

RG1608P-4420-B-T1 Datasheet

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DiGi Electronics Part Number	RG1608P-4420-B-T1-DG
Manufacturer	Susumu
Manufacturer Product Number	RG1608P-4420-B-T1
Description	RES SMD 442 OHM 0.1% 1/10W 0603
Detailed Description	442 Ohms \pm 0.1% 0.1W, 1/10W Chip Resistor 0603 (1608 Metric) Anti-Sulfur, Automotive AEC-Q200 Thin Film

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Purchase and inquiry

Manufacturer Product Number:

RG1608P-4420-B-T1

Series:

RG

Resistance:

442 Ohms

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:

Obsolete

Tolerance:

±0.1%

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

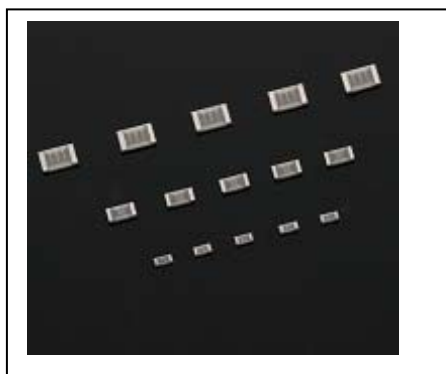
Moisture Sensitivity Level (MSL):

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

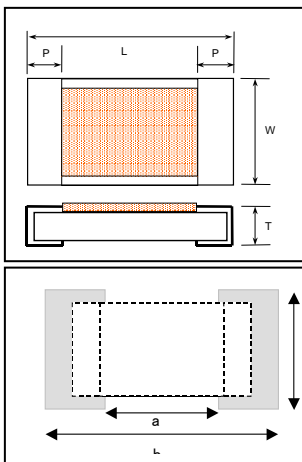
Type	Size	Power Rating at 85 °C			Resistance Tolerance (Code)	Resistance Range (ohm)	Temperature Coefficient (Code)		Max. operating Voltage	Resistance Values (E-series)
		Low (ultra precision)	Regular	High			(ohm)	(ppm/°C)		
RG1005	0402	0.032W	0.063W	0.125W	±0.5% (D)	10-100K	10-46.4	100(R)	25V	E-24,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



Dimensions inch (mm)

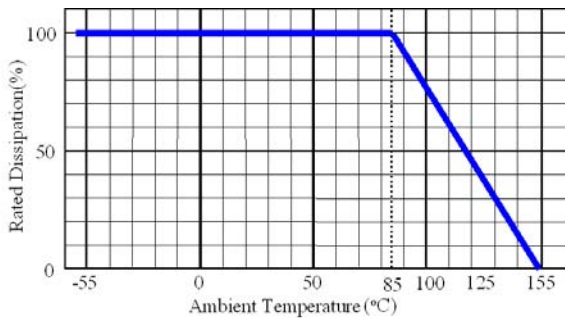
	L	W	P	T
RG 1005	.040 ± .002 (1.0 ± 0.05)	.020 ± .002 (0.5 ± 0.05)	.008 ± .004 (0.2 ± 0.1)	.014 ± .002 (0.35 ± 0.05)
RG 1608	.063 ± .008 (1.6 ± 0.2)	.031 ± .008 (0.8 ± 0.2)	.012 ± .008 (0.3 ± 0.2)	0.016 ± .004 (0.4 ± 0.1)
RG 2012	.079 ± .008 (2.0 ± 0.2)	.049 ± .008 (1.25 ± 0.2)	.016 ± .008 (0.4 ± 0.2)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

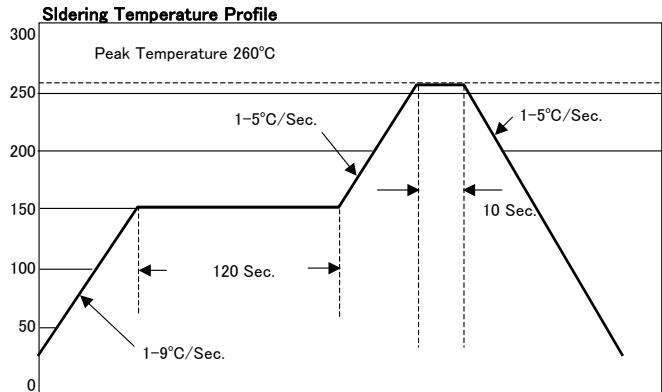
	a	b	c
RG 1005	0.5	1.6	0.6
RG 1608	1.0	3.0	1.2
RG 2012	1.2	4.0	1.7
RG 3216	2.0	5.0	2.0

Power Derating Curve

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



Recommended Reflow Curve



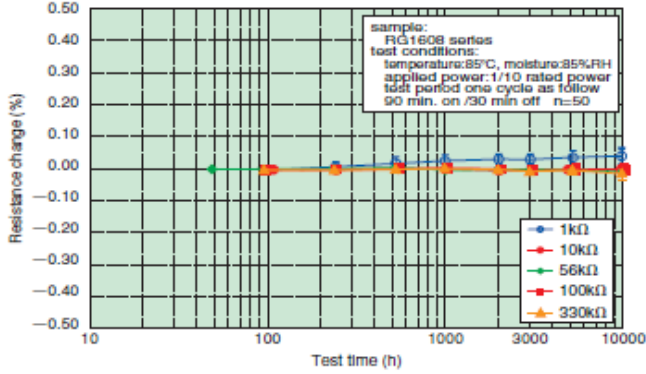
Ordering information

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

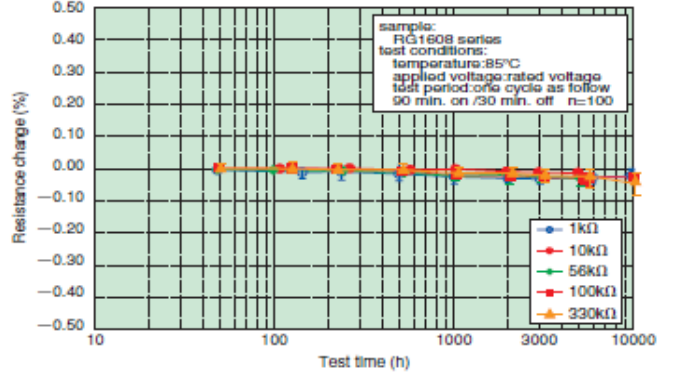
Ultra precision 0.02%, 0.05%, 0.1%, 0.25%, 0.5%, tolerance
Thin Film Chip Resistor

Reliability Test Data

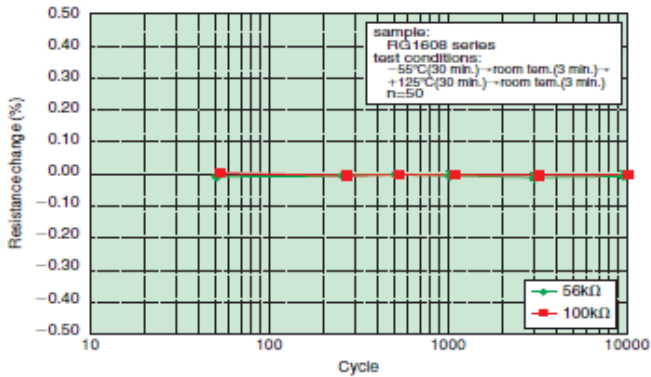
●Moisture and life test (THB 85°C 85%)



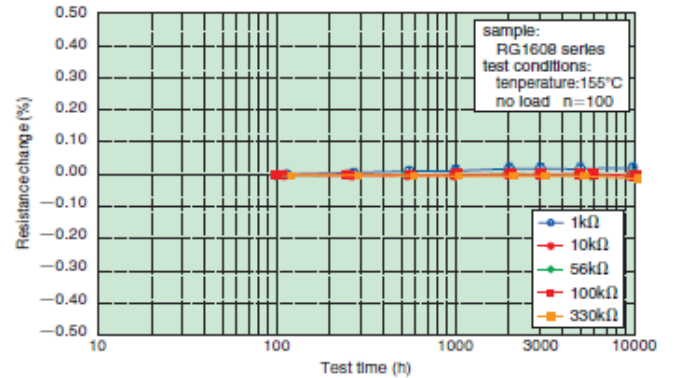
●Load life test (85°C)



●Temperature cycle test

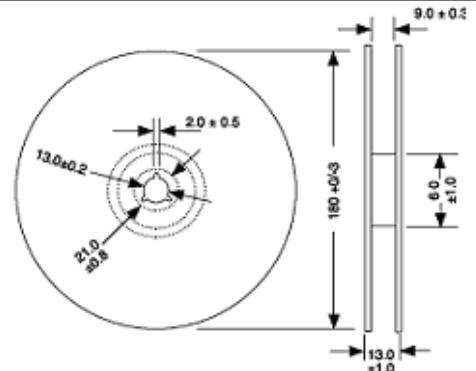
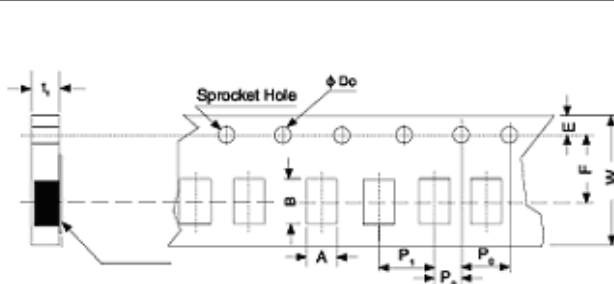


●High temperature expose test (155°C)



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					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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