CARBON FILM FIXED RESISTORS

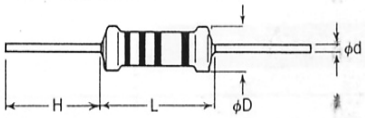
CR (EPOXY COATING TYPE)
FCR (FLAME-PROOF COATING TYPE)

ELECTRICAL SPECIFICATIONS

All measurements are taken at +25° at 1KHz and 65% relative humidity, unless otherwise stated.

FEATURE

- Meet requirements of JIS-C-5202 and MIL-R-22684B!
- The most economic industrial investment!
- Quicker dissipation of heat!
- Lower temperature rise!
- Small shelf life drift!
- Wider resistance range: 0.5Ω - 10 MegΩ
- Tolerance available: ±5%, ±2%, ±1%
- Wattage available: 1/16W, 1/8W, 1/6W, 1/4W, 1/3W, 1/2W, 1W, 2W, 3W
- Variety of packaging: Bulk, Tape in Box (Ammopack T-26, T-52, T-74), Tape on Reel, Cut-and-Formed and vertical Panasert/Avisert

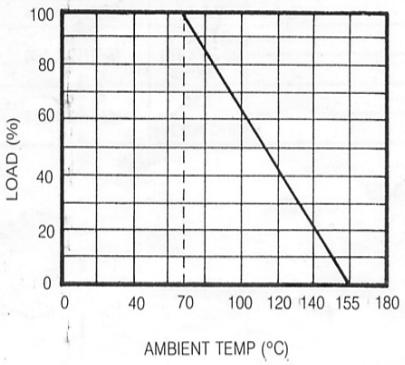


SPECIFICATIONS

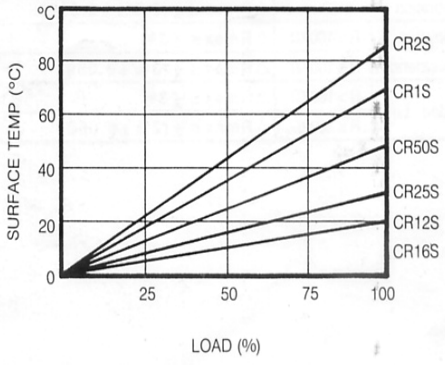
TYPE	POWER RATING	DIMENSIONS (mm)				MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE
		L	D	H	d			
C R-12	1/8W,1/16W	3.2±0.2	1.5±0.2	28±2	0.48±0.02	200V	400V	1Ω - 4.7 M
C R-12	1/4WS	3.2±0.2	1.5±0.2	28±2	0.48±0.02	250V	500V	1Ω - 4.7 M
C R-25	1/4W	6.0±0.5	2.3±0.3	28±2	0.60±0.02	250V	500V	• STANDARD 0.5Ω-10MegΩ • SPECIAL low to 0.05Ω High to 47MegΩ
C R-33	1/3W	8.5±0.5	2.7±0.5	28±2	0.60±0.02	300V	600V	
C R-50S	1/2WS	8.5±0.5	2.7±0.5	28±2	0.60±0.02	350V	700V	
C R-50	1/2W	9.0±0.5	3.2±0.5	28±2	0.60±0.02	350V	700V	
C R-50B	1/2WB	9.0±0.5	3.5±0.5	28±2	0.60±0.02	350V	700V	
C R-100S	1WS	9.0±0.5	3.5±0.5	28±2	0.60±0.02	500V	1000V	
C R-100	1W	11 ±1.0	4.0±0.5	35±3	0.80±0.02	500V	1000V	
C R-200S	2WS	11 ±1.0	4.0±0.5	35±3	0.80±0.02	500V	1000V	
C R-200	2W	15 ±1.0	5.0±0.5	35±3	0.80±0.02	500V	1000V	
C R-300	3W	17 ±1.0	6.0±0.5	35±3	0.80±0.02	500V	1000V	

FCR series have the same specifications as C R series except flame retardant.

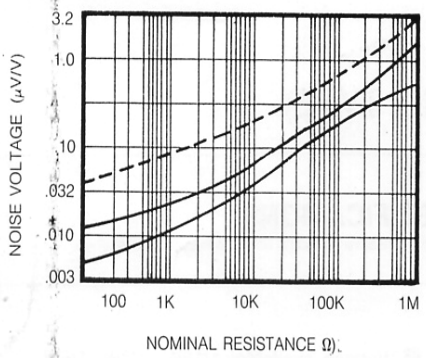
DERATING CURVE



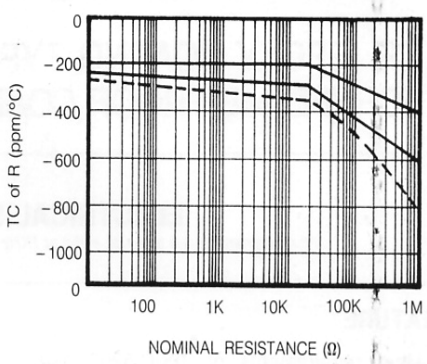
SURFACE TEMP RISE



CURRENT NOISE



TEMPERATURE COEFFICIENT



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. TYPE	±350	-150 -600	- 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	24KΩ470KΩ	510KΩ-2.2MΩ	2.4MΩ10MΩ		
Noise (μV/V)		NOISE TYPE	0.1	0.3	0.6	1.0	5.9-11	METHOD 308
		0.125W & 0.160W	-	under 10KΩ	11KΩ100KΩ	over 100KΩ		
		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		△Rmax ≤ ±(1% + 0.05Ω)					5.5-A	
Resistance to Soldering Heat		△Rmax ≤ ±(1% + 0.05Ω)					6.4 350°C 3 sec	METHOD 201
Temperature Cycling		△Rmax ≤ ±(0.5% + 0.05Ω)					7.4-55°C/ 85°C	METHOD 107
Vibration		△Rmax ≤ ±(0.5% + 0.05Ω)					6.3.3-A	METHOD 204
Moisture Resistance	R>100KΩ	△Rmax ≤ ±5%					7.9, 40°C 90-95% RH, 1000hrs	METHOD 106
	R≤100KΩ	△Rmax ≤ ±(3% + 0.05Ω)						
Load Life	R>100KΩ	△Rmax ≤ ±3%					7.10 70°C 1000hrs	METHOD 108
	R≤100KΩ	△Rmax ≤ ±(2% ± 0.05Ω)						