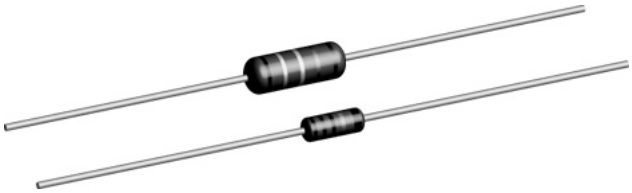
Metal Film Resistors, Industrial, ± 1% Tolerance



FEATURES

- Power Ratings: 1/4, 1/2, 3/4 and 1 watt at + 70°C
- ± 100ppm/°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 (52.4mm inside tape spacing per EIA-296-E)
- Lead (Pb)-Free version is RoHS Compliant

Pb-free Available

e3

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 (1min)	V_{eff}	500	500
Dielectric Strength	VAC	450	450
Insulation Resistance	Ω	$\geq 10^{11}$	$\geq 10^{11}$
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 ☐ ☐ ☐

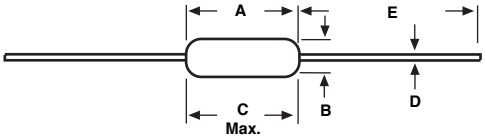
GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING	SPECIAL
CCF55 **CCF60**	**R** = Decimal **K** = Thousand **M** = Million **10R0** = 10Ω **680K** = 680KΩ **1M00** = 1.0MΩ	**F** = ± 1%	**K** = 100ppm	**E36** = Lead (Pb)-Free, T/R (5000 pcs) **R36** = Tin/Lead, T/R (5000 pcs)	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

DIMENSIONS in inches [millimeters]

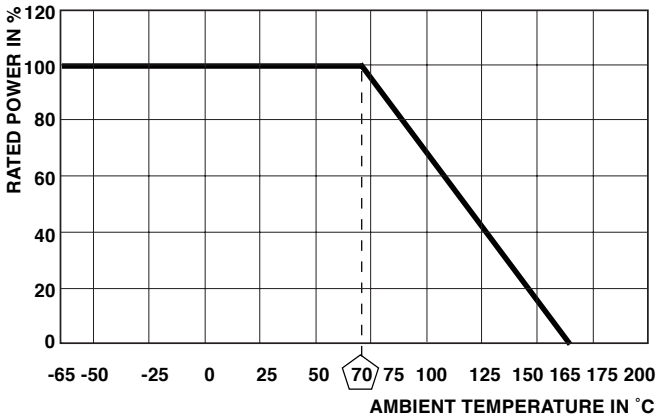


GLOBAL MODEL	A	B	C (Max.)	D	E
CCF55 (Sn/Pb)	0.245 ± 0.020 [6.22 ± 0.51]	0.090 ± 0.008 [2.29 ± 0.20]	0.265 [6.73]	0.025 ± 0.002 [0.64 ± 0.05]	1.100 ± 0.040 [27.94 ± 1.02]
CCF55 (Sn)	0.245 ± 0.020 [6.22 ± 0.51]	0.090 ± 0.008 [2.29 ± 0.20]	0.265 [6.73]	0.023 ± 0.002 [0.60 ± 0.05]	1.100 ± 0.040 [27.94 ± 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 ohm, 301 ohm, 3.01 kohm, 30.1 kohm or 301 kohm.

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 @ + 70°C		
CCF55	1/4 watt	1/2 watt
CCF60	1/2 watt	3/4 watt and 1 watt
TEST*	**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%	-

* Test Methods per MIL-STD-202G/IEC 60115/DIN EN 140000 (as applicable).