

Metal Film Resistors, Industrial, ± 1 % Tolerance



FEATURES

- Power ratings: 1/2 W, 3/4 W and 1 W at + 70 °C
- ± 100 ppm/°C temperature coefficient
- Superior electrical performance
- Flame retardant epoxy conformal coating
- Standard 5 band color code marking for ease of identification after mounting
- Tape and reel packaging for automatic insertion (52.4 mm inside tape spacing per EIA-296-E)
- Compliant to RoHS directive 2002/95/EC



RoHS*
COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\text{ }^\circ\text{C}}$ W	LIMITING ELEMENT VOLTAGE MAX. V_{\equiv}	TEMPERATURE COEFFICIENT ppm/°C	TOLERANCE %	RESISTANCE RANGE Ω	E-SERIES
CCF60	CCF-60	0.50/0.75/1.0	500	± 100	± 1	10R - 1M	96

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	CCF60
Rated Dissipation at 70 °C	W	0.50/0.75/1.0
Maximum Working Voltage	V_{\equiv}	≤ 500
Insulation Voltage (1 Min)	V_{eff}	500
Dielectric Strength	V_{AC}	450
Insulation Resistance	Ω	≥ 10 ¹¹
Operating Temperature Range	°C	- 65 to + 165
Terminal Strength (Pull Test)	lb	2
Weight	g	0.75 max.

GLOBAL PART NUMBER INFORMATION

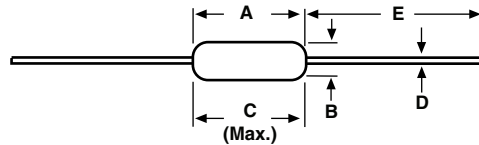
New Global Part Numbering: CCF60301RFKR36 (preferred part numbering format)

C	C	F	6	0	3	0	1	R	F	K	R	3	6
GLOBAL MODEL		RESISTANCE VALUE				TOLERANCE CODE		TEMPERATURE COEFFICIENT		PACKAGING			
CCF60		R = Decimal K = Thousand M = Million 10R0 = 10 Ω 680K = 680 k Ω 1M00 = 1.0 M Ω				F = ± 1 %		K = 100 ppm		E36 = Lead (Pb)-free, T/R (2500 pieces) R36 = Tin/lead, T/R (2500 pieces)			

Historical Part Number example: CCF-603010F R36 (will continue to be accepted)

CCF-60	3010	F	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

* Pb containing terminations are RoHS compliant, exemptions may apply

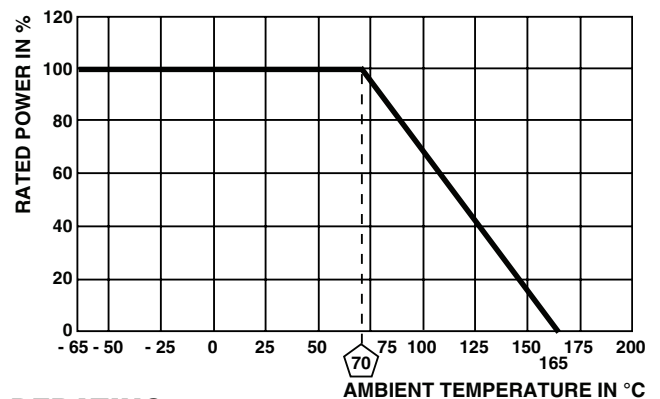
DIMENSIONS in inches [millimeters]


GLOBAL MODEL	A	B	C (Max.)	D	E
CCF60	0.344 ± 0.031 [8.74 \pm 0.79]	0.139 ± 0.009 [3.53 \pm 0.23]	0.400 [10.16]	0.025 ± 0.002 [0.64 \pm 0.05]	1.000 ± 0.040 [25.40 \pm 1.02]

RESISTANCE VALUES

Vishay Dale model CCF60 is available in the standard 96 resistance values per decade. Values are obtained from the following decade table by multiplying by powers of 10. As an example: 30.1 can represent 30.1 Ω , 301 Ω , 3.01 k Ω , 30.1 k Ω or 301 k Ω .

10.0	14.7	21.5	31.6	46.4	68.1
10.2	15.0	22.1	32.4	47.5	69.8
10.5	15.4	22.6	33.2	48.7	71.5
10.7	15.8	23.2	34.0	49.9	73.2
11.0	16.2	23.7	34.8	51.1	75.0
11.3	16.5	24.3	35.7	52.3	76.8
11.5	16.9	24.9	36.5	53.6	78.7
11.8	17.4	25.5	37.4	54.9	80.6
12.1	17.8	26.1	38.3	56.2	82.5
12.4	18.2	26.7	39.2	57.6	84.5
12.7	18.7	27.4	40.2	59.0	86.6
13.0	19.1	28.0	41.2	60.4	88.7
13.3	19.6	28.7	42.2	61.9	90.9
13.7	20.0	29.4	43.2	63.4	93.1
14.0	20.5	30.1	44.2	64.9	95.3
14.3	21.0	30.9	45.3	66.5	97.6


DERATING
MARKING

- Color band

PERFORMANCE

POWER RATING at + 70 °C		
CCF60	1/2 W	3/4 W and 1 W
TEST (1)	MAXIMUM ΔR	MAXIMUM ΔR
Thermal Shock	$\pm 0.5\%$	-
Short Time Overload	$\pm 0.5\%$	-
Low Temperature Operation	$\pm 0.5\%$	-
Moisture Resistance	$\pm 1.5\%$	-
Resistance to Soldering Heat	$\pm 0.5\%$	-
Shock	$\pm 0.5\%$	-
Vibration	$\pm 0.5\%$	-
Life	$\pm 0.5\%$	$\pm 1.0\%$
Terminal Strength	$\pm 0.2\%$	-
Dielectric Withstanding Voltage	$\pm 0.5\%$	-

Note

(1) Test methods per MIL-STD-202



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