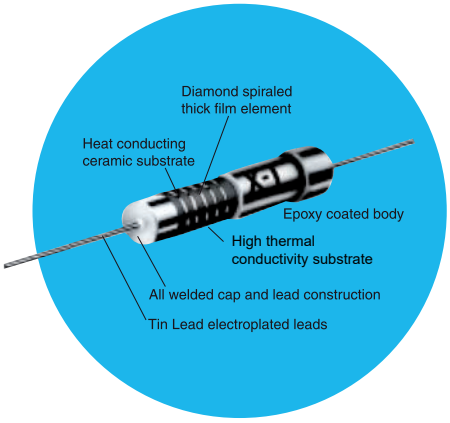
Precision High-Voltage Thick Film Resistors

CGH Series

- 1/4 watt to 5 watt
- TCR of ±50 or ±100 ppm/°C
- 100K ohm to 2000 megohm range
- ±0.5%, ±1%, ±2% or ±5% tolerance



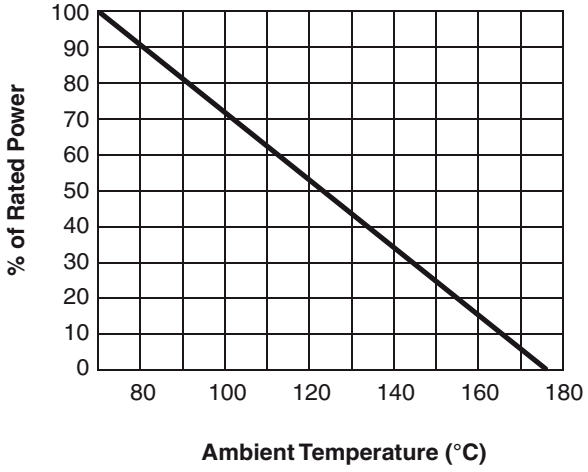
All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

Electrical Data

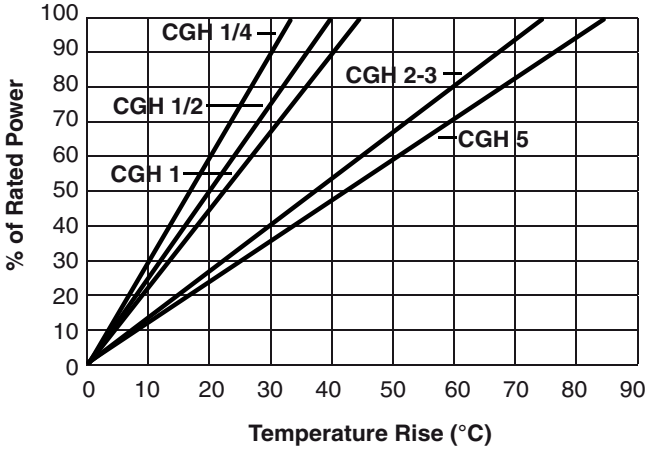
IRC Type	Power Rating at 70°C (watts)[1]	Voltage Rating (volts)[2]	Resistance Range (ohms)[3]	Tolerance (±%)[4]	Maximum TCR (±ppm/°C)[4]	VCR (ppm/V)[5]
CGH - 1/4	1/4	750	100K - 100M	.5, 1, 2, 5	50, 100	0 - -5
CGH - 1/2	1/2	1,500	100K - 500M			
CGH - 1	1	3,000	50K - 750M			
CGH - 2	2	5,000	100K - 1500M			
CGH - 3	3	10,000	200K - 2000M			
CGH - 5	5	20,000	300K - 2000M			

Notes:
1. For power rating above 70°C, see derating curve.
2. Voltage rating shown is the rated DC continuous working voltage or the sine-wave RMS absolute maximum voltage at commercial line frequency. For DC applications the absolute maximum permissible voltage is 1.5 times the value shown for low repetition short-time-overload or pulse conditions of 10 seconds or less duration.
3. Contact factory for higher resistance values.
4. For CGH-1 and 2 above 500 meg and CGH-3 and 5 above 1000M only 2 and 5% tolerance and 100 ppm/°C TCR available.
5. Typical voltage coefficient of resistance is -1 to -2 ppm/V measured at fulll rated voltage and 10% rated voltage.

Power Derating Curve



Temperature Rise Chart



General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

BI Technologies IRC Welwyn

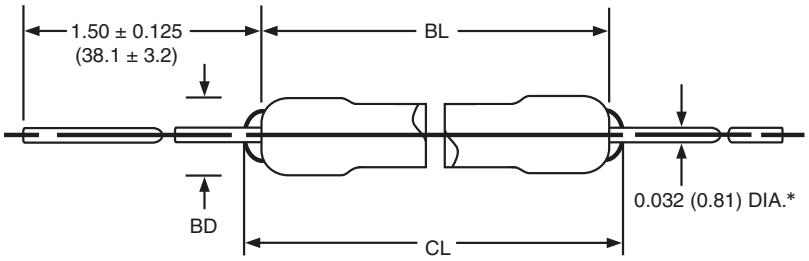
www.ttelectronics.com/resistors

Environmental Data

Test Condition[1]	Maximum ΔR (±3σ)	Typical[2] ΔR
Temperature Shock	±0.25%	±0.10%
Short-Time Overload (1.5 times rated V for 10 sec)	±0.20%	±0.10%
Solder Effect	±0.15%	±0.05%
Terminal Strength	±0.20%	±0.05%
Moisture Resistance (no load or polar)	±0.50%	±0.20%
Load Life (1000 hours at 70°C)	±1.00%	±0.25%
Shelf Life (1 year at 25°C)	±0.10%	±0.03%
High-Temperature Exposure (150°C for 2000 hours)	±0.75%	±0.30%
(175°C for 2000 hours)	±1.0%	±0.40%
Dielectric Breakdown[3] (1/4 and 1/2 watt size)	2000 VDC, 1500 VAC	
(1 watt through 5 watt size)	3500 VDC, 2500 VAC	
Dielectric Strength[4]	±0.15%	±0.05%
Insulation Resistance at 500 VDC	10^9 ohms typ.	10^{11} ohms typ.

Notes:
1. Test method per MIL-STD-202 unless otherwise indicated.
2. Typical defined as that percent change which will include a minimum of 50% of the measured changes in resistance from a variety of lots representing various unit sizes and ranges.
3. Values shown are the maximum safe dielectric voltage applied from a V block or foil wrapping which extends the complete body length of the resistor under test.
4. Percent change after the maximum safe dielectric voltage is applied for 1 minute.

Physical Data



* CGH 1/4 leads are
0.025 (0.64) in diameter"

Dimensions (Inches and (mm))

IRC Type	Body Length - BL	Body Diameter - BD	Clean Lead to Clean Lead - CL
CGH - 1/4	0.275 ± 0.031 (6.98 ± 0.79)	0.088 ± 0.010 (2.22 ± 0.25)	0.400 (10.16)
CGH - 1/2	0.400 ± 0.031 (10.16 ± 0.79)	0.138 ± 0.016 (3.51 ± 0.41)	0.525 (13.34)
CGH - 1	0.690 ± 0.062 (17.53 ± 1.57)	0.297 ± 0.031 (7.54 ± 0.79)	0.900 (22.86)
CGH - 2	1.062 ± 0.062 (26.97 ± 1.57)	0.297 ± 0.031 (7.54 ± 0.79)	1.250 (31.75)
CGH - 3	2.062 ± 0.062 (52.37 ± 1.57)	0.297 ± 0.031 (7.54 ± 0.79)	2.250 (57.15)
CGH - 5	3.062 ± 0.062 (77.77 ± 1.57)	0.297 ± 0.031 (7.54 ± 0.79)	3.250 (82.55)

Ordering Data

Sample Part No. CGH 3 - 100 - 2205 - F - LF

IRC Type
CGH 1/4, CGH 1/2, CGH 1, CGH 2, CGH 3, CGH 5

Temperature Coefficient
(±100 ppm/°C, ±50 ppm/°C)

Resistance

Tolerance
D = ±0.5%
F = ±1%
G = ±2%
J = ±5%

RoHS Indicator
LF indicates RoHS compliance
Omit this code for SnPb finish

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