

# RG1608P-473-W-T1 Datasheet

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DiGi Electronics Part Number	RG1608P-473-W-T1-DG
Manufacturer	<a href="#">Susumu</a>
Manufacturer Product Number	RG1608P-473-W-T1
Description	RES SMD 47K OHM 0.05% 1/10W 0603
Detailed Description	47 kOhms $\pm$ 0.05% 0.1W, 1/10W Chip Resistor 0603 (1608 Metric) Anti-Sulfur, Automotive AEC-Q200 Th in Film

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## Purchase and inquiry

**Manufacturer Product Number:**

RG1608P-473-W-T1

**Series:**

RG

**Resistance:**

47 kOhms

**Power (Watts):**

0.1W, 1/10W

**Features:**

Anti-Sulfur, Automotive AEC-Q200

**Operating Temperature:**

-55°C ~ 155°C

**Supplier Device Package:**

0603

**Size / Dimension:**

0.063" L x 0.031" W (1.60mm x 0.80mm)

**Number of Terminations:**

2

**Manufacturer:**

Susumu

**Product Status:**

Active

**Tolerance:**

±0.05%

**Composition:**

Thin Film

**Temperature Coefficient:**

±25ppm/°C

**Package / Case:**

0603 (1608 Metric)

**Ratings:**

AEC-Q200

**Height - Seated (Max):**

0.020" (0.50mm)

**Failure Rate:**

-

## Environmental & Export classification

**RoHS Status:**

ROHS3 Compliant

**REACH Status:**

REACH Unaffected

**HTSUS:**

8533.21.0030

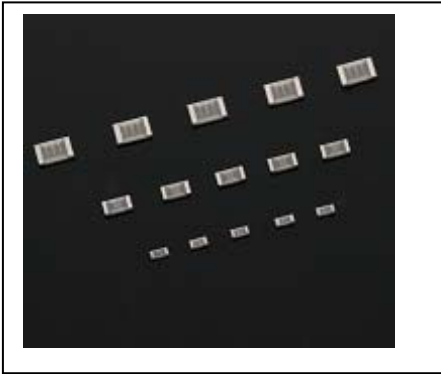
**Moisture Sensitivity Level (MSL):**

1 (Unlimited)

**ECCN:**

EAR99

## 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

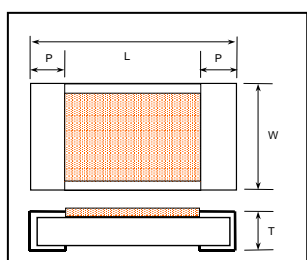
Type	Size	Power Rating at 85 °C			Resistance Tolerance (Code)	Resistance Range (ohm)	Temperature Coefficient (Code)		Max. operating Voltage	Resistance Values (E-series)
		Low (ultra precision)	Regular	High			(ohm)	(ppm/°C)		
RG1005	0402	0.032W	0.063W	0.125W	±0.5% (D)	10-100K	10-46.4	100(R)	25V	E-24,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

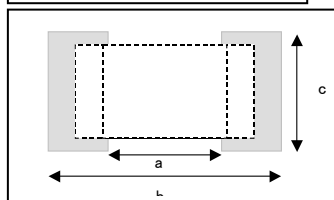
## Performance

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°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%)

## Dimensions & Footprints



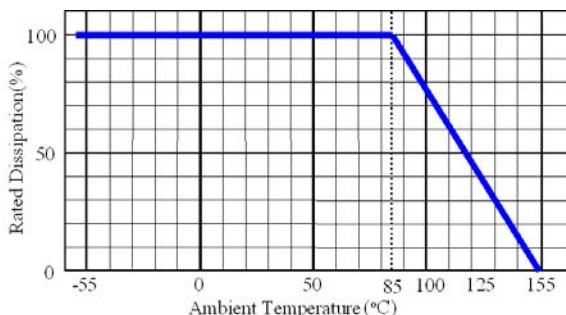
	L	W	P	T
RG 1005	.040 ± .002 (1.0 ± 0.05)	.020 ± .002 (0.5 ± 0.05)	.008 ± .004 (0.2 ± 0.1)	.014 ± .002 (0.35 ± 0.05)
RG 1608	.063 ± .008 (1.6 ± 0.2)	.031 ± .008 (0.8 ± 0.2)	.012 ± .008 (0.3 ± 0.2)	0.016 ± .004 (0.4 ± 0.1)
RG 2012	.079 ± .008 (2.0 ± 0.2)	.049 ± .008 (1.25 ± 0.2)	.016 ± .008 (0.4 ± 0.2)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



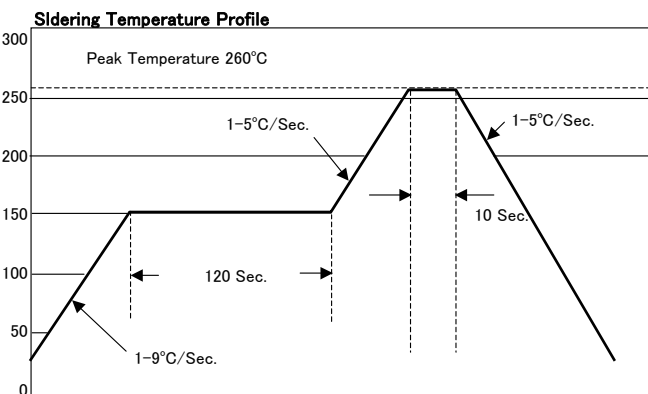
	a	b	c
RG 1005	0.5	1.6	0.6
RG 1608	1.0	3.0	1.2
RG 2012	1.2	4.0	1.7
RG 3216	2.0	5.0	2.0

## Power Derating Curve

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



## Recommended Reflow Curve



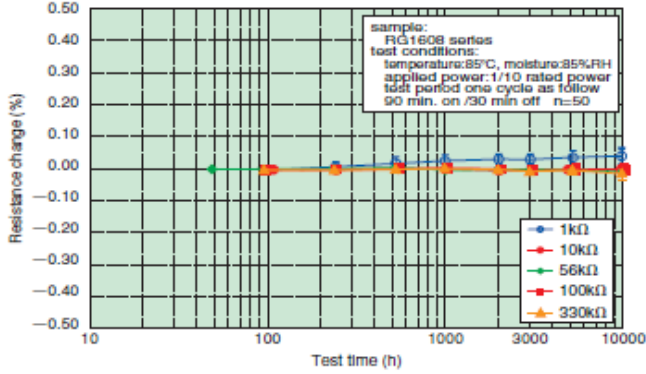
## Ordering information

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

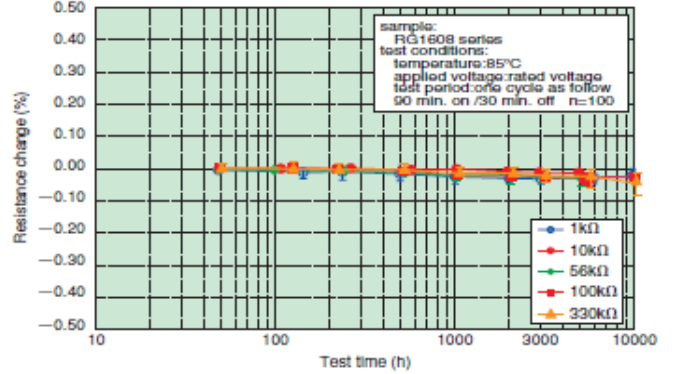
Ultra precision 0.02%, 0.05%, 0.1%, 0.25%, 0.5%, tolerance  
Thin Film Chip Resistor

Reliability Test Data

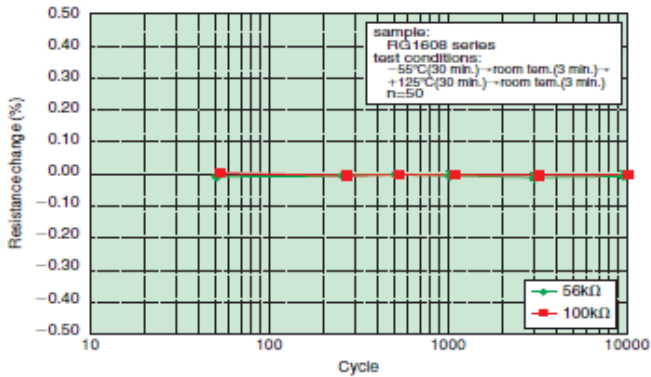
●Moisture and life test (THB 85°C 85%)



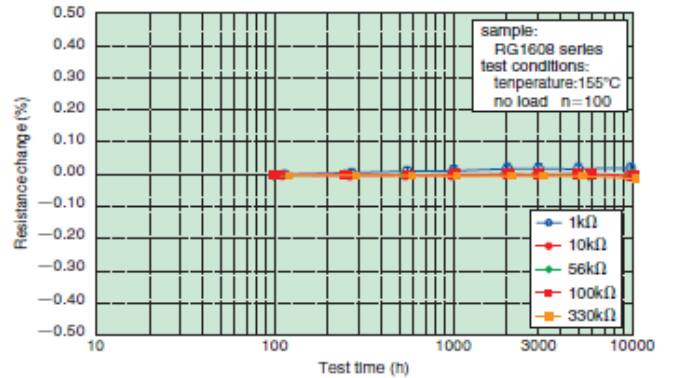
●Load life test (85°C)



●Temperature cycle test

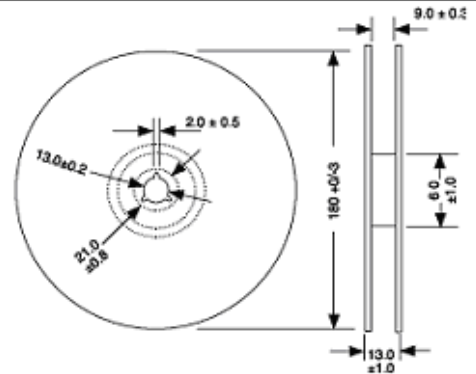
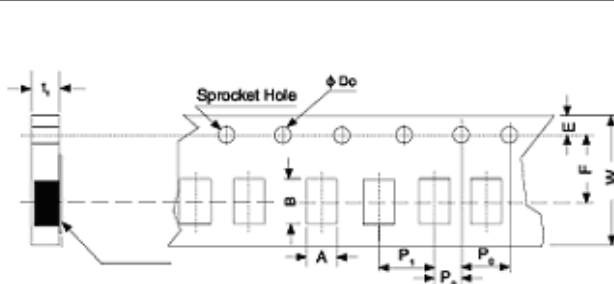


●High temperature expose test (155°C)



Tape & Reel Dimensions (mm)

Type	A	B	E	F	W	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	t <sub>1</sub>
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					4.0 ± 0.1		0.75 ± 0.05
RG3216	1.9 ± 0.1	3.5 ± 0.1					4.0 ± 0.1		1.0 ± 0.2



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