

Carbon Film Fixed Resistors (RoHS Compliant) **CF-RC Series**

FEATURES

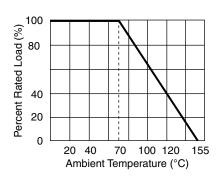
- Temperature Range -55°C ~ +155°C
- ±5% tolerance
- · High quality performance at economical prices
- · Compatible with automatic insertion equipment
- · Flame retardant type available
- · Tin coated annealed copper wire
- Values below 1Ω or above $10M\Omega$ are available by special request, please ask for details



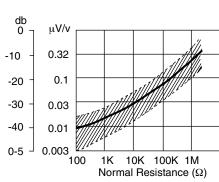




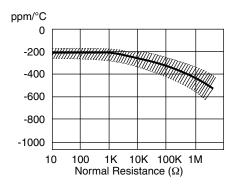
■ DERATING CURVE



■ CURRENT NOISE



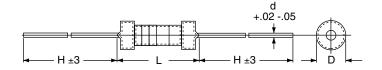
■ TEMPERATURE COEFFICIENT



■ PART NUMBERING SYSTEM



■ SERIES, WATTAGE, SIZE, VOLTAGE, DIMENSIONS, AND AVAILABLE PACKAGING



Code:	Package:						
	Bulk						
/REEL	Tape and Reel						
/AP	Ammo Pack						

Series	Watts	Size	Voltage	(max.)		Dimension	ons (mm)	Standard Quantities Available			
Series	vvalls	Size	W.V.	O.V.	L max.	D max.	Н	d	Bulk	Tape and Reel	Ammo Pack
294	1W	Small	500	1,000	12	5.0	28	0.7	1,000	3,000	1,000
299	1/8W	Standard	200	400	3.5	1.85	28	0.45	1,000	5,000	2,000
291	1/4W	Standard	250	500	6.8	2.5	28	0.54	1,000	5,000	1,000
293	1/2W	Standard	350	700	10	3.5	28	0.54	1,000	3,000	1,000

\blacksquare STANDARD VALUES (Ω)

0.5	2.0	4.3	9.1	20	43	91	200	430	910	2K	3.9K	8.2K	18K	39K	82K	180K	390K	820K	1.8M	3.9M	8.2M
1.0	2.2	4.7	10	22	47	100	220	470	1K	2.2K	4.3K	9.1K	20K	43K	91K	200K	430K	910K	2M	4.3M	9.1M
1.1	2.4	5.1	11	24	51	110	240	510	1.1K	2.4K	4.7K	10K	22K	47K	100K	220K	470K	1M	2.2M	4.7M	10M
1.2	2.7	5.6	12	27	56	120	270	560	1.2K	2.7K	5.1K	11K	24 K	51K	110K	240K	510K	1.1M	2.4M	5.1M	15M
1.3	3.0	6.2	13	30	62	130	300	620	1.3K	3K	5.6K	12K	27K	56K	120K	270K	560K	1.2M	2.7M	5.6M	22M
1.5	3.3	6.8	15	33	68	150	330	680	1.5K	3.2K	6.2K	13K	30K	62K	130K	300K	620K	1.3M	ЗМ	6.2M	
1.6	3.6	7.5	16	36	75	160	360	750	1.6K	3.3K	6.8K	15K	33K	68K	150K	330K	680K	1.5M	3.3M	6.8M	
1.8	3.9	8.2	18	39	82	180	390	820	1.8K	3.6K	7.5K	16K	36K	75K	160K	360K	750K	1.6M	3.6M	7.5M	

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XC-600035 Date Revised: 6/9/09

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CHARACTERISTICS

Characteristics	I	Limits		Test Methods (JIS C 5201-1)						
DC. Resistance	Must be within the tolerance.	e specified		5.1 The limit of error of measuring apparatus shall not exceed allowable range or 5% of resistance tolerance						
Temperature coefficient	Resist. Range < 10 Ω 11Ω ~ 99K 100K ~ 1M 1.1M ~ 10M	T.C.R. 0 ~ ±5 0 ~ -4 0 ~ -7 0 ~ -1	50 00	5.2 Natural resistance change per temp. degree centigrade. R2-R1 x106 (PPM/°C) R1(t2-t1) R1: Resistance value at room temperature (t1) R2: Resistance value at room temp.plus 100°C (t2)						
Short time overload	Resistance chang ± (1 % + 0.05Ω) N evidence of mech	Max. with no)	5.5 Permanent resistance change after the application of a potential of 2.5 times RCWV for 5 seconds.						
Insulation Resistance	Insulation resistar 10,000 MΩ Min	nce is		5.6 Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at DC potential respectively specified in the above list for 60 +10/ -0 seconds.						
Dielectric withstanding voltage	No evidence of fla mechanical dama insulation break d	ge,arcing or		5.7 Resistors shall be clamped in the trough of a 90° metallic V-block and shall be tested at AC potential respectively specified in the table 1 for 60 + 10/-0 seconds.						
Terminal strength	No evidence of m damage.	echanical		6.1 Direct load Resistance to a 2.5 kgs direct load for 10 secs. in the direction of the longitudinal axis of the terminal leads. Twist test: Terminal leads shall be bent through 90° at a point of about 6mm from the body of the resistor and shall be rotated through 360 about the original axis of the bent terminal in alternating direction for a total of 3 rotations.						
Resistance to soldering heat	Resistance chang $\pm (1\% + 0.05\Omega) \text{ N}$ evidence of mech	lax. with no).	6.4 Permanent resistance change when leads immersed to 3.2 to 4.8 mm from the body in 350 $^{\circ}$ C \pm 10 $^{\circ}$ C solder for 3 \pm 0.5 seconds						
Solderability	95 % coverage M	in.		6.5 The area covered with a new , smooth clean , shiny and continuous surface free from concentrated pinholes. Test temp. of solder : 245°C ± 3°C Dwell time in solder : 2 ~ 3 seconds						
Temperature cycling	Resistance chang ± (1% + 0.05Ω) M evidence of mech	lax. with no).	7.4 Resistance char 5 cycles for duty sho Step 1 2 3	Time 30 mins 10~15 mins 30 mins					
		. 1		4 Room temp. 10~15 mins						
Load life in humidity		ralue than 100ΚΩ -100ΚΩ	ΔR/R ± 3 % ± 5 %	7.9 Resistance change after 1,000 hours operating at RCWV with duty cycle of (1.5 hours "on", 0.5 hour "off") in a humidity test chamber controlled at 40°C ± 2°C and 90 to 95 % relative humidity						
	Resistance va	alue	ΔR/R	7.10 Permanent res	istance change after					
Load life		< than 56KΩ - 56KΩ	± 2 % ± 3 %	1,000 hours operating at RCWV with duty cycle of (1.5 hours "on", 0.5 hour "off") at 70°C ± 2°C ambient						

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XC-600035 Date Revised: 9/28/05