

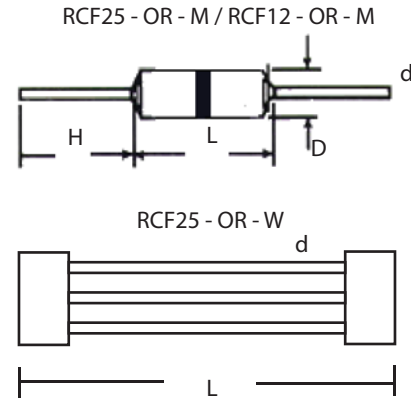
Zero Ohm and Jumper Wire
Type RCF Series

△ Applications

- Used when circuit path on a PC board needs to be crossed over.
- Used for circuit tuning by changing point connections.

All Liberty Resistors uses the highest quality tin coated copper leads. The leads are rated at the below MAXIMUM soldering temperature and soldering time.

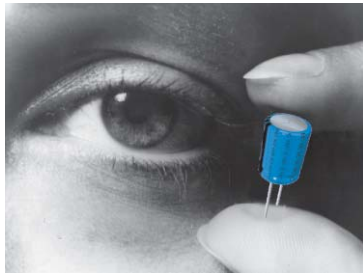
MAXIMUM soldering temperature/time
350°C 3sec
235°C 2min



△ Specifications

Construction	Part Number	L	D	H (Min)	d
Jumper Wire	RCF24 * - OR - W	61.5 ± 1			0.6 ± 0.5
Ceramic (Metal Body)	RCF16 * - OR - C(M)	3.8 ± 0.5	1.5 ± 0.2	27	0.45 ± 0.5
Ceramic (Metal Body)	RCF25 * - OR - C(M)	6.5 ± 0.3	2.5 ± 0.2	27	0.6 ± 0.5
Ceramic (Metal Body)	RCF - 51 - OR - C(M)	9 ± 0.5	3.2	25	0.6 ± 0.5
Ceramic (Metal Body)	RCF - 100 - OR - C(M)	11	4.5	30	0.8 ± 0.03
Ceramic (Metal Body)	RCF - 200 - OR - C(M)	16	6	30	0.8 ± 0.03

Test	Test Method	Limits
Resistance		0.01 ohm max.
Operating Temperature		-55 °C to +155 °C
Max Current		25amps @ +25 °C (ZR25)
Max Working Voltage		300Vdc
Max Overload Voltage		600Vdc
Temperature Coefficient		(PPM/ °C) 0 to -100 PPM
Short Time Overload	Apply 2.5 times the rated voltage for 5 sec.	No visible damage
Load	1000 hrs. at 70 °C a direct voltage applied, cycles of 1.5 hrs on and 0.5 hrs off throughout test.	Δ R = 0.5%
Temperature Cycling	5 cycles of 30 min. duration at the extrements of temp. range, max. and min., measurements of ohmic value 4 hrs. after completion of test.	Δ R = 0.5%
Dielectric Strength	Using a 90 °C "V" shaped conductive block, applying 100V min., increasing 100V/sec. for 5 seconds	Δ R = 0.5%
Humidity	350 hrs. at 40 °C, 90 to 95% Rh	R = 0.5%
Solderability	Dipped in Sn/Pb(60/40) at 235 °C, 5 sec. 1.5 mm from the body.	95% ø of tested surface covered
Vibration	By MIL STD.202, 201A	
Terminal Strength	Traction, applied 2.5kg for 10 sec. Bends, 2 bends 90 °C applying load to terminals of 0.5kg. Twist 2 successive turn 180 °C, 6mm from body.	No visible damage
Resistance to Solvents	Trichlorethylene, TMC as the most aggressive for 60 sec. at boiling point.	No visible damage



Carbon Film Fixed Resistors
Type RCF Series

△ Features

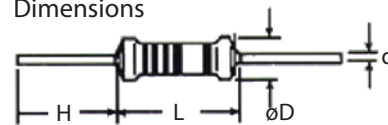
- Resistance temperature coefficient is relatively high.
- Quick dissipation of heat and low temperature rise.
- Low price.
- Selected superior quality materials to ensure stability and reliability.
- Variety of packaging available: bulk, strip pack, tape and reel, etc.

△ Applications

- Easily used for various medical, telecom and consumer electronic equipment.

△ Specifications

Dimensions

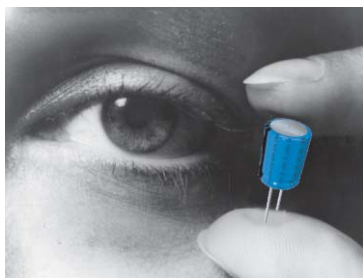


All Liberty Resistors uses the highest quality tin coated copper leads. The leads are rated at the below MAXIMUM soldering temperature and soldering time.

MAXIMUM soldering temperature/time
350°C 3sec
235°C 2min

Fixed Component Resistors

Requirements		Performance				Test Method	
Operating Temp. Range		-55°C ~ +155°C				JIS C 5202	MIL-STD-202
Temp Coefficient (ppm/°C)	Type	T.C.R.				-	-
		± 150	-150 -700	-150 -1,000	-150 -1,300	5.2	Method 304
	0.125W	Under 1K Ω	1.1K Ω - 47K Ω	51K Ω - 510K Ω	560 Ω - 1M Ω		
	0.25W	Under 1K Ω	1.1K Ω - 150K Ω	160K Ω - 2.2M Ω	2.4M Ω - 5.1M Ω		
0.5W & Over	Under 1K Ω	24K Ω - 470K Ω	510K Ω - 2.2K Ω	2.4M Ω - 10M Ω			
Noise (µV/V)	Type	Noise					
		0.1	0.3	0.6	1.0	5.9-11	Method 308
	0.125W	-	Under 10K Ω	11K Ω - 100K Ω	Over 110K Ω		
0.25W & Over	Under 100K Ω	110K Ω - 510K Ω	560K Ω - 2.2M Ω	Over 110K Ω			
Dielectric Withstanding		No evidence of flashover or breakdown				5.7-A	Method 301
Resistance to Solvents		Permanent marking no physical or electrical damage or				-	Method 215
Short Time Overload		ΔRmax ≤ ± (1% ± 0.05Ω)				5.5-A	
Resistance to Soldering Heat		ΔRmax ≤ ± (1% ± 0.05Ω)				6.4, 350°C 3 Sec.	Method 210
Temperature Cycling		ΔRmax ≤ ± (0.5% ± 0.05Ω)				7.4, 55°C / 85°C	Method 107
Vibration		ΔRmax ≤ ± (0.5% ± 0.05Ω)				6.3.3-A	Method 204
Moisture Resistance	R>100KΩ	ΔRmax ≤ ± 5%				7.9,40°C 90-95% RH 1000Hrs	Method 106
	R≤100KΩ	ΔRmax ≤ ± (3% ± 0.05Ω)					
Load Life	R>100KΩ	ΔRmax ≤ ± 3%				7.10, 70°C 1000Hrs	Method 108
	R≤100KΩ	ΔRmax ≤ ± (2% ± 0.05Ω)					



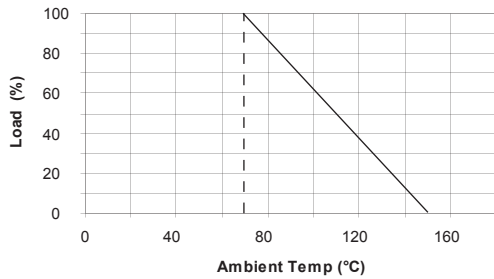
Carbon Film Fixed Resistors
Type RCF Series

Δ Dimensions

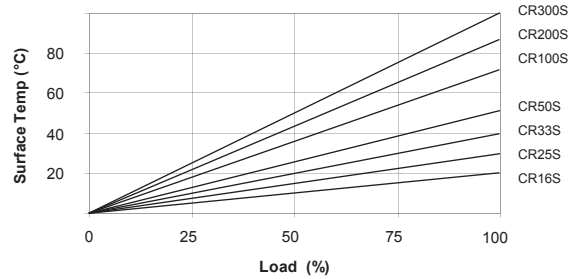
Type	POWER RATING (W)	L±0.5	D±0.5	H (Min)	D±0.03	Max. Working V.	Max. Overload V.	Resistance Range ±2%(G)	±5%(J)
RCF-16	1/8W	3.7	1.6	27	0.46	200V	400V	10Ω - 470K	0.1Ω - 47M
RCF-20	1/4WS	3.7	1.6	27	0.46	200V	400V	10Ω - 470K	0.1Ω - 47M
RCF-25	1/4W	6.5	2.5	27	0.58	250V	500V	10Ω - 1M	0.1Ω - 47M
RCF-33	1/3W	8.5	2.8	25	0.58	300V	600V	10Ω - 1M	0.1Ω - 47M
RCF-52	1/2WS	6.5	2.5	27	0.58	250V	500V	10Ω - 1M	0.1Ω - 47M
RCF-50	1/2W	9.0	3.2	25	0.58	350V	700V	10Ω - 1M	0.1Ω - 47M
RCF-100	1W	11.0	4.5	30	0.80	500V	1000V	10Ω - 1M	0.1Ω - 47M
RCF-200	2W	16.0	5.0	30	0.80	500V	1000V	10Ω - 1M	0.1Ω - 47M
RCF-300	3W	17.0	6.0	30	0.80	650V	1200V	10Ω - 470K	0.1Ω - 47M

Fixed Component Resistors

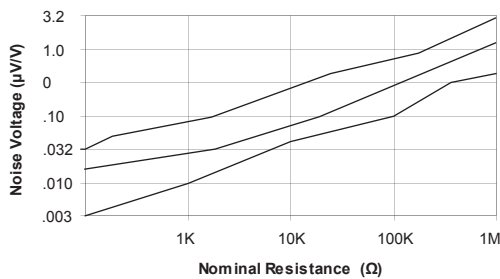
Derating Curve



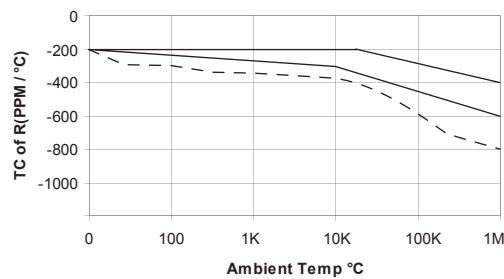
Surface Temp Rise



Current Noise



Temperature Coefficient



Δ Part Numbering

