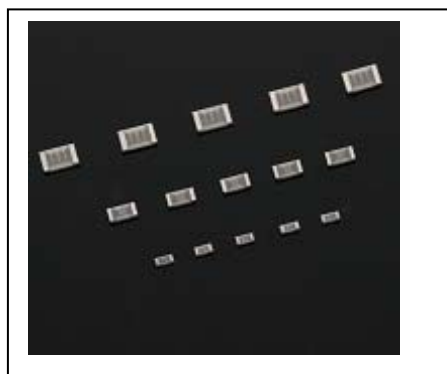


Ultra precision 0.02%, 0.05%, 0.1%, 0.25%, 0.5%, tolerance Thin Film Chip Resistor



FEATURES

- High Reliability and Excellent Stability at different environmental conditions
- Low noise, THIN FILM(NiCr) construction
- EIA Standard case size(0402, 0603, 0805, 1206)
- RoHS Compliance and 100% Lead-Free (Matte Sn termination finished)

APPLICATIONS

- Automotive
- Test & Measurement
- Optical & Telecommunication
- Medical and Industrial Equipment

Electrical Specification

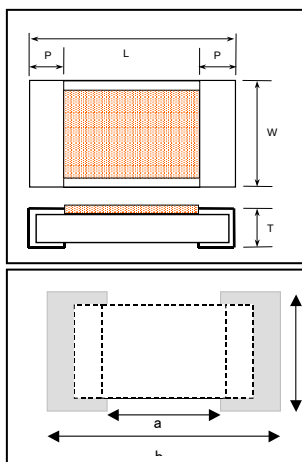
Type	Size	Power Rating ar 85 °C			Resistance Tolerance (Code)	Resistance Range (ohm)	Temperature Coefficient (Code)		Max. operating Voltage	Resistance Values (E-series)
		Low (ultra precision)	Regular	High			(ohm)	(ppm/°C)		
RG1005	0402	0.032W	0.063W	0.125W	±0.5% (D)	10-100K	10-46.4	100(R)	25V	E-24, E-96
					±0.25% (C)	47-100K	47-100K	25(P), 10(N)		
							100-2.94K	5(V)		
							47-100K	25(P), 10(N)		
							100-2.94K	5(V)		
					±0.1% (B)	47-100K	47-100K	25(P), 10(N)		
					±0.05% (W)		100-2.94K	5(V)		
					±0.02% (V)	100-2.94K	100-2.94K	25(P), 10(N), 5(V)		
RG1608	0603	0.063W	0.1W	0.166W	±0.5% (D)	10-360K	10-46.4	50(Q)	75V	E-24, E-96
					±0.25% (C)	47-274K	47-360K	25(P)		
							47-274K	10(N)		
							100-4.99K	5(V)		
							47-274K	25(P), 10(N)		
					±0.1% (B)	47-332K	100-4.99K	5(V)		
							47-332K	25(P)		
							47-274K	10(N)		
							100-4.99K	5(V)		
					±0.05% (W)	47-332K	47-274K	10(N)		
					100-4.99K		5(V)			
					±0.02% (V)	100-4.99K	100-4.99K	25(P), 10(N), 5(V)		
RG2012	0805	0.1W	0.125W	0.25W	±0.5% (D)	10-1M	10-46.4	50(Q)	100V	E-24, E-96
					±0.25% (C)	47-1M	47-1M	25(P)		
							47-475K	10(N)		
							100-10K	5(V)		
							47-1M	25(P), 10(N)		
					±0.1% (B)	47-1M	100-10K	5(V)		
							47-1M	25(P)		
							47-475K	10(N)		
							100-10K	5(V)		
					±0.05% (W)	47-475K	47-475K	25(P)		
					47-475K		10(N)			
					100-10K	5(V)				
±0.02% (V)	100-10K	100-10K	25(P), 10(N), 5(V)							
RG3216	1206	0.125W	0.25W	0.25W	±0.5% (D)	47-1M	10-46.4	50(Q)	150V	E-24, E-96
					±0.25% (C)	47-1M	10-1M	25(P), 10(N)		
							100-33.2K	5(V)		
							47-1M	25(P), 10(N)		
					±0.1% (B)	47-1M	47-1M	25(P), 10(N)		
					±0.05% (W)	47-1M	100-33.2K	5(V)		
							47-1M	25(P), 10(N)		
							100-33.2K	5(V)		
					±0.02% (V)	100-33.2K	100-33.2K	25(P), 10(N), 5(V)		

Ultra precision 0.02%, 0.05%, 0.1%, 0.25%, 0.5%, tolerance Thin Film Chip Resistor

Performance

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℃ (When high voltage : 70℃). 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℃, 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℃ (30 min.)/Room Temp.(2 min.) / +125℃ (30min.)/Room Temp.(2min.)	±0.25%	±0.10%	±0.25%	±0.10%	—	±0.10%	±(0.01%)
High temperature Exposure	+155℃ for 1000 hours with no load	±0.25%	±0.10%	±0.25%	±0.10%	—	±0.10%	±(0.01%)

Dimensions & Footprints

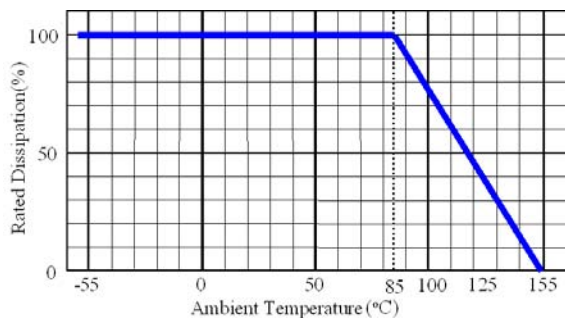


Dimensions inch (mm)				
	L	W	P	T
RG 1005	.040 ± .002 (1.0 ± 0.05)	.020 ± .002 (0.5 ± 0.05)	.008 ± .004 (0.2 ± 0.1)	.014 ± .002 (0.35 ± 0.05)
RG 1608	.063 ± .008 (1.6 ± 0.2)	.031 ± .008 (0.8 ± 0.2)	.012 ± .008 (0.3 ± 0.2)	0.016 ± .004 (0.4 ± 0.1)
RG 2012	.079 ± .008 (2.0 ± 0.2)	.049 ± .008 (1.25 ± 0.2)	.016 ± .008 (0.4 ± 0.2)	0.016 ± .004 (0.4 ± 0.1)
RG 3216	.126 ± .008 (3.2 ± 0.2)	.063 ± .008 (1.6 ± 0.2)	.02 ± .01 (0.5 ± 0.25)	0.016 ± .004 (0.4 ± 0.1)

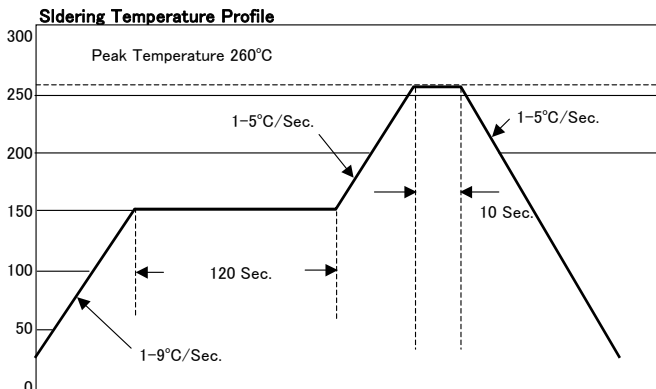
Dimensions (mm)			
	a	b	c
RG 1005	0.5	1.6	0.6
RG 1608	1.0	3.0	1.2
RG 2012	1.2	4.0	1.7
RG 3216	2.0	5.0	2.0

Power Derating Curve

For operation above 85degC, power rating must be derated according to the following chart



Recommended Reflow Curve



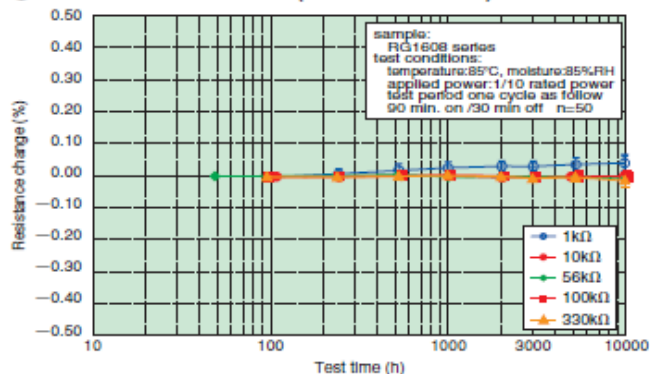
Ordering information

RG	1608	N	104	W	T5
TYPE	Size	TCR	R-Values	Tolerance	Package
	1005 1608 2012 3216	V=5ppm/°C N=10ppm/°C P=25ppm/°C Q=50ppm/°C R=100ppm/°C	3 digits for E24 series (Ex.104=100K ohm) 4 digits for E96 series (Ex.4992=49.9K ohm)	P=0.02% W=0.05% B=0.1% C=0.25% D=0.5%	T1=1000 T5=5000

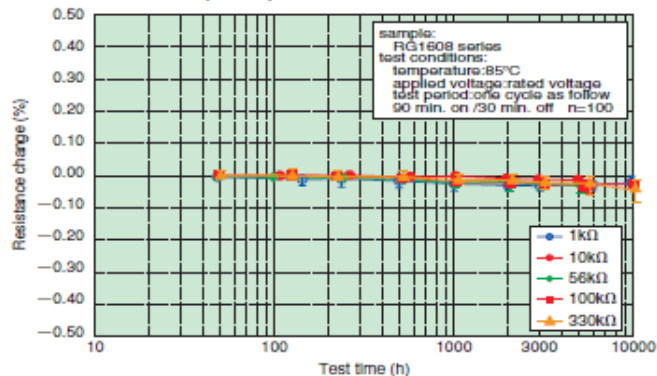
Ultra precision 0.02%, 0.05%, 0.1%, 0.25%, 0.5%, tolerance
Thin Film Chip Resistor

Reliability Test Data

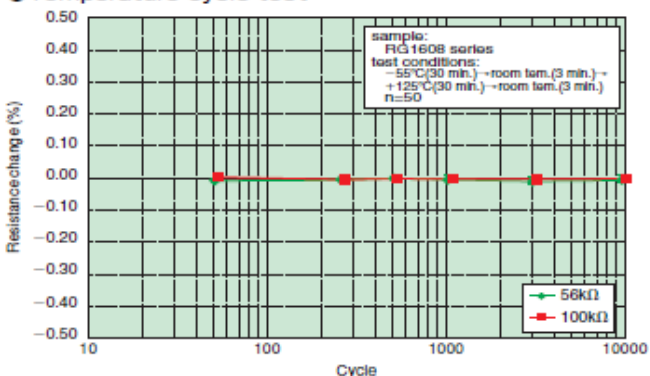
●Moisture and life test (THB 85°C 85%)



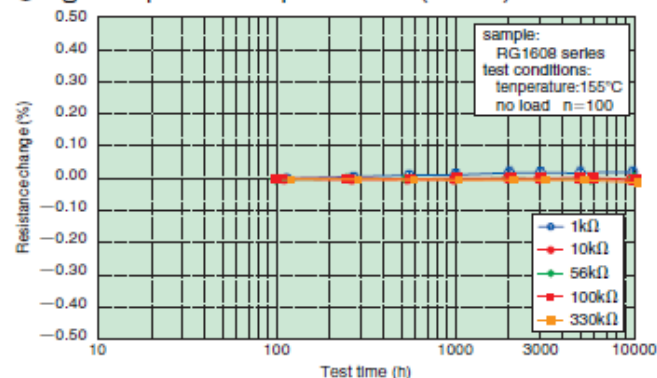
●Load life test (85°C)



●Temperature cycle test



●High temperature expose test (155°C)



Tape & Reel Dimensions (mm)

Type	A	B	E	F	W	P ₀	P ₁	P ₂	t ₁
RG1005	0.63 ± 0.05	1.13 ± 0.05	1.75 ± 0.1	3.5 ± 0.05	8.0 ± 0.3	4.0 ± 0.1	2.0 ± 0.05	2.0 ± 0.05	0.43 ± 0.05
RG1608	1.1 ± 0.1	1.9 ± 0.1					4.0 ± 0.1		0.6 ± 0.05
RG2012	1.65 ± 0.2	2.4 ± 0.2							0.75 ± 0.05
RG3216	1.9 ± 0.1	3.5 ± 0.1							1.0 ± 0.2

