

METAL GLAZE FIXED RESISTORS

TYPE RGP SERIES

INTRODUCTION

TE Connectivity (TE)'s metal glaze resistors are manufactured using thick film techniques. The ceramic slugs are printed with thick film, fired, and end caps are pressure fitted onto the slugs. The resistive element is then spiralled to the required value and lead wires are welded onto the end caps. The metal glaze element enables much higher resistance values to be manufactured compared to metal film resistors, whilst maintaining the high stability recognised in those resistors, and giving additional resistance to environmental & overload conditions.



FEATURES

- Similar characteristics to metal film resistors, but with a much higher resistance value capability.
- Metal-glaze elements provide high stable performance against environmental conditions and overload.
- Resistance to heat, humidity, and solvents.

CHARACTERISTICS - ELECTRICAL

Characteristic		RGP0207CH	RGP50	RGP100	RGP200
Rated power@70°C (W)		0.25	0.5	1	2
Resistance Range (ohms)	Minimum	47KΩ	47KΩ	47KΩ	47KΩ
	Maximum	1GΩ	1GΩ	1GΩ	1GΩ
Tolerance (%)		±1%, ±5%, 10%			
Code Letter		F = ±1%, J = ±5%, K = 10%			
Temp. Coefficient Max (ppm/°C)		±200ppm/°C			
Maximum Working Voltage (VDC)		1600	3500	5000	10000
Maximum Overload Voltage (VDC)		3200	7000	10000	20000
Operating Temp. Range (°C)		-65°C to 175°C			
Dielectric Strength (V)		350			
Insulation Resistance (Mohms)		1000MΩ			

Note:

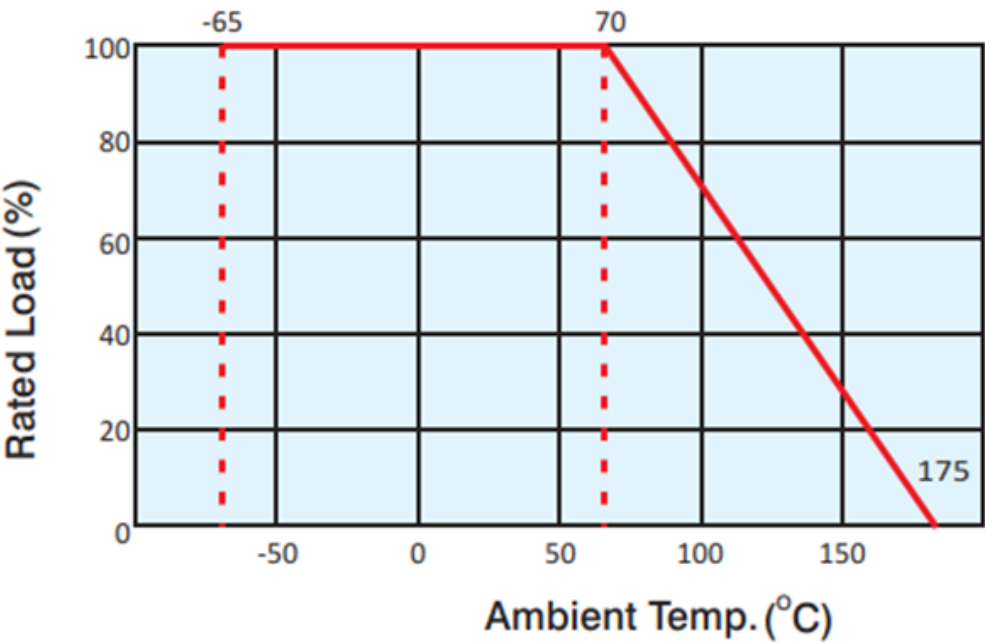
- Resistance values over 510MΩ (≥510MΩ), the tolerance shall be ±10%.
- RGP 1W and RGP 2W are coated in flame resistant paint.

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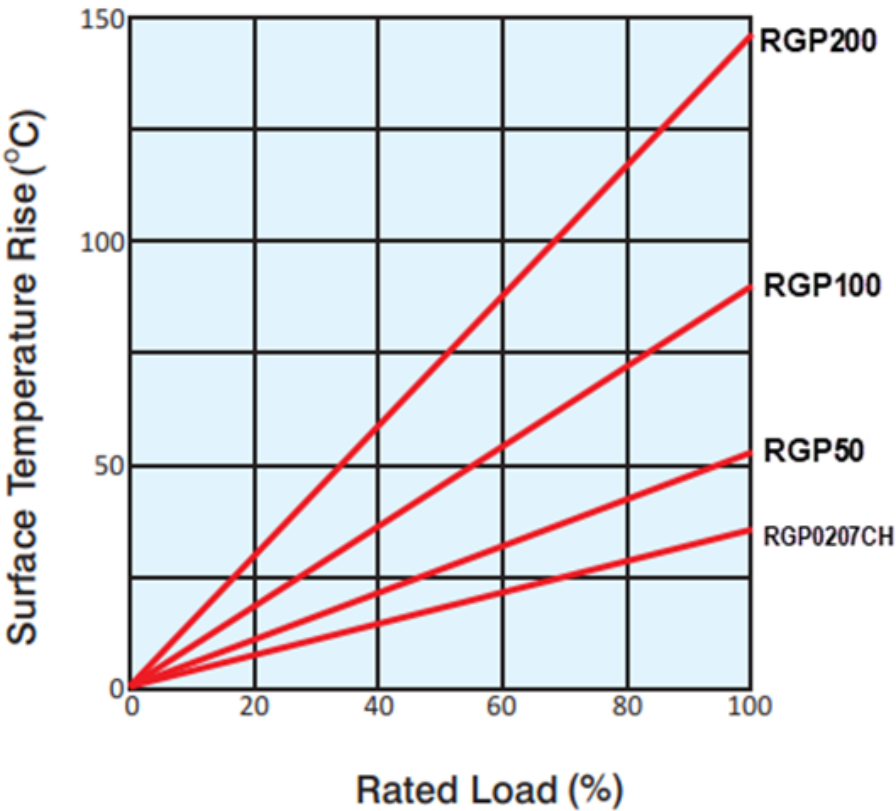
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DERATING CURVE

For resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with this curve.



SURFACE TEMPERATURE RISE



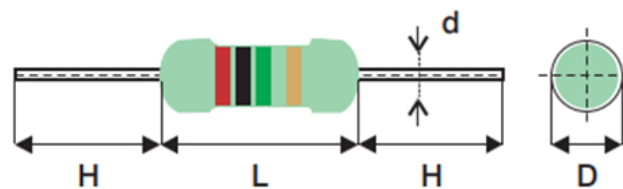
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ENVIRONMENTAL CHARACTERISTICS

Characteristic	Specification	Test Method
Resistance temperature coefficient	$\pm 200 \text{ PPM}/^{\circ}\text{C}$	-65°C to 175°C
Power rating load	Surface temp. 175°C Max.	Rated voltage for 30 minutes
Short time overload	$\pm 1\%$	2.5 times of rated voltage for 5 seconds
Dielectric withstand voltage	No evidence of mechanical damage or insulation breakdown	AC 350V for 1 minute
Insulation resistance	$1000 \text{ M}\Omega$	DC100V megger
Pulse loading capability	$\Delta R/R \leq \pm 2\%$	IEC 60065 14.1
Terminal strength	No evidence of mechanical damage.	$< 1/2 \text{ W} : 1 \text{ kg}$ $> 1 \text{ W} : 2.5 \text{ kg}$
Solderability	Minimum 95% coverage	$235 \pm 5^{\circ}\text{C}$ for 2 seconds
Resistance to soldering heat	No evidence of mechanical damage. $\Delta R/R \leq \pm 1\%$	$270 \pm 5^{\circ}\text{C}$ for 10 ± 1 second $350 \pm 10^{\circ}\text{C}$ for 3.5 ± 0.5 seconds
Temp. cycle	$\Delta R/R \leq \pm 0.5\%$	1 cycle: 30 minutes @ -55°C 3 minutes @ room temperature 30 minutes @ 175°C 3 minutes @ room temperature Total cycles : 5
Load life	$\Delta R/R \leq \pm 3\%$	Rated power load 90 minutes ON 30 minutes OFF 70°C 1000 hours -0/+48 hours
Load life in humidity	$\Delta R/R \leq \pm 3\%$	Rated power load 90 minutes ON 30 minutes OFF 40°C 95% RH 500 hours -0/+24 hours
Nonflammability	Not flamed	16 times of rated wattage for 5 min. (RT 1W & RT 2W)

DIMENSIONS (UNIT: mm)



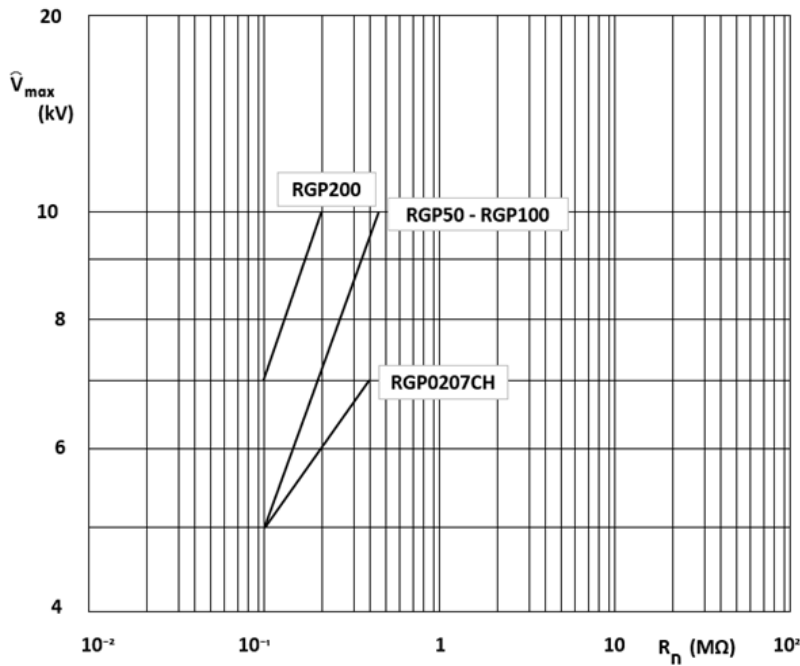
Type	$D \pm 1$	$L \pm 1$	$H \pm 0.1$	$d \pm 0.20$
RGPO207CH	2.4 ± 0.5	6.4	28	0.6
RGP50	3.5	9	28	0.65
RGP100	4.5	11	28	0.8
RGP200	5.0	15	28	0.8

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PULSE LOADING CAPABILITIES

In accordance with IEC 60065 chapter 14.1; 50 discharges from a 1 nF capacitor charged to Vmax; 12 discharges/minute (drift $\Delta R/R \leq 2\%$)



COATING AND MARKING

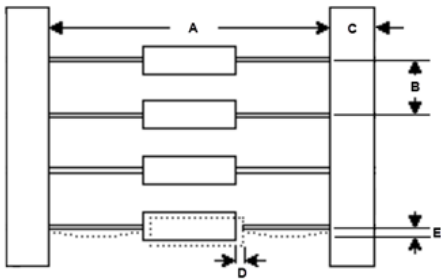
Coating consists of 3 layers of non-flammable silicone resin for RGP100 and RGP200 and 1 layer of phenolic resin and 3 layers of epoxy resin for RGP0207CH and RGP50

Resistors are marked on resistor surface with four band colour code.

PACKAGING

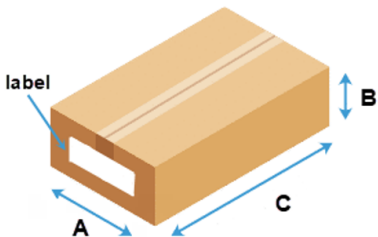
Taping specification

Type	Size Type	A	B	C ± 1	D Max	E Max
RGP0207CH	T-52	52±1	5±0.5	6	0.6	1.2
RGP50	T-52	52±1	5±0.5	6	0.6	1.2
RGP100	T-63	63±1	5±0.5	6	0.6	1.2
RGP200	T-63	63±1	10±1	6	0.6	1.2

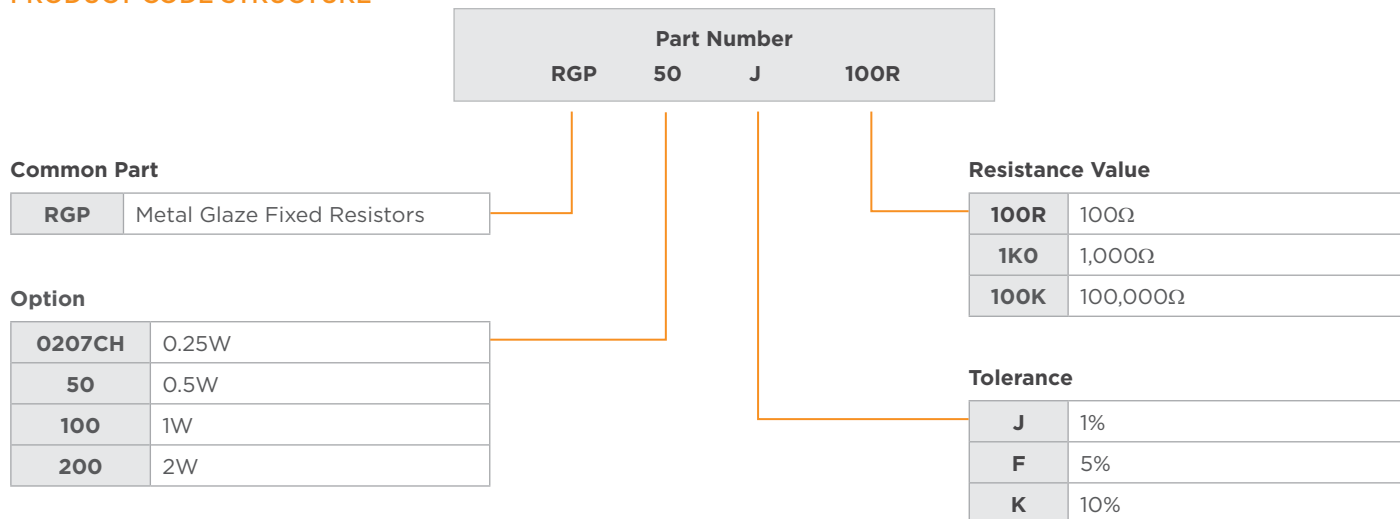


BOX SPECIFICATION

Type	Package	A	B	C	Qty Per Box
RGP0207CH	T/B	75	100	255	5000
RGP50	T/B	75	55	255	1000
RGP100	T/B	85	105	260	1000
RGP200	T/B	85	105	260	1000



PRODUCT CODE STRUCTURE



PRODUCT INFORMATION

TCPN	Catalogue Number	Description
1623708-1	RGPO207CHJ100M	RGPO207CH 5% 100M
1623708-2	RGPO207CHJ10M	RGPO207CH 5% 10M
1623708-3	RGPO207CHJ15M	RGPO207CH 5% 15M
1623708-5	RGPO207CHJ22M	RGPO207CH 5% 22M
1623708-6	RGPO207CHJ33M	RGPO207CH 5% 33M
1623708-7	RGPO207CHJ470M	RGPO207CH 5% 470M 5K PK
1623708-8	RGPO207CHJ47M	RGPO207CH 5% 47M
1-1623708-0	RGPO207CHJ68M	RGPO207CH 5% 68M
1-1623708-1	RGPO207CHJ82M	RGPO207CH 5% 82M
1-1623708-2	RGPO207CHK1G0	RGPO207CH 10% 1G0
2-1623708-1	RGPO207CHJ27M	RGPO207CH 5% 27M
2-1623708-3	RGPO207CHJ130M	RGPO207CH 5% 130M
2-1623708-5	RGPO207CHJ150M	RGPO207CH 5% 150M

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