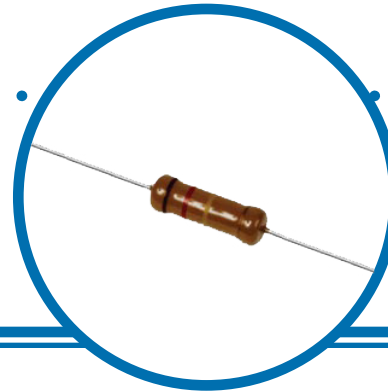


Commercial Grade Carbon Film Resistor

CCF Series

- Great economy
- Automatically insertable
- High quality performance
- Flame retardant type available

OBSOLETE



Electrical Data

IRC Type	Power Rating at 70°C (W)	Resistance Range* (Ohms)	Tolerance (±%)	TCR (±ppm/°C)	Max. Working Voltage (V)	Max. Overload Voltage (V)	Dielectric Withstanding Voltage (V)
Standard Size							
CCF - 1/8	0.125	1 - 1M	2, 5, 10	300 (≤10Ω) 450 (11 - 99KΩ) 0 to -700 (100K - 1MΩ) 0 to -1500 (1.1M - 10MΩ)	200	400	400
CCF - 1/4	0.25	1 - 10M			250	500	500
CCF - 1/2	0.5	1 - 10M			350	700	700
CCF - 1	1	1 - 10M			500	1000	1000
CCF - 2	2	1 - 10M			500	1000	1000
Miniature Size							
CCFM - 1/8	0.125	1 - 1M	2, 5, 10	300 (≤10Ω) 450 (11 - 99KΩ) 0 to -700 (100K - 1MΩ) 0 to -1500 (1.1M - 10MΩ)	200	400	400
CCFM - 1/4	0.25	1 - 10M			250	500	500
CCFM - 1/2	0.5	1 - 10M			350	700	700
CCFM - 1	1	1 - 10M			500	1000	1000
CCFM - 2	2	1 - 10M			500	1000	1000
CCFM - 3	3	1 - 10M			500	1000	1000

*For resistance values outside these ranges, contact factory.

General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

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Commercial Grade Carbon Film Resistor

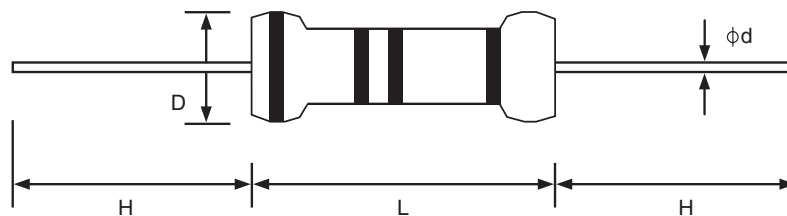
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Environmental Data

Short-time overload	$\Delta R/R \leq (\pm 1\% + 0.05\Omega)$, with no evidence of mechanical damage
Insulation resistance	Min. 10,000M Ω
Dielectric withstanding voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown
Terminal strength	No evidence of mechanical damage
Resistance to Soldering heat	$\Delta R/R \leq (\pm 1\% + 0.05\Omega)$, with no evidence of mechanical damage
Solderability	Minimum 95% coverage
Resistance to solvent	No deterioration of protective coating and markings
Temperature cycling	$\Delta R/R \leq (\pm 1\% + 0.05\Omega)$, with no evidence of mechanical damage
Load life in humidity	Standard type: $\Delta R/R \pm 3\%$ for <100K Ω , $\pm 5\%$ for $\geq 100K\Omega$; Flame retardant type: $\Delta R/R \pm 5\%$ for <100K Ω , $\pm 10\%$ for $\geq 100K\Omega$
Load life	Standard type: $\Delta R/R \pm 2\%$ for <56K Ω , $\pm 3\%$ for $\geq 56K\Omega$; Flame retardant type: $\Delta R/R \pm 5\%$ for <100K Ω , $\pm 10\%$ for $\geq 100K\Omega$

Physical Data



Dimensions (mm)

	IRC Type	D (max.)	L (max.)	d (± 0.02)	H (± 3)
Standard Sizes	CCF - 1/8	1.85	3.5	0.5	28
	CCF - 1/4	2.5	6.8	0.6	28
	CCF - 1/2	3.5	10.0	0.6	28
	CCF - 1	5.5	16.0	0.8	28
	CCF - 2	6.5	17.5	0.8	28
Miniature Sizes	CCFM - 1/8	1.85	3.5	0.5	28
	CCFM - 1/4	3.0	6.8	0.6	28
	CCFM - 1/2	3.0	9.0	0.6	28
	CCFM - 1	5.0	12.0	0.7	28
	CCFM - 2	5.5	16.0	0.8	28
	CCFM - 3	6.5	17.5	0.8	28

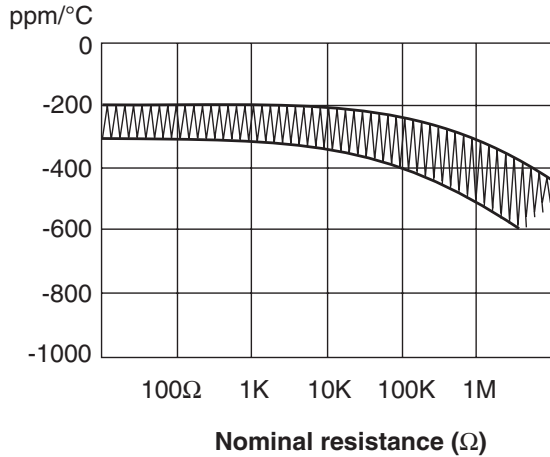
Commercial Grade Carbon Film Resistor

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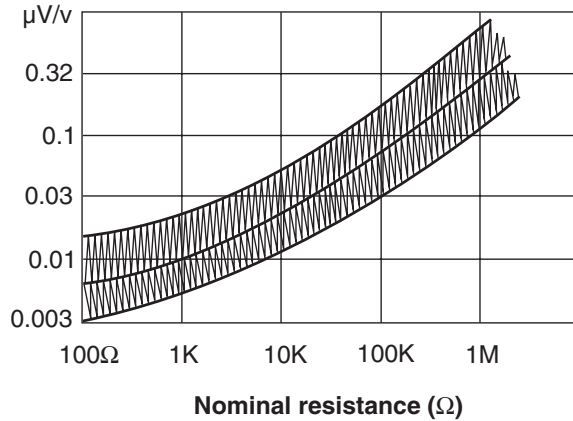


Performance Curves

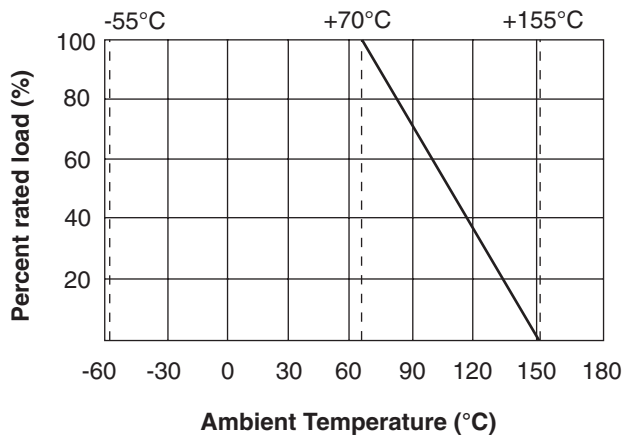
Temperature Coefficient



Current Noise Level



Derating Curve



Ordering Data

Specify type, resistance, tolerance, RoHS-Compliance and packaging. This example is for a Carbon Film Resistor, 0.5-watt, 1000Ω resistor.

Sample Part No. **CCF** **1/4** **1000** **J** **LF** **TR**

IRC Type
 CCF - Standard size carbon film resistor
 CCFM - Miniature size carbon film resistor

Power rating
 (see specs table)

Resistance Value (EIA 4-digit code)
 (≥1000Ω - First 3 significant digits plus 4th digit multiplier)
 Example: 1000Ω = 1000; 10000Ω = 1001
 (>1000Ω - "R" is used to designate decimal)
 Example: 10Ω = 51R0; 1Ω = 1R00

Tolerance (EIA format)
 G = ±2%
 J = ±5%
 K = ±10%

RoHS - Compliance
 LF = RoHS compliant construction

Packaging
 TR = tape & reel
 AMMO = ammo packaging