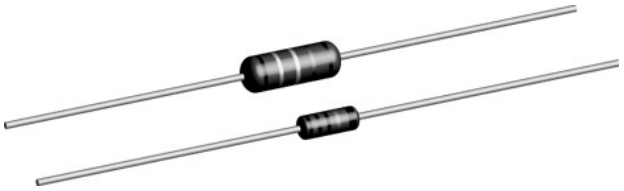
Metal Film Resistors, Industrial, ± 1 % Tolerance



FEATURES

- Power Ratings: 1/4, 1/2, 3/4 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)
- Lead (Pb)-free version is RoHS compliant

Pb-free Available

RoHS* COMPLIANT

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{70\ °C}$ W	LIMITING ELEMENT VOLTAGE MAX. V≅	TEMPERATURE COEFFICIENT ppm/°C	TOLERANCE %	RESISTANCE RANGE Ω	E-SERIES
CCF55	CCF-55	0.25/0.5	250	± 100	± 1	10R - 3.01M	96
CCF60	CCF-60	0.50/0.75/1.0	500	± 100	± 1	10R - 1M	96

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CCF55	CCF60
Rated Dissipation at 70 °C	W	0.25/0.5	0.5/0.75/1.0
Maximum Working Voltage	V≅	≤ 250	≤ 500
Insulation Voltage (1 min)	V_{eff}	500	500
Dielectric Strength	V_{AC}	450	450
Insulation Resistance	Ω	≥ 10^{11}	≥ 10^{11}
Operating Temperature Range	°C	- 65/+ 165	- 65/+ 165
Terminal Strength (pull test)	lb	2	2
Weight	g	0.35 max	0.75 max

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CCF55301RFKR36 (preferred part numbering format)

C	C	F	5	5	3	0	1	R	F	K	R	3	6			

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING	SPECIAL
CCF55 **CCF60**	**R** = Decimal **K** = Thousand **M** = Million **10R0** = 10 Ω **680K** = 680 kΩ **1M00** = 1.0 MΩ	**F** = ± 1 %	**K** = 100 ppm	**E36** = Lead (Pb)-free, CCF55 = T/R (5000 pieces) CCF60 = T/R (2500 pieces) **R36** = Tin/Lead, CCF55 = T/R (5000 pieces) CCF60 = T/R (2500 pieces)	Blank = Standard (Dash Number) (up to 3 digits) From **1 - 999** as applicable

Historical Part Number example: CCF-553010F (will continue to be accepted)

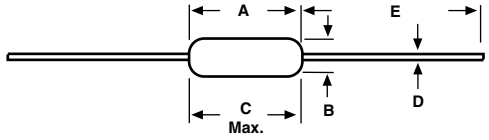
CCF-55	3010	F	R36
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING

* Pb containing terminations are not RoHS compliant, exemptions may apply

For technical questions about CCF55, contact: ff3dresistors@vishay.com
For technical questions about CCF60, contact: ff2aresistors@vishay.com

Document Number: 31015
Revision: 12-Oct-07

DIMENSIONS in inches [millimeters]

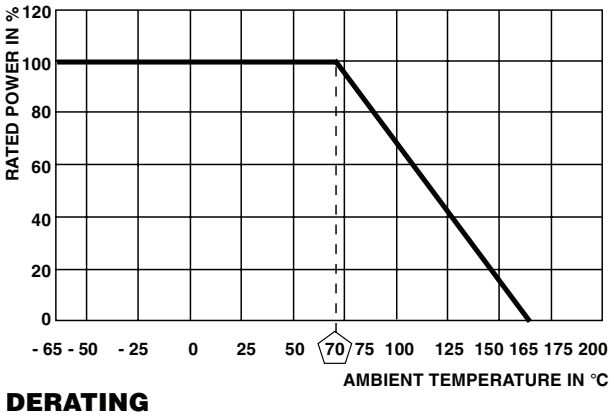


GLOBAL MODEL	A	B	C (Max.)	D	E
CCF55 (Sn/Pb)	0.245 ± 0.020 [6.22 ± 0.51]	0.090 ± 0.008 [2.29 ± 0.20]	0.265 [6.73]	0.025 ± 0.002 [0.64 ± 0.05]	1.100 ± 0.040 [27.94 ± 1.02]
CCF55 (Sn)	0.245 ± 0.020 [6.22 ± 0.51]	0.090 ± 0.008 [2.29 ± 0.20]	0.265 [6.73]	0.023 ± 0.002 [0.60 ± 0.05]	1.100 ± 0.040 [27.94 ± 1.02]
CCF60	0.344 ± 0.031 [8.74 ± 0.79]	0.139 ± 0.009 [3.53 ± 0.23]	0.400 [10.16]	0.025 ± 0.002 [0.64 ± 0.05]	1.000 ± 0.040 [25.40 ± 1.02]

RESISTANCE VALUES

Vishay Dale Models CCF55 and CCF60 are 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 kΩ, 30.1 kΩ or 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



DERATING

MARKING

- Color band

PERFORMANCE

POWER RATING at + 70 °C		
CCF55	1/4 W	1/2 W
CCF60	1/2 W	3/4 W and 1 W
TEST (1)	**MAXIMUM ΔR**	**MAXIMUM ΔR**
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/Bump	± 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-202G/IEC 60115/DIN EN140000 (as applicable).

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All product specifications and data are subject to change without notice.

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Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,
Промышленная ул, дом № 19, литера Н,
помещение 100-Н Офис 331