ) Resistance tolerance		Maximum voltage	Resistance value series	Operating temperature	Packaging quantity
			$\pm 0.1\%$ (B)	$\pm 0.5\%$ (D)				
RGT1005	1/32W	$\pm 10$ (N)	47 $\leq$ R $\leq$ 100k		50V	E-24, E-96	-55°C~ 175°C	T5 T10*1
		$\pm 25$ (P)	47 $\leq$ R $\leq$ 150k					
RGT1608	1/16W	$\pm 10$ (N)	47 $\leq$ R $\leq$ 270k		100V			
		$\pm 25$ (P)	47 $\leq$ R $\leq$ 1M					
RGT2012	1/10W	$\pm 10$ (N)	47 $\leq$ R $\leq$ 470k		150V			
		$\pm 25$ (P)	47 $\leq$ R $\leq$ 2.7M					
RGT3216	1/8W	$\pm 10$ (N)	47 $\leq$ R $\leq$ 1M		200V			
		$\pm 25$ (P)	47 $\leq$ R $\leq$ 5.1M					

\*1 : Resistance tolerance  $\pm 0.5\%$  (D) of RGT1005 is available only at T10

## ◆ Dimensions



Type	Size (inch)	L	W	a	b	t
RGT1005	0402	1.00 $\pm$ 0.1/-0.05	0.50 $\pm$ 0.05	0.20 $\pm$ 0.10	0.25 $\pm$ 0.05	0.35 $\pm$ 0.05
RGT1608	0603	1.60 $\pm$ 0.20	0.80 $\pm$ 0.25/-0.20	0.30 $\pm$ 0.20	0.30 $\pm$ 0.20	0.40 $\pm$ 0.15/-0.10
RGT2012	0805	2.00 $\pm$ 0.20	1.25 $\pm$ 0.25/-0.20	0.40 $\pm$ 0.20	0.40 $\pm$ 0.20	0.40 $\pm$ 0.15/-0.10
RGT3216	1206	3.20 $\pm$ 0.20	1.60 $\pm$ 0.25	0.50 $\pm$ 0.25	0.50 $\pm$ 0.20	0.40 $\pm$ 0.15/0.10

(unit : mm)

## ◆ Reliability specification

Test items	Condition( IEC60115-1/JIS C5201-1)	Standard
Short time overload	2.5 x rated voltage <sup>**1</sup> , 5 seconds	±(0.05%+0.01Ω)
Life (biased)	125°C, rated voltage <sup>**1</sup> , 90min. ON/ 30min. OFF, 1000hours	±(0.25%+0.05Ω)
High temperature high humidity	85°C, 85%RH, 1/10 of rated power, 90min. ON/ 30min. OFF, 1000hours	±(0.25%+0.05Ω)
Temperature shock	-55°C (30min) ~ 125°C(30min) 1000 cycles	±(0.1%+0.01Ω)
High temperature exposure	175°C, no bias, not mounted, 1000h	±(0.1%+0.01Ω)
Resistance to soldering heat	260±5°C, 10seconds (reflow)	±(0.05%+0.01Ω)

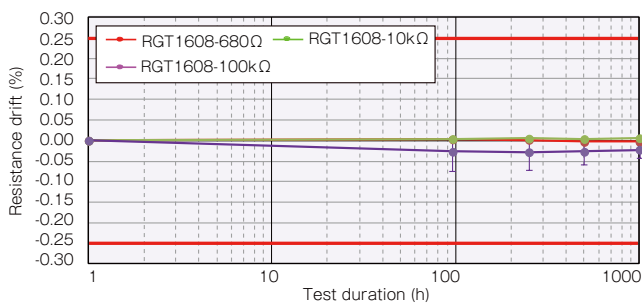
\*1 Rated voltage is given by  $E = \sqrt{R \times P}$  E= rated voltage (V), R=nominal resistance value(Ω), P=rated power(W)  
 If rated voltage exceeds maximum voltage /element, maximum voltage/element is the rated voltage.

Thin film surface mount resistors

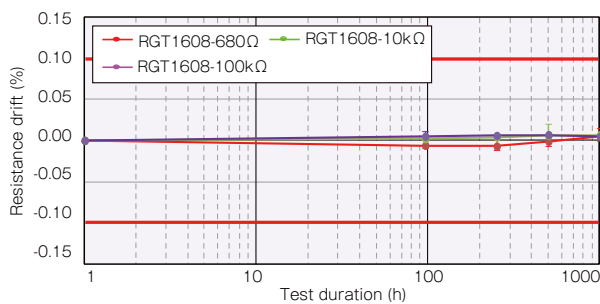
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## ◆ Reliability test data

### ○ Biased life test



### ○ High temperature exposure



## ◆ Derating Curve

