

# Metal Film Resistors, Industrial, $\pm 1\%$ Tolerance



## FEATURES

- Dual power rating:  
 $P_{70} = 0.25\text{ W}$  with 0.5 % stability  
 $P_{70} = 0.50\text{ W}$  with 1.0 % stability
- Temperature coefficient:  $\pm 100\text{ ppm/K}$
- Superior electrical performance
- Flame retardant epoxy conformal coating (red brown color)
- 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 solder contacts
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## STANDARD ELECTRICAL SPECIFICATIONS

PRODUCT	POWER RATING $P_{70}$ W	LIMITING ELEMENT VOLTAGE MAX. $V_{\text{E}}$	TEMPERATURE COEFFICIENT $\pm\text{ ppm/K}$	TOLERANCE $\pm\%$	RESISTANCE RANGE $\Omega$	E-SERIES
CCF55	0.25	250	100	1	10 to 3.01M	E96
CCF55	0.5	250	100	1	10 to 3.01M	E96

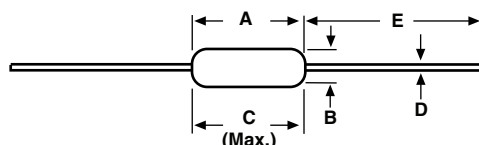
## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CCF55
Rated Dissipation, $P_{70}$	W	0.25/0.5
Maximum Working Voltage, $U_{\text{max}}$	V $\text{E}$	$\leq 250$
Insulation Voltage (1 min)	V $\text{eff}$	500
Dielectric Strength	V $\text{AC}$	450
Insulation Resistance	$\Omega$	$\geq 10^{11}$
Operating Temperature Range	$^{\circ}\text{C}$	-65 to +165
Terminal Strength (pull test)	lb	2
Weight	g	0.35 max.

## PART NUMBER AND PRODUCT DESCRIPTION

**PART NUMBER: CCF55301RFK E36**

C	C	F	5	5	3	0	1	R	F	K	E	3	6			
PRODUCT	RESISTANCE VALUE		TOLERANCE CODE		TEMPERATURE COEFFICIENT		PACKAGING				SPECIAL					
CCF55	R = Decimal K = Thousand M = Million 10R0 = 10 Ω 680K = 680 kΩ 1M00 = 1.0 MΩ		F = ± 1 %		K = 100 ppm/K		E36 = Lead (Pb)-free CCF55 = T/R (5000 pieces)				Blank = Standard (dash number) (up to 3 digits) From 1 to 999 as applicable					

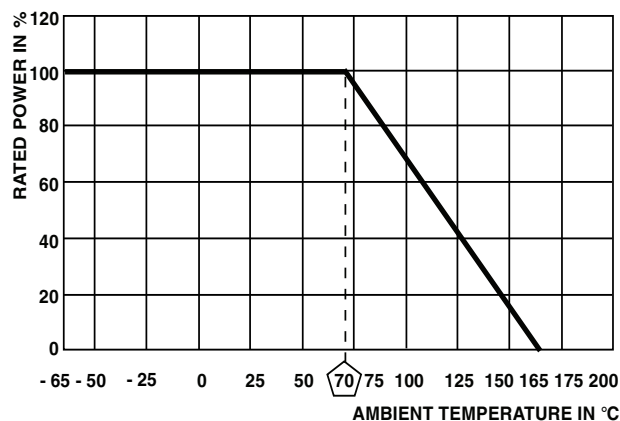
**DIMENSIONS** in inches (millimeters)


PRODUCT	A	B	C (Max.)	D	E
CCF55	$0.245 \pm 0.020$ (6.22 ± 0.51)	$0.090 \pm 0.008$ (2.29 ± 0.20)	0.295 (7.5)	$0.022 \pm 0.002$ (0.58 ± 0.05)	$1.100 \pm 0.040$ (27.94 ± 1.02)

**RESISTANCE VALUES**

Vishay CCF55 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 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**

The nominal resistance and tolerance are marked on the resistor using five colored bands in accordance with IEC 60062, marking codes for resistors and capacitors.

**PERFORMANCE**

RATED DISSIPATION, $P_{70}$		
CCF55	1/4 W	1/2 W
TEST <sup>(1)</sup>	MAXIMUM $\Delta R$	MAXIMUM $\Delta R$
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**

<sup>(1)</sup> Test specifications as per IEC 60115-1



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