

Metal Film Resistors, Industrial, $\pm 1\%$ and $\pm 5\%$ Tolerance



FEATURES

- 0.33 W power rating
- ± 100 ppm/ $^{\circ}\text{C}$ standard, ± 50 ppm/ $^{\circ}\text{C}$ available upon request
- Superior electrical performance
- Flame retardant epoxy conformal coating
- Standard 4 or 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)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS*
COMPLIANT

Note

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70^{\circ}\text{C}}$ W	MAXIMUM WORKING VOLTAGE V ⁽²⁾	TEMPERATURE COEFF. ⁽¹⁾ \pm ppm/ $^{\circ}\text{C}$	TOLERANCE \pm %	RESISTANCE RANGE Ω	E-SERIES
CCF50	CCF-50	0.33	200	100	1, 5	10 to 1M	96 for 1 % 24 for 5 %

Notes

⁽¹⁾ 50 ppm/ $^{\circ}\text{C}$ on request

⁽²⁾ Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CCF50
Rated Dissipation at 70 $^{\circ}\text{C}$	W	0.33
Maximum Working Voltage	V	≤ 200
Insulation Voltage (1 Min)	V_{eff}	> 500
Dielectric Strength	V_{AC}	450
Insulation Resistance	Ω	$\geq 10^{11}$
Operating Temperature Range	$^{\circ}\text{C}$	- 65 to + 165
Weight	g	0.11 max.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CCF50301RFKR36 (preferred part numbering format)

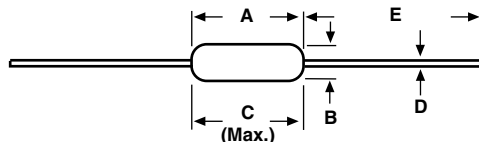
C	C	F	5	0	3	0	1	R	F	K	R	3	6			
GLOBAL MODEL		RESISTANCE VALUE				TOLERANCE CODE		TEMPERATURE COEFFICIENT		PACKAGING			SPECIAL			
CCF50		R = Ω K = kΩ M = MΩ 10R0 = 10 Ω 680K = 680 kΩ 1M00 = 1.0 MΩ				F = ± 1 % J = ± 5 %		H = 50 ppm K = 100 ppm		E36 = Lead (Pb)-free, T/R (5000 pieces) R36 = Tin/Lead, T/R (5000 pieces)			Blank = Standard (Dash Number) (up to 3 digits) From 1 to 999 as applicable			

Historical Part Number example: CCF-503010F (will continue to be accepted)

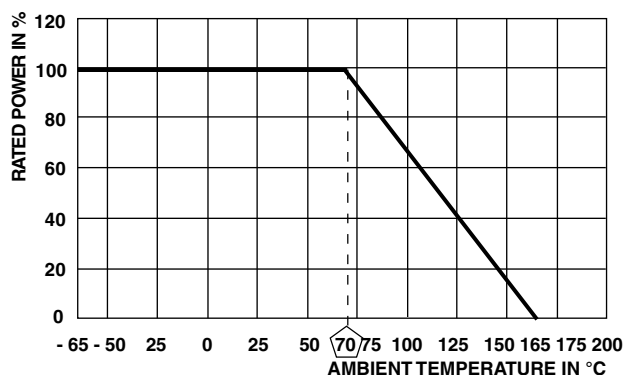
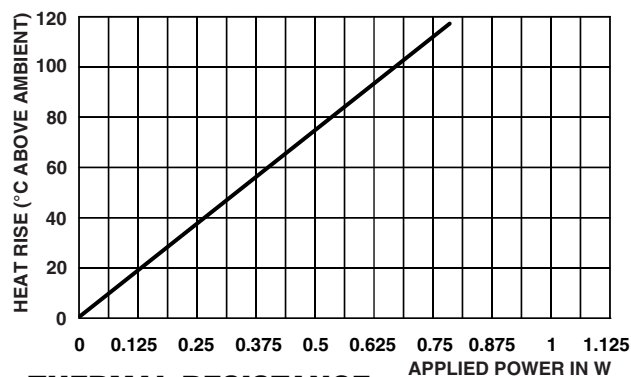
CCF-50	3010	F	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

Note

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

DIMENSIONS in inches (millimeters)


DIMENSION	INCHES	MILLIMETERS
A	0.133 ± 0.010	(3.3 ± 0.025)
B	0.062 ± 0.004	(1.57 ± 0.10)
C (Max.)	0.143	(3.63)
D	0.020 ± 0.002	(0.51 ± 0.05)
E	1.125 ± 0.040	(28.58 ± 1.02)


DERATING

THERMAL RESISTANCE
MARKING

Color code marking with 5 color bands for $\pm 1\%$ product and 4 color bands for $\pm 5\%$ product

PERFORMANCE

TEST ⁽¹⁾	MAXIMUM ΔR (TYPICAL TEST LOTS)
Thermal Shock	$\pm 0.1\%$
Short Time Overload	$\pm 0.1\%$
Low Temperature Operation	$\pm 0.1\%$
Moisture Resistance	$\pm 0.2\%$
Resistance to Soldering Heat	$\pm 0.05\%$
Shock	$\pm 0.1\%$
Vibration	$\pm 0.05\%$
Life	$\pm 0.5\%$
Terminal Strength	$\pm 0.1\%$
Dielectric Withstanding Voltage	$\pm 0.05\%$

Note

⁽¹⁾ Tests per MIL-R-10509



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Vishay:

<u>CCF5018R2FKR36</u>	<u>CCF502K21FLR36</u>	<u>CCF5053R6FKR36</u>	<u>CCF5010R0FKR36</u>	<u>CCF50226RFKR36</u>
<u>CCF50221RFLR36</u>	<u>CCF50165KFLR36</u>	<u>CCF50200KFLR36</u>	<u>CCF5032R4FKR36</u>	<u>CCF501K00FKR36</u>
<u>CCF501M00FKR36</u>	<u>CCF5056K2FKR36</u>	<u>CCF501K54FLR36</u>	<u>CCF50511KFKR36</u>	<u>CCF50174KFKR36</u>
<u>CCF506K65FKR36</u>	<u>CCF501K58FKR36</u>	<u>CCF50178KFKR36</u>	<u>CCF50402RFKR36</u>	<u>CCF50499RFKR36</u>
<u>CCF502K00FKR36</u>	<u>CCF50475KFKR36</u>	<u>CCF505K76FKR36</u>	<u>CCF506K04FKR36</u>	<u>CCF50232RFKR36</u>
<u>CCF501K87FLR36</u>	<u>CCF5082K5FKR36</u>	<u>CCF501K82FLR36</u>	<u>CCF501K91FKR36</u>	<u>CCF5036R5FKR36</u>
<u>CCF501K96FKR36</u>	<u>CCF505K11FKR36</u>	<u>CCF506K49FKR36</u>	<u>CCF50150KFKR36</u>	<u>CCF5044K2FLR36</u>
<u>CCF506K81FLR36</u>	<u>CCF50576KFKR36</u>	<u>CCF502K15FKR36</u>	<u>CCF501K54FKR36</u>	<u>CCF5021R5FKR36</u>
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<u>CCF5075R0FKR36</u>	<u>CCF5039R2FKR36</u>	<u>CCF50619KFKR36</u>	<u>CCF50237KFKR36</u>	<u>CCF50316KFKR36</u>
<u>CCF50732KFKR36</u>	<u>CCF50243KFKR36</u>	<u>CCF50249KFKR36</u>	<u>CCF501K18FLR36</u>	<u>CCF50511RFKR36</u>
<u>CCF50422KFKR36</u>	<u>CCF5016K2FKR36</u>	<u>CCF50590RFKR36</u>	<u>CCF5041K2FKR36</u>	<u>CCF5015R8FKR36</u>
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<u>CCF50121KFKR36</u>	<u>CCF501K21FLR36</u>	<u>CCF5043K2FKR36</u>	<u>CCF5030K9FKR36</u>	<u>CCF501K58FLR36</u>
<u>CCF50909RFKR36</u>	<u>CCF5011K5FLR36</u>	<u>CCF50549KFKR36</u>	<u>CCF502K80FKR36</u>	<u>CCF50140KFKR36</u>
<u>CCF502K70FKR36</u>	<u>CCF5090R9FLR36</u>	<u>CCF50147KFKR36</u>	<u>CCF502K43FLR36</u>	<u>CCF501K37FKR36</u>
<u>CCF5017K8FKR36</u>	<u>CCF508K06FKR36</u>	<u>CCF5027R4FKR36</u>	<u>CCF5017K4FKR36</u>	<u>CCF50787KFKR36</u>
<u>CCF50287KFKR36</u>	<u>CCF5022K6FKR36</u>	<u>CCF50576RFKR36</u>	<u>CCF50536RFKR36</u>	<u>CCF50510RFKR36</u>
<u>CCF50357KFKR36</u>	<u>CCF5019K1FKR36</u>	<u>CCF5033K2FKR36</u>	<u>CCF5022K0JKR36</u>	<u>CCF5054R9FKR36</u>
<u>CCF5026R1FLR36</u>	<u>CCF5066K5FLR36</u>	<u>CCF5022R1FKR36</u>	<u>CCF5022R6FKR36</u>	<u>CCF509K53FKR36</u>