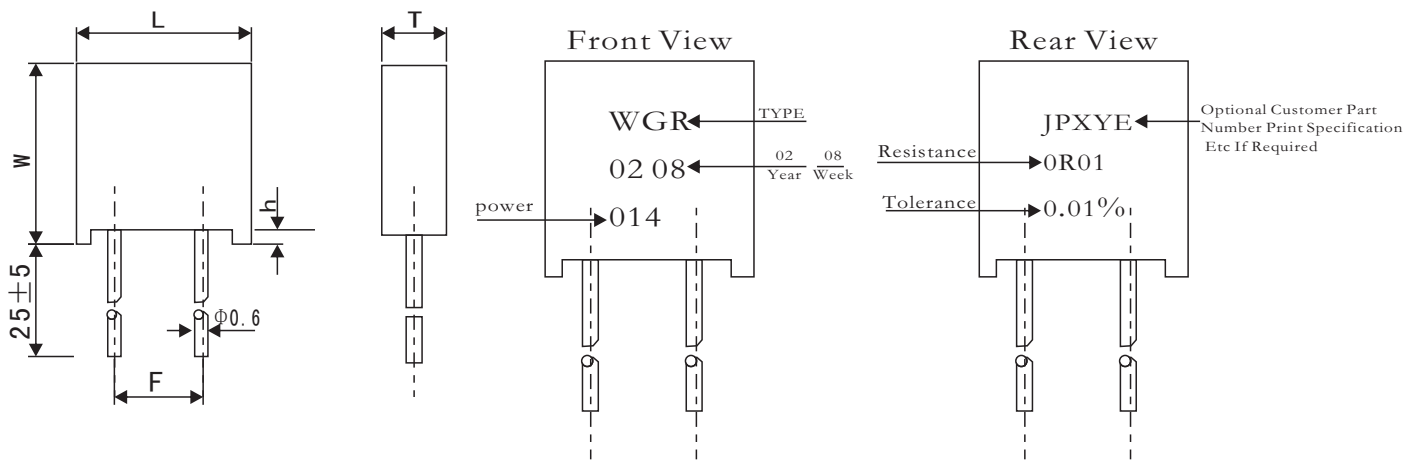




● Features

- I High precision and stability
- II Low TCR: $\pm 1\text{PPM}/^\circ\text{C} \sim \pm 10\text{PPM}/^\circ\text{C}$
- III Resistance tolerance: $\pm 0.005\% \sim \pm 0.1\%$
- IV Electrostatic discharge(ESD) at least to 25KV
- V Non inductive($< 80\mu\text{H}$),non capacitive design($< 0.5\text{PF}$)
- VI Voltage coefficient resistance(VCR): $< 0.1\text{PPM}/\text{V}$
- VII Current noise: $0.01\mu\text{VRMS}/\text{V}$ of applied voltage($< -40\text{dB}$)
- VIII Thermal EMF: $0.05\mu\text{V}/^\circ\text{C}$
- IX Rise time:1ns effectively no ringing
- X Terminal finishes available: lead(pb)-free, tin lead alloy

● Dimensions



TYPE	Power Rating		Standard Dimensions (mm)					Weight (g)	
	at $\pm 70^\circ\text{C}$	at $+125^\circ\text{C}$	$L \pm 0.25$	$W \pm 0.25$	$T \pm 0.25$	$F \pm 0.25$	$h \pm 0.25$		
WGR	018	0.2W	0.125W	7.7	8.0	3.0	3.9	0.3	0.6
	014	0.4W	0.2W	7.7	8.0	3.0	3.9	0.3	0.6
	05B	0.6W	0.3W	7.7	8.0	3.0	3.9	0.3	0.6
	1B	1W	0.5W	14.8	10.5	3.4	10.0	0.4	1.4
	1B2	1.5W	0.75W	22.4	10.5	3.4	16.2	0.4	2.0
	1B5	2.0W	1W	30.3	10.5	6.3	21.9	0.25	4.0

Notes:

- I 5.08mm lead spacing available-specify WGR18 WGR014 WGR05B
- II Standard test conditions:
 - 12.7mm from resistor body when the resistance value is higher than or equal to 10R;
 - 5mm from resistor body when the resistance value is lower than 10R.
 - Temperature: $+23^\circ\text{C} + 2^\circ\text{C}$
 - Relative humidity:65%
- III For non-standard requests, please contact application engineering kh@khxcom.com

Ordering Information

Example:

WGR	018	S	R100	C9
(1)	(2)	(3)	(4)	(5)
Series Name	Power Rating	Resistance Tolerance	Resistance Value	Forming

- (1) Style: WGR SERIES
- (2) Power Rating: 018=0.2W、014=0.4W、05B=0.6W
- (3) Tolerance: S=±0.005%、L=±0.01%、P=±0.02%
- (4) Resistance Value: R100=0.1Ω
- (5) Forming: C10=±1PPM/°C、C9=±2PPM/°C、C8=±3PPM/°C、C7=±5PPM/°C.

Reference Standards

MIL-PRF-55182

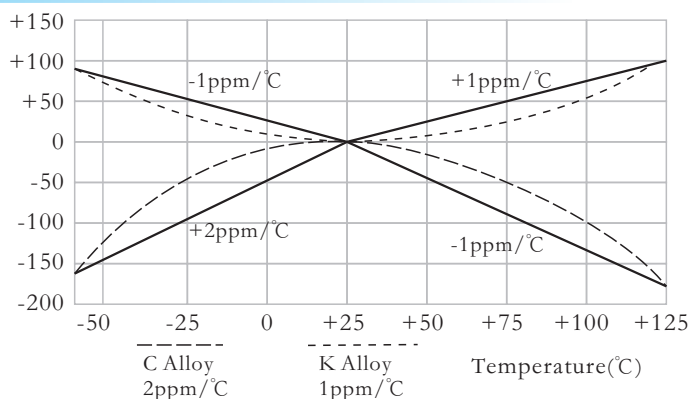
Applications And Ratings

TYPE		70°C Rating Power (W)	Resistance range (Ω)	Tolerance	TCR PPM/°C	Limit voltage (V)	AC/DC peak value	Insulation voltage (V)	AC/DC peak value	Operating Ambient Temperature
WGR	018	0.125	0.1-20K	S(±0.005%) L(±0.01%) P(±0.02%) W(±0.05%) B(±0.1%)	C10=±1PPM/°C C9=±2PPM/°C C8=±3PPM/°C C7=±5PPM/°C	200		280		-55°C ~ +175°C
	014	0.25	0.1-30K			250		350		
	05B	0.5	0.1-200K			300		450		
	1B	1.0	0.1-400K			350		500		
	1B2	1.2	0.3-600K			500		700		
	1B5	1.5	0.3-600K			500		700		
	1B5	1.5	0.4-800K			650		920		

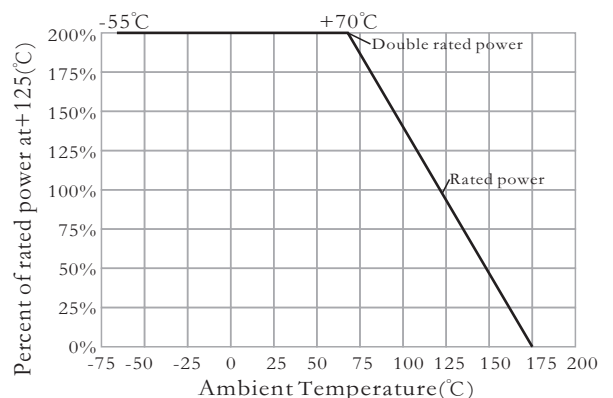
Notice:

- (1) R > 100Ω, ±0.005% products are available.
- (2) R ≤ 10Ω, ±0.01% products are available.
- (3) ±1 ~ ±3PPM/°C products are available.

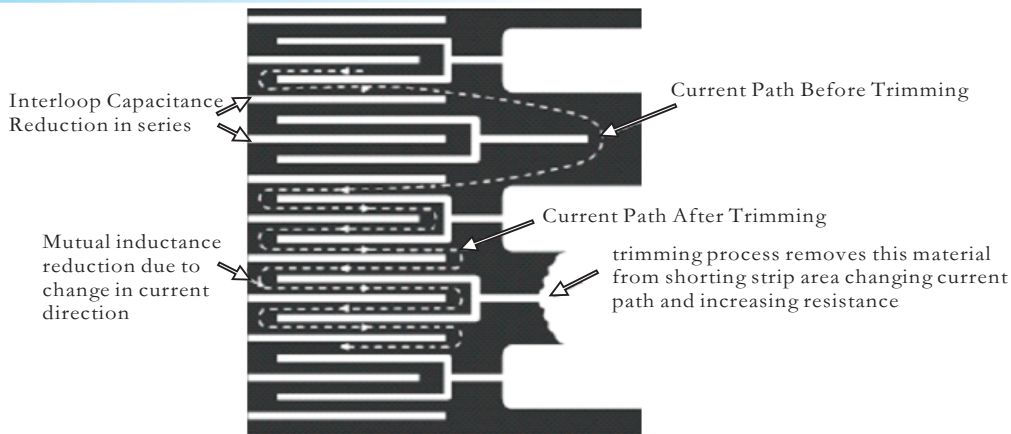
Temperature Curves And TCR



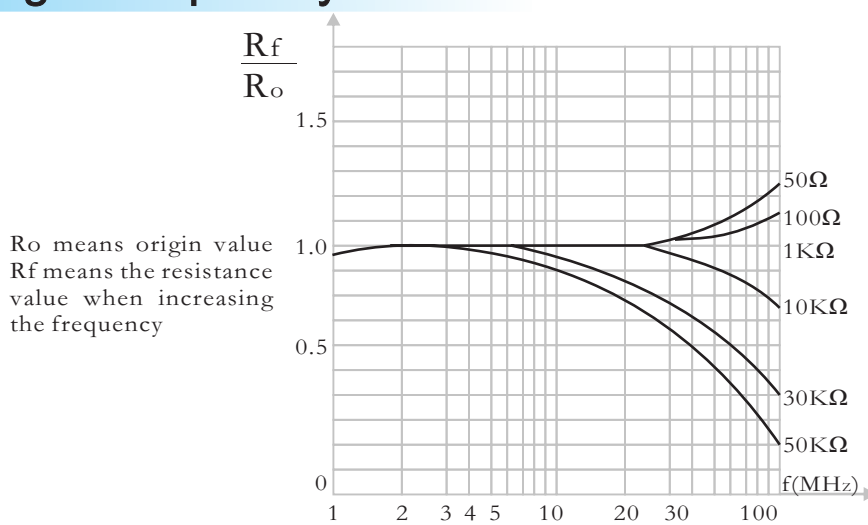
Derating Curve



Trimming To Resistance



High Frequency Characteristics



Performance Characteristics

Test Projects	MIL-PRF-55182 CHARJ	MAXIMUM ΔR	TYPICAL ΔR
Thermal Shock, 5x(-65°C To +150°C) Short Time Overload, 6.25x Rated Power	$\pm 0.2\%$ $\pm 0.2\%$	$\pm 0.01\%$ (100ppm) $\pm 0.01\%$ (100ppm)	$\pm 0.02\%$ (20ppm) $\pm 0.03\%$ (30ppm)
Resistance temperature characteristics low temperature storage(24 h at -65°C) low temperature operation (45min, rated power at -65°C) Terminal strength	$\pm 25\text{ppm}/^\circ\text{C}$ $\pm 0.15\%$ $\pm 0.15\%$ $\pm 0.2\%$	$\pm 6.5\text{ppm}/^\circ\text{C}$ $\pm 0.01\%$ (100ppm) $\pm 0.01\%$ (100ppm) $\pm 0.01\%$ (100ppm)	$\pm 2.0\text{ppm}/^\circ\text{C}$ $\pm 0.002\%$ (20ppm) $\pm 0.002\%$ (20ppm) $\pm 0.002\%$ (20ppm)
Dielectric withstanding voltage(DWV) Resistance to solder heat Moisture resistance	$\pm 0.15\%$ $\pm 0.1\%$ $\pm 0.4\%$	$\pm 0.01\%$ (100ppm) $\pm 0.01\%$ (100ppm) $\pm 0.05\%$ (500ppm)	$\pm 0.002\%$ (20ppm) $\pm 0.005\%$ (50ppm) $\pm 0.01\%$ (100ppm)
Shock Vibration	$\pm 0.2\%$ $\pm 0.2\%$	$\pm 0.01\%$ (100ppm) $\pm 0.01\%$ (100ppm)	$\pm 0.002\%$ (20ppm) $\pm 0.002\%$ (20ppm)
Life test at 0.3W/+125°C 2000h 10000h	$\pm 0.5\%$ $\pm 2.0\%$	$\pm 0.015\%$ (150ppm) $\pm 0.05\%$ (500ppm)	$\pm 0.01\%$ (100ppm) $\pm 0.03\%$ (300ppm)
Life test at 0.6W(2x rated power)/+70°C, 2000h	$\pm 0.5\%$	$\pm 0.015\%$ (150ppm)	$\pm 0.01\%$ (100ppm)
High temperature exposure(2000h at +175°C)	$\pm 2.0\%$	$\pm 0.1\%$ (1000ppm)	$\pm 0.05\%$ (500ppm)
Voltage coefficient	5ppm/V	<0.1ppm/V	<0.1ppm/V