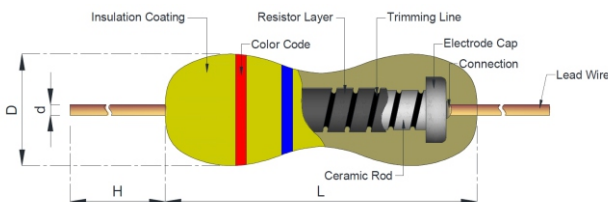


INTRODUCTION

High quality thermally conductive ceramic core with carbon film and conformally protected by multiple epoxy coatings.

FEATURES

- Exceptional long term stability
- Flameproof coating available
- Special values maybe requested

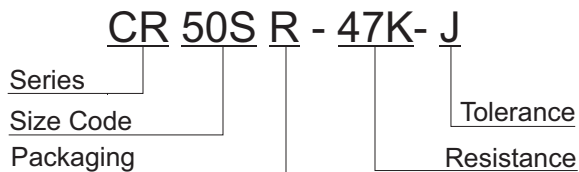


POWER RATING & DIMENSIONS (mm)

Code	Rated Wattage	Max. Working Voltage	Max. Overload Voltage	Dimensions				Resistance Range (Ω)	Standard Taping
				L ± .5	D ± .5	H	d ± .05		
CR12	0.125	200V	400V	3.5	1.8	26	0.40	1 ~ 10M	T52
CR25M				3.5	1.8	26	0.40	0.5 ~ 22M	
CR25	0.25	250V	500V	6.0	2.3	26	0.45		
CR50M				6.0	2.3	26	0.45	0.5 ~ 22M	
CR50S				9.0	3.2	26	0.52		
CR100S	1	500V	1000V	9.0	3.2	26	0.52	0.5 ~ 22M	T73
CR100				11.0	3.7	35	0.65		
CR200S	2	500V	1000V	11.0	3.7	35	0.65	0.5 ~ 22M	
CR200				15.5	5.0	35	0.72		
CR300S				3	500V	1000V	17.0	6.0	

1. Resistance Range for standard resistance, below or over this resistance range on request.
2. Above resistance range is based on ±5% tolerance. Other tolerance is available on request.

PART NUMBER EXAMPLE



TOLERANCE

±%	0.1	0.25	0.5	1	2	5
Code	B	C	D	F	G	J

RESISTANCE

Ohms	0.5	1.5	1.5K	15K	1.5Meg	150Meg
Code	0R5	1R5	1K5	15K	1M5	150M

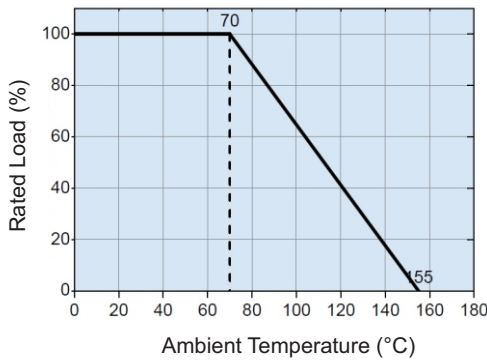
PACKAGING

Packaging Code	R	A	B	C
Description	Tape & Reel	Taped Box	Loose (Bulk)	Cut & Form
Special Taping Suffix	T52, T73			

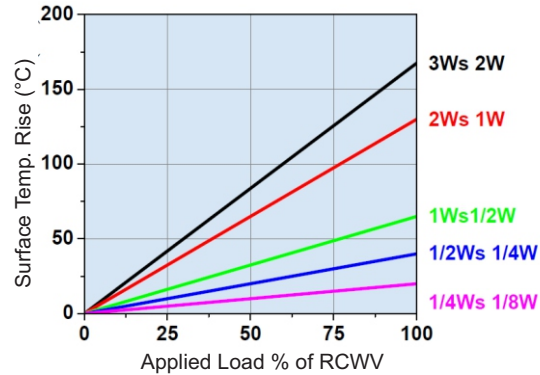
ELECTRICAL CHARACTERISTICS

ITEMS		CR12 (0.125W)	CR25/M (0.25W)	CR50M/S (0.50W)	CR100/S (1W)	CR200/S (2W)	CR300S (3W)
Operating Temperature		-55°C to +155°C (derated at 70°C / see chart)					
Temperature Coefficient (ppm / °C)	Under 1Ω	±1500ppm			±1500ppm		
	1Ω to 100KΩ	+350ppm -500ppm			±350ppm		
	100KΩ to 1MΩ	-0ppm -700ppm			-0ppm -500ppm		
	1MΩ to 4.7MΩ	-0ppm -1500ppm			-0ppm -1000ppm		
Short Time Overload		$\Delta R \leq \pm(0.75\% + 0.05\Omega)$					
Load Life		$\Delta R \leq \pm(5\% + 0.05\Omega)$					
Dielectric Withstanding Voltage		$\Delta R \leq \pm(0.5\% + 0.05\Omega)$					
Pulse Overload		$\Delta R \leq \pm(1\% + 0.05\Omega)$					
Insulation Resistance		JIS-C5202 5.6 In V-Block >10,000MΩ					
Load Life in Humidity		$\Delta R \leq \pm(5\% + 0.05\Omega)$					
Solder Ability		JIS-C5202 6.5 95% minimum coverage					
Soldering Heat Resistance		$\Delta R \leq \pm(2\% + 0.05\Omega)$					
Terminal Strength		Direct load for 10 sec. in the direction off the terminal leads Tensile : $\geq 2.5\text{Kg}$					

Derating Curve



Hot-Spot Temperature

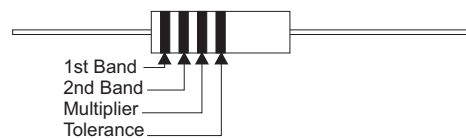


Rated continuous Working Voltage (RCWV) = $\sqrt{\text{POWER.RATING.} * \text{RESISTANCE.VALUE}}$

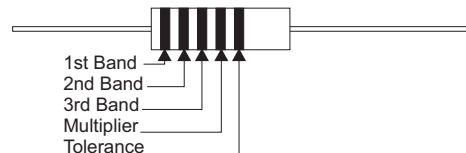
COLOR CODE CHART

Color	1st Band	2nd Band	3rd Band (B ~ F Tol)	Multiplier	Tolerance	Tolerance Code
Black	0	0	0	10 ⁰		
Brown	1	1	1	10 ¹	±1%	F
Red	2	2	2	10 ²	±2%	G
Orange	3	3	3	10 ³		
Yellow	4	4	4	10 ⁴		
Green	5	5	5	10 ⁵	±0.5%	D
Blue	6	6	6	10 ⁶	±0.25%	C
Violet	7	7	7	10 ⁷	±0.10%	B
Gray	8	8	8	10 ⁸	±0.05%	A
White	9	9	9	10 ⁹		
Gold				10 ⁻¹	±5%	J
Silver				10 ⁻²	±10%	K

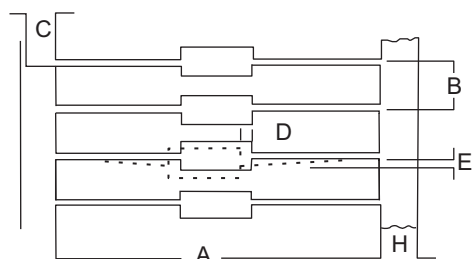
For ±5% Tolerance



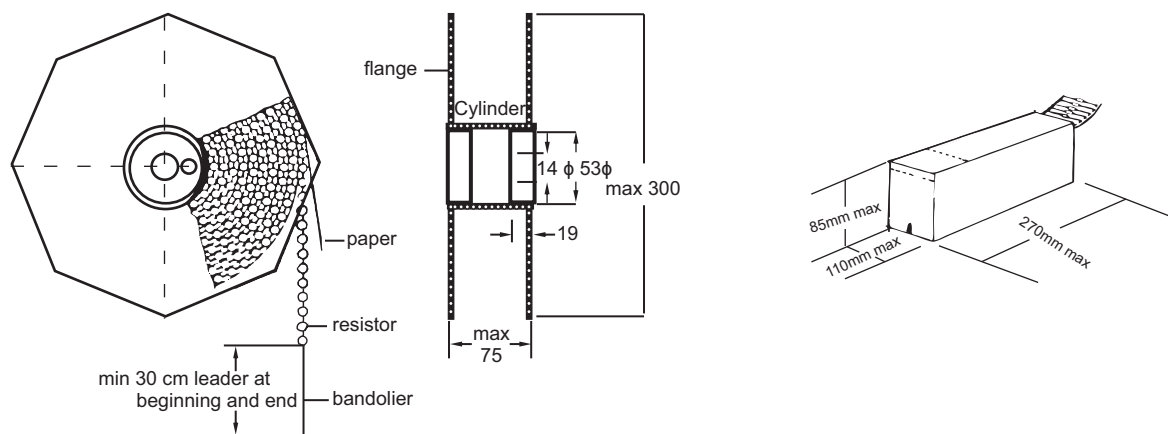
For ±1% Tolerance



TAPE, REEL & AMMO SPECIFICATIONS



Body Diameter	Size Code	A	B	C	D	E	H
< 5mm	T-52	52 ± 1	5 ± 0.5	4.0 min.	0.8 max.	1.2 max.	6 ± 1
> 5mm	T-52	52 ± 1	10 ± 0.5	4.0 min.	0.8 max.	1.2 max.	6 ± 1
	T-73	73 ± 1					



RESISTANCE DECADE TABLE

Resistance Tolerance	Resistance Values																							
M (20%)	1.0	1.5	2.2	3.3	4.7	6.8																		
K (10%)	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2												
G (2%), J (5%)	1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0	3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1
F (1%)	1.00	1.10	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.37	2.61	2.87	3.16	3.48	3.83	4.22	4.64	5.11	5.62	6.19	6.81	7.50	8.25	9.09
	1.02	1.13	1.24	1.37	1.50	1.65	1.82	2.00	2.21	2.43	2.67	2.94	3.24	3.57	3.92	4.32	4.75	5.23	5.76	6.34	6.98	7.68	8.45	9.31
	1.05	1.15	1.27	1.40	1.54	1.69	1.87	2.05	2.26	2.49	2.74	3.01	3.32	3.65	4.02	4.42	4.87	5.36	5.90	6.49	7.15	7.87	8.66	9.53
	1.07	1.18	1.30	1.43	1.58	1.74	1.91	2.10	2.32	2.55	2.80	3.09	3.40	3.74	4.12	4.53	4.99	5.49	6.04	6.65	7.32	8.06	8.87	9.76
D (0.5%)	1.00	1.10	1.21	1.33	1.47	1.62	1.78	1.96	2.15	2.37	2.61	2.87	3.16	3.48	3.83	4.22	4.64	5.11	5.62	6.19	6.81	7.50	8.25	9.09
C (0.25%)	1.01	1.11	1.23	1.35	1.49	1.64	1.80	1.98	2.18	2.40	2.64	2.91	3.20	3.52	3.88	4.27	4.70	5.17	5.69	6.26	6.90	7.59	8.35	9.20
B (0.1%)	1.02	1.13	1.24	1.37	1.50	1.65	1.82	2.00	2.21	2.43	2.67	2.94	3.24	3.57	3.92	4.32	4.75	5.23	5.76	6.34	6.98	7.68	8.45	9.31
A (0.05%)	1.04	1.14	1.26	1.38	1.52	1.67	1.84	2.03	2.23	2.46	2.71	2.98	3.28	3.61	3.97	4.37	4.81	5.30	5.83	6.42	7.06	7.77	8.56	9.42
	1.05	1.15	1.27	1.40	1.54	1.69	1.87	2.05	2.26	2.49	2.74	3.01	3.32	3.65	4.02	4.42	4.87	5.36	5.90	6.49	7.15	7.87	8.66	9.53
	1.06	1.17	1.29	1.42	1.56	1.72	1.89	2.08	2.29	2.52	2.77	3.05	3.36	3.70	4.07	4.48	4.93	5.42	5.97	6.57	7.23	7.96	8.76	9.65
	1.07	1.18	1.30	1.43	1.58	1.74	1.91	2.10	2.32	2.55	2.80	3.09	3.40	3.74	4.12	4.53	4.99	5.49	6.04	6.65	7.32	8.06	8.87	9.76
	1.09	1.20	1.32	1.45	1.60	1.76	1.93	2.13	2.34	2.58	2.84	3.12	3.44	3.79	4.17	4.59	5.05	5.56	6.12	6.73	7.41	8.16	8.98	9.88