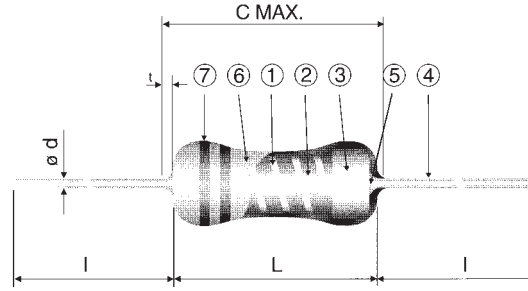
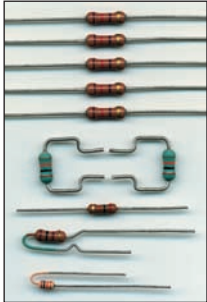


**CARBON FILM  
STANDARD  
CF • CFP**



**STRUCTURE**

- 1 Ceramic core
- 2 Trimmed carbon film
- 3 Steel cap (Cu, Sn plated)
- 4 Lead wire
- 5 Welding joint
- 6 Epoxy resin overcoating
- 7 Marking



**IDENTIFICATION**

PRODUCT CODE	COATING COLOR	MARKING
CFS 1/4	Ivory	Color Code
CF 1/4, CFB 1/2	Venetian Red	(R-value and tolerance)
CFS 1/2		
CFP series	Green	

All these products have Pb-free terminations and meet EU-RoHS and China-RoHS requirements

**TYPE DESIGNATION (HOW TO ORDER)**

CF	1/4	C	T52	A	103	J	Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS
PRODUCT CODE CF, CFP	POWER RATING S1/4: 0.25W 1/4: 0.25W B1/2: 0.5W S1/2: 0.5W	TERMINATION SURFACE MATERIAL C: SnCu	TAPING & FORMING	PACKAGING A: Ammo R: Reel <small>*Please see "PACKAGING"</small>	NOMINAL RESISTANCE 3 digits	RESISTANCE TOLERANCE G: (±2%) J: (±5%)	

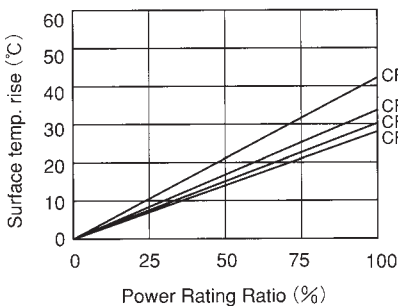
**FEATURES**

- General purpose lead-type resistor
- Automatic insertion is applicable
- Various types of forming are available
- Stronger in pulse resistance than chip resistors of the same power
- CFP = Flame retardant coating (Equivalent to UL94 V-0)
- CF (P) S = Reduced size
- Meets or exceeds IEC 60115-2, JIS C 5201-2
- Rated ambient temperature: +70°C
- Operating temperature range: -55°C ... +155°C

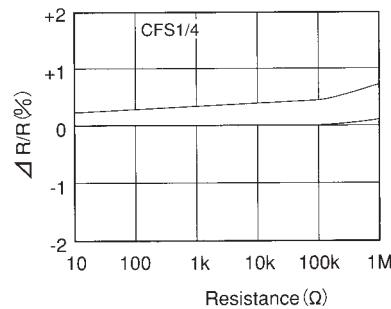
**DIMENSIONS (mm)**

TYPE	L	C Max.	D	d (nom.)	I
CF (P) S 1/4	3.2 ± 0.2	3.4	1.7 <sup>+0.2</sup> / <sub>-0.1</sub>	0.45	20 Min.
CF 1/4	6.1 ± 0.5				
CFP 1/4	6.3 ± 0.5	7.1	2.3 ± 0.3	0.6	
CF (P) B 1/2	9.0 ± 1.0	11.0	3.5 ± 0.5	0.7	
CF (P) S 1/2	6.3 ± 0.5	7.1	2.85 ± 0.3	0.6	

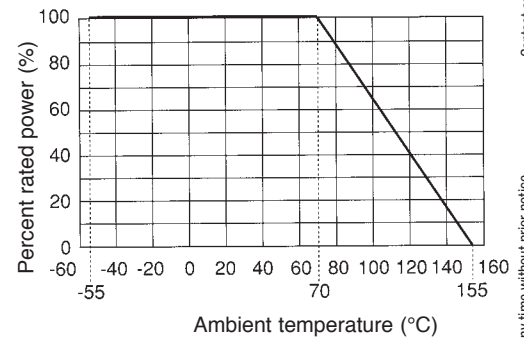
**SURFACE TEMPERATURE RISE**



**LOAD LIFE AT +70°C/1000h**



**DERATING CURVE**



**RATING**

DIN SIZE	TYPE	POWER RATING*	T.C.R. (ppm/K)				MAX. WORKING VOLTAGE	MAX. OVERLOAD VOLTAGE	DIELECTRIC WITH-STANDING VOLTAGE	RESISTANCE RANGE	
			+350... -450	0... -700	0... -1000	0... -1300				E24	
										G (±2%)	J (±5%)
0204	CFS 1/4 C	0.25 W	2.2Ω...47kΩ	51kΩ...100kΩ	110kΩ...330kΩ	360kΩ...1MΩ	250 V	500 V	300 V	10Ω...330kΩ	2.2Ω...1MΩ
0207	CF 1/4 C	0.25 W	2.2Ω...100kΩ	110kΩ...330kΩ	360kΩ...1MΩ	1.1MΩ...5.1MΩ	300 V	600 V	500 V		
0411	CFB 1/2 C	0.5 W	2.2Ω...100kΩ	110kΩ...1MΩ	1.1MΩ...2.2MΩ	2.4MΩ...5.1MΩ	400 V	800 V	700 V	10Ω...1MΩ	2.2Ω...5.1MΩ
0307	CFS 1/2 C	0.5 W	2.2Ω...91kΩ	100kΩ...1MΩ	1.1MΩ...2.2MΩ	2.4MΩ...5.1MΩ	350 V	700 V			
0204	CFPS 1/4 C	0.25 W	2.2Ω...47kΩ	51kΩ...100kΩ	110kΩ...330kΩ	360kΩ...1MΩ	250 V	500 V	300 V	10Ω...100kΩ	
0207	CFP 1/4 C	0.25 W	2.2Ω...100kΩ	110kΩ...330kΩ	360kΩ...1MΩ	-	300 V	600 V	500 V		2.2Ω...1MΩ
0411	CFPB 1/2 C	0.5 W	2.2Ω...100kΩ	110kΩ...1MΩ	-	-	400 V	800 V	700 V	10Ω...1MΩ	
0307	CFPS 1/2 C	0.5 W	2.2Ω...91kΩ	100kΩ...1MΩ	-	-	350 V	700 V			

\*For resistors operated in ambient temperature over +70°C, power rating shall be derated like shown in above "DERATING CURVE".

Rated voltage = √ Power rating x resistance value or max. working voltage, whichever is lower.

Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment. Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order/use.