

CARBON FILM RESISTORS

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INTRODUCTION

The resistance temperature coefficient of carbon film resistors is relatively high. Their resistance value changes inversely with temperature. But, as they are big in volume, causing quick dissipation of heat and low temperature rise, they are good enough in quality stability and reliability. And are therefore popularly used in consumer electronic appliances. In addition to the above general features. Our CR series carbon film fixed resistors have the following features in particular.

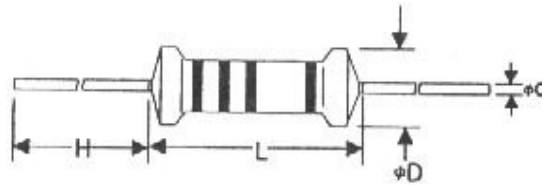
精選良品瓷棒於高溫中分離有機化合物，使碳素均勻的附著於瓷體上，再經壓帽、切割、焊接、塗裝等過程，以大量方式生產，品質穩定，價格低廉，為各類電阻中最受廣泛使用的一種。

FEATURES

- Automated mass production, low prices.
- Exception long-term stability.
- Standard tolerance: $\pm 2\%$, $\pm 5\%$.
- Variety of packaging-bulk, and taped, cut and formed supplied.

特性

- 低成本。
- 獨特的穩定性。
- 標準的容許誤差： $\pm 2\%$ ， $\pm 5\%$ 。
- 有各式包裝-散裝、帶狀，並供應各種成型，剪腳。



SPECIFICATION

DIMENSION

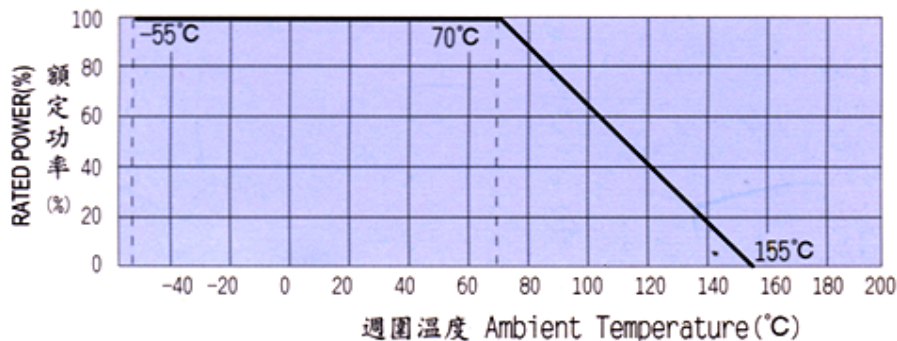
TYPE		MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE		TYPE		DIMENSION(mm)			
CR	CRS			$\pm 2\%$ (G)	$\pm 5\%$ (J)	CR	CRS	L ± 1	D ± 0.5	H ± 3	d
1/8W	---	200V	400V	1R~10M	1R~10M	1/8W	1/4W	3.0	1.5	28	0.43 ± 0.05
1/4W	1/4W	250V	500V	1R~10M	1R~10M	1/4W	1/2W	5.5	2.0	28	0.50 ± 0.10
1/2WA	---	300V	600V	1R~10M	1R~10M	1/2WA	---	8.0	2.5	28	0.56 ± 0.10
1/2W	1/2W	350V	700V	1R~10M	1R~10M	1/2W	1W	8.5	3.0	30	0.56 ± 0.10
1W	1W	500V	1000V	1R~10M	1R~10M	1W	2W	11	4.0	30	0.68 ± 0.10
2W	2W	500V	1000V	1R~10M	1R~10M	2W	3W	15	4.5	30	0.75 ± 0.10
3W	3W	750V	1200V	1R~10M	1R~10M	3W	5W	17	5.5	33	0.75 ± 0.10

※Special type on request (EX : Flame Proof Type & High-Meg Ohm)

CHARACTERISTICS

REQUIREMENTS	PERFORMANCE					TEST METHOD	
						JIS C 5202	MIL-STD-202
Operating Temp. Range	-55°C ~ +155°C					-----	-----
Temp. Coefficient (ppm/°C)	T.C.R	±450	-150 -700	-150 -1,000	-150 -1,300	5.2	METHOD 304
	0.125W	under 1KΩ	1.1KΩ~47KΩ	51KΩ~510KΩ	560KΩ~1MΩ		
	0.25W	under 10KΩ	1.1KΩ~150KΩ	160KΩ~2.2MΩ	2.4MΩ~5.1MΩ		
	0.5W&OVER	under 22KΩ	24KΩ~470KΩ	510KΩ~2.2MΩ	2.4MΩ~10MΩ		
Noise (μV/V)	NOISE	0.1	0.3	0.6	1.0	5.9-11	METHOD 308
	0.125W&0.16W		under 10KΩ	11KΩ~100KΩ	over 110KΩ		
	0.25W&OVER	under 100KΩ	110KΩ~510KΩ	560KΩ~2.2MΩ	Over 2.4MΩ		
Dielectric Withstanding Voltage	No evidence of flashover or breakdown					5.7-A	METHOD 301
Resistance to solvents	Permanent Marking No physical or electrical damage or deterioration					-----	METHOD 215
Short Time Overload	$\Delta R_{max} \leq \pm(1\% + 0.05\Omega)$					5.5-A	
Resistance to Soldering Heat	$\Delta R_{max} \leq \pm(1\% + 0.05\Omega)$					6.4-350°C 3 sec	METHOD 210
Temperature Cycling	$\Delta R_{max} \leq \pm(0.5\% + 0.05\Omega)$					7.4-55°C 85°C	METHOD 107
Vibration	$\Delta R_{max} \leq \pm(0.5\% + 0.05\Omega)$					6.3.3-A	METHOD 204
Moisture Resistance	R > 100KΩ	$\Delta R_{max} \leq \pm 5\%$				7.9. 40°C 90-95% RH. 1000hrs	METHOD 106
	R ≤ 100KΩ	$\Delta R_{max} \leq \pm(3\% + 0.05\Omega)$					
Load Life	R > 100KΩ	$\Delta R_{max} \leq \pm 3\%$				7.10 70°C 1000hrs	METHOD 108
	R ≤ 100KΩ	$\Delta R_{max} \leq \pm(2\% + 0.05\Omega)$					

DERATING CURVE



ORDERING INFORMATION

RC	02	10K0	J	I
Series : Carbon Film Resistor	Wattage : RC08=1/8W RC04=1/4W RC02=1/2W RC1W=1W	Value : 0E50=0.5R 2E30=2.3R 1K00=1K 10M0=10M	Tolerance : J=5% G=2% F=1%	Packing : T=Tapping B=Bulk M=Forming