



CARBON FILM FIXED RESISTOR

JDRCF Series

Deqing Jiahe Electronic Technology Co., Ltd.

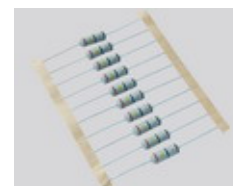
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Features

1. Small size, high performance.
2. Tolerance: $\pm 2\%$, $\pm 5\%$, $\pm 10\%$ available.
3. Tinned copper wire or copper clad steel lead wire available.
4. RoHS compliant.



Specifications

Spec No.	Power	Dimension (mm)				Resistance	TCR ppm/°C	V1	V2	V3	Tol.	Tape
		L ± 0.5	D ± 0.5	H ± 3	d ± 0.1							
R018	1/8W	3.2	1.8	28	0.43	1.0 Ω ~100K Ω	± 450	200V	400V	200V	$\pm 2\%$ $\pm 5\%$	TP26/TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R014S	1/4W	3.2	1.8	28	0.43	1.0 Ω ~100K Ω	± 450	200V	400V	200V	$\pm 2\%$ $\pm 5\%$	TP26/TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R014	1/4W	6.3	2.3	28	0.50	1.0 Ω ~100K Ω	± 450	250V	500V	250V	$\pm 2\%$ $\pm 5\%$	TP26/TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R012S	1/2W	6.3	2.3	28	0.50	1.0 Ω ~100K Ω	± 450	350V	700V	350V	$\pm 2\%$ $\pm 5\%$	TP26/TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R012	1/2W	9.0	3.2	28	0.55	1.0 Ω ~100K Ω	± 450	350V	700V	350V	$\pm 2\%$ $\pm 5\%$	TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R011S	1W	9.0	3.2	28	0.55	1.0 Ω ~100K Ω	± 450	500V	1000V	500V	$\pm 2\%$ $\pm 5\%$	TP52
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R011	1W	11	4.5	28	0.65	1.0 Ω ~100K Ω	± 450	500V	1000V	500V	$\pm 2\%$ $\pm 5\%$	TP65
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					
R021S	2W	11	4.5	28	0.65	1.0 Ω ~100K Ω	± 450	500V	1000V	500V	$\pm 2\%$ $\pm 5\%$	TP65
						100K Ω ~1.0M Ω	0~-700					
						1.0M Ω ~10M Ω	0~-1500					

Spec No.	Power	Dimension (mm)				Resistance	TCR ppm/°C	V1	V2	V3	Tol.	Tape
		L±0.5	D±0.5	H±3	d±0.1							
R021	2W	15	5	28	0.70	1.0Ω~100KΩ	±450	500V	1000V	500V	±2% ±5%	TP65
						100KΩ~1.0MΩ	0~-700					
						1.0MΩ~10MΩ	0~-1500					
R031S	3W	15	5	28	0.70	1.0Ω~100KΩ	±450	500V	1000V	500V	±2% ±5%	TP65
						100KΩ~1.0MΩ	0~-700					
						1.0MΩ~10MΩ	0~-1500					
R031	3W	17	6	28	0.70	1.0Ω~100KΩ	±450	500V	1000V	500V	±2% ±5%	TP65
						100KΩ~1.0MΩ	0~-700					
						1.0MΩ~10MΩ	0~-1500					
R051S	5W	17	6	28	0.70	1.0Ω~100KΩ	±450	500V	1000V	500V	±2% ±5%	TP65
						100KΩ~1.0MΩ	0~-700					
						1.0MΩ~10MΩ	0~-1500					

V1: Maximum operating voltage

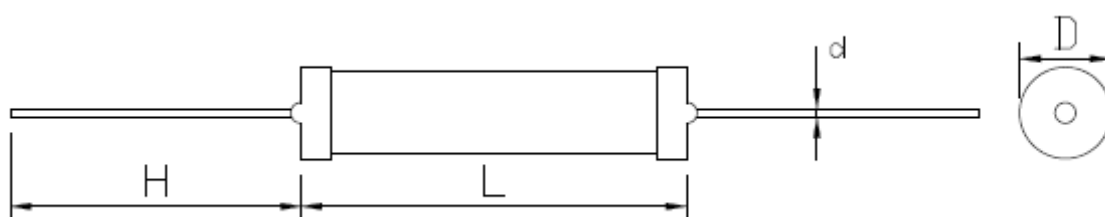
V2: Maximum overload voltage

V3: Maximum insulation voltage

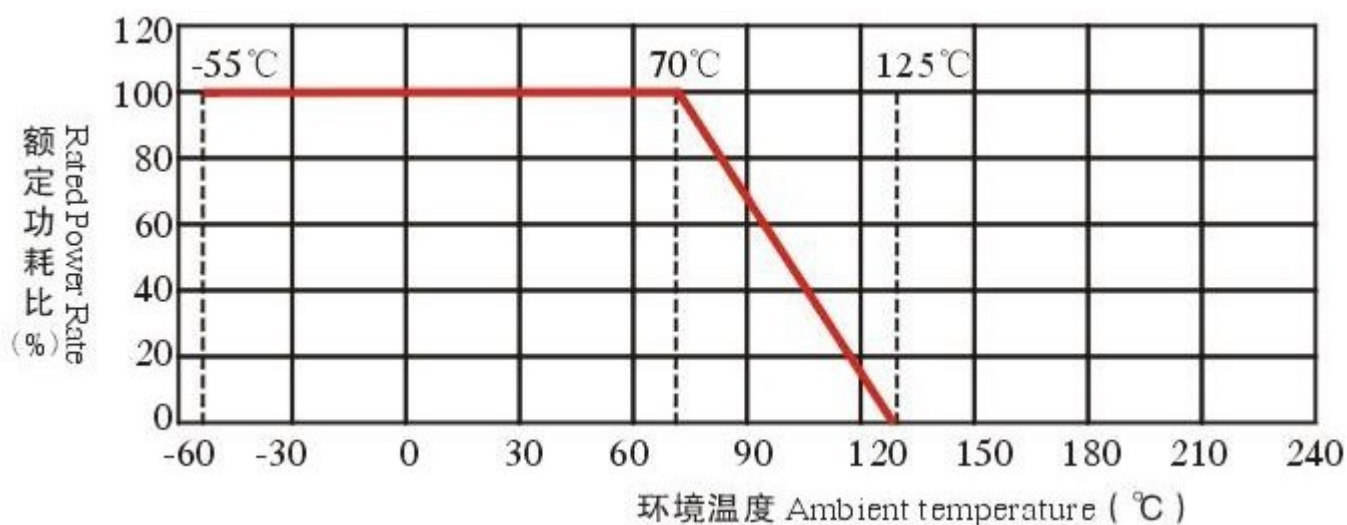
Rated voltage= $\sqrt{\text{Power} \times \text{Resistance}}$

V4: The smaller value between V1 and Rated voltage

Demension



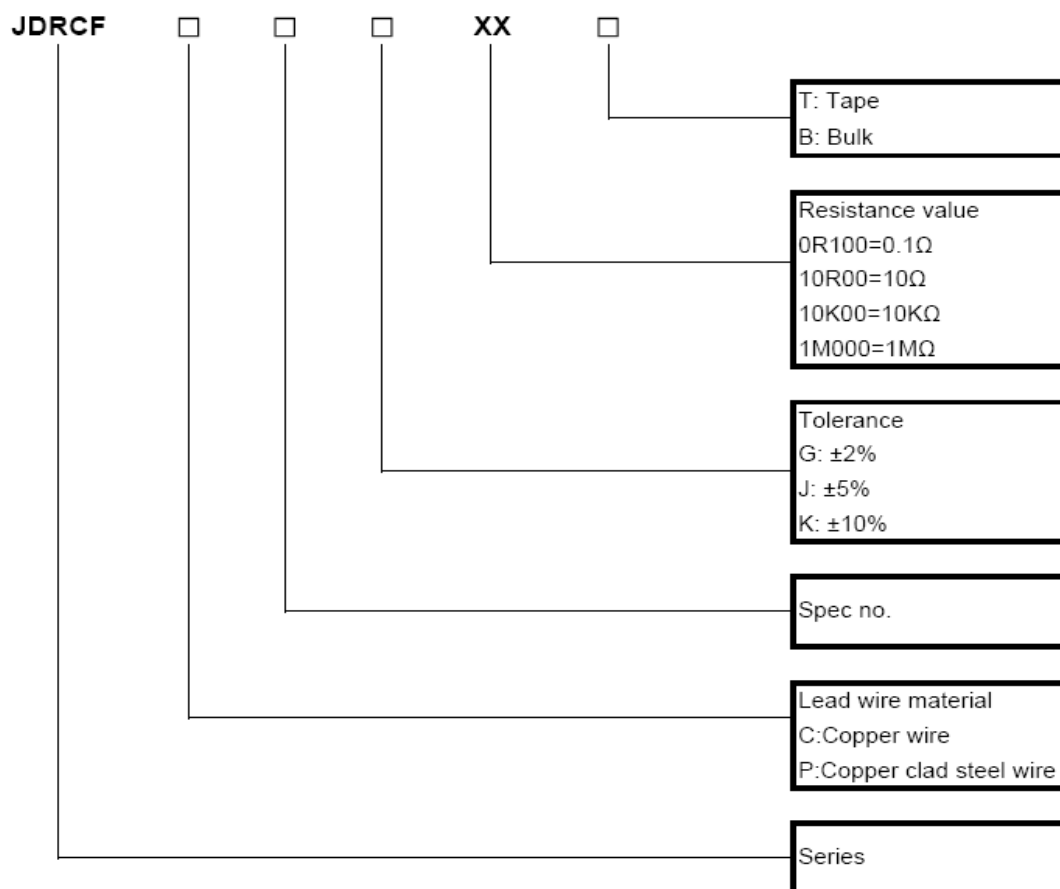
Rated Power Derating Curve



Reliability Test

Test Item	Test Condition	Performance
Temperature coefficient	Test the resistance value at +25°C and +125°C, calculate the change value of resistance per °C	See specification
Short time overload	Load 2.5*V4 for 5 seconds	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$
Pulse overload	Load 4*V4 for 10000±200 cycles (1 cycle: 1s on and 25s off)	$\Delta R \leq \pm(2\%R_0 + 0.05\Omega)$
Solder-heat resistance	Immerge into Tin stove at 350±10°C for 2~3 seconds	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$
Solderability	Immerge into Tin stove at 245±10°C for 2~3 seconds	The soldering area is over 95%
Temperature cycle	-55°C for 30 minutes → 25°C for 10~15 minutes → +125°C for 30 minutes, total 5 cycles	$\Delta R \leq \pm(1\%R_0 + 0.05\Omega)$
Load life in humidity	Load V4 (1.5 h ON and 0.5h OFF) at 40±2°C 90~95%RH for 1000h	$\Delta R \leq \pm(5\%R_0 + 0.05\Omega)$
Load life in heat	Load V4 (1.5 h ON and 0.5h OFF) at 70±2°C for 1000h	$\Delta R \leq \pm(5\%R_0 + 0.05\Omega)$

Part Number Rule



Remark: For tape dimensions, please refer file "Tape Specification".

For example:

JDRCF-C-R011S-J22R00T

1W 9xØ3.2 ±5% 22Ω Copper lead wire Tape Carbon film fixed resistor

JDRCF-P-R031-G4K70B

3W 24xØ8 ±2% 4.7KΩ Copper clad steel lead wire Bulk Carbon film fixed resistor

Color Rings

The resistance and tolerance of the resistor are indicated with the color code refer to JIS-C-0802.

Color	1st ring	2nd ring	Multiple	Tolerance
Black	0	0	1x	
Brown	1	1	10x	
Red	2	2	100x	±2%
Orange	3	3	1000x	
Yellow	4	4	10000x	
Green	5	5	-----	
Blue	6	6	-----	
Violet	7	7	-----	
Grey	8	8	-----	
White	9	9	-----	
Gold			0.1x	±5%
Silver			0.01x	±10%

