



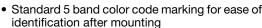
www.vishay.com

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





Tape and reel packaging for automatic insertion (52.4 mm inside tape spacing per EIA-296-E)

 Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

Note

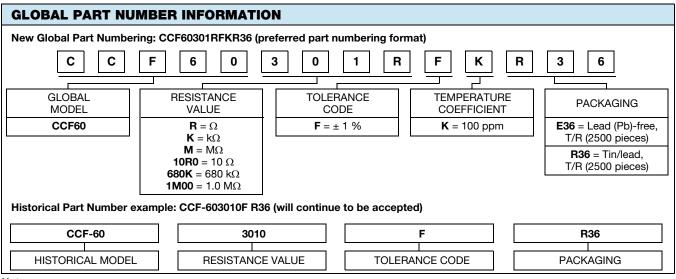
* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

STANDARD ELECTRICAL SPECIFICATIONS								
GLOBAL MODEL	HISTORICAL MODEL	POWER RATING P _{70 °C} W	MAXIMUM WORKING VOLTAGE (1) V	TEMPERATURE COEFFICIENT ± ppm/°C	TOLERANCE ± %	$\begin{array}{c} \text{RESISTANCE} \\ \text{RANGE} \\ \Omega \end{array}$	E-SERIES	
CCF60	CCF-60	1.0	500	100	1	10 to 1M	96	

Note

Continuous working voltage shall be \(\sqrt{P} \times R \) or maximum working voltage, whichever is less.

TECHNICAL SPECIFICATIONS				
PARAMETER	UNIT	CCF60		
Rated Dissipation at 70 °C	W	1.0		
Maximum Working Voltage	V	≤ 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.		

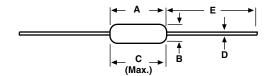


Note

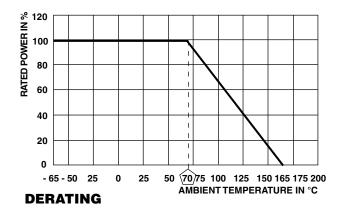
For additional information on packaging, refer to the Through-Hole Resistor Packaging document (<u>www.vishay.com/doc?31544</u>).

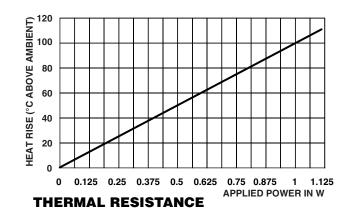


DIMENSIONS in inches (millimeters)



GLOBAL MODEL	Α	В	C (Max.)	D	E
CCF60	0.344 ± 0.031	0.139 ± 0.009	0.400	0.025 ± 0.002	1.000 ± 0.040
	(8.74 ± 0.79)	(3.53 ± 0.23)	(10.16)	(0.64 ± 0.05)	(25.40 ± 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 .

301 kΩ.					
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

MARKING

Color code marking with 5 color bands

PERFORMANCE					
POWER RATING AT + 70 °C	MAXIMUM ∆R (TYPICAL TEST LOTS)				
CCF60	1/2 W	3/4 W and 1 W			
TEST (1)					
Thermal Shock	± 0.5 %	-			
Short Time Overload	± 0.5 %	-			
Low Temperature Operation	± 0.5 %	-			
Moisture Resistance	± 1.5 %	-			
Resistance to Soldering Heat	± 0.5 %	-			
Shock	± 0.5 %	-			
Vibration	± 0.5 %	-			
Life	± 0.5 %	± 1.0 %			
Terminal Strength	± 0.2 %	-			
Dielectric Withstanding Voltage	± 0.5 %	-			

Note

(1) Test methods per MIL-STD-202

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Vishay

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