

# Carbon Film Resistors (R · F)

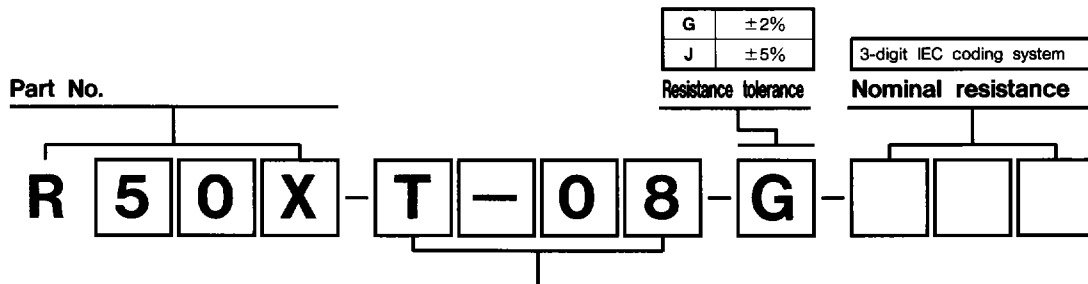
(JIS Standard : JIS C 6408)

From the preparation of component materials to final production, all stages are conducted in-house with highly advanced manufacturing technology to assure stable quality.

Part No.	Power rating (70°C)	Maximum working voltage (V)	Resistance tolerance	Resistance range	Operating ambient temperature (°C)
R20	1/5W (0.20W) or 1/4W (0.25W)	250	J (±5%)	0.47 Ω ~ 2.2MΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 270 kΩ	
R25X	1/3W (0.33W)	300	J (±5%)	0.47 Ω ~ 3.3MΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 3.3MΩ	
R50X	1/2W (0.50W)	350	J (±5%)	0.47 Ω ~ 5.1MΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 5.1MΩ	
R75X	3/4W (0.75W)	350	J (±5%)	0.47 Ω ~ 5.1MΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 5.1MΩ	
F20 (Non-flammable)	1/4W (0.25W)	250	J (±5%)	0.47 Ω ~ 100 kΩ	-55 ~ +155
F25X (Non-flammable)	1/3W (0.33W)	300	J (±5%)	0.47 Ω ~ 1.5MΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 100 kΩ	
F50X (Non-flammable)	1/2W (0.50W)	350	J (±5%)	0.47 Ω ~ 100 kΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 100 kΩ	
F75X (Non-flammable)	3/4W (0.75W)	350	J (±5%)	0.47 Ω ~ 56 kΩ	-55 ~ +155
			G (±2%)	10 Ω ~ 56 kΩ	

- Notes : 1. Besides the resistors listed in the above table, 0 Ω resistors (50mΩ or less) are available in the R20 and R25X series.  
 2. Resistors less than 10 Ω are metal film.  
 3. General products are fire retardant. (Conform to UL94V-0).  
 4. High resistance resistors must be used under well designed operating conditions (load factor, voltage).  
 5. R75X : old R50A.

## ● Product Designation



## Packaging and forming specifications

Part No.	Resistance range	Forming	Packaging	Quantity			
T-08	R50X/75X, F50X/75X	Taping	Axial	1,000			
T-29	R20/25X, F20/25X			52mm wide	Ammo Box	2,000	
T04P	R20			26mm wide	Ammo Box	5,000	
T-24	R20/25X/50X, F20/25X/50X					2,000	
T-23	R20					5,000	
T-22	R20			6,000			
T42V	R20		Radial	5mm pitch parallel	Ammo Box	2,000	
T41X	R20				Reel	2,500	
T34V	R25X			5mm pitch lengthwise	Ammo Box	2,000	
T31X	R25X				Reel	2,500	
T36V	R20			2.5mm pitch lengthwise	Ammo Box	2,000	
T35X	R20				Reel	2,500	
R-02	R20/25X/50X/75X, F20/25X/50X/75X		Bulk	Straight		Polyethylene bag	1,000
FC02	R20, F20			Lead forming	FOR (pitch parallel)	5mm pitch	Polyethylene bag
FC06	R25X, F25X	10mm pitch				Polyethylene bag	1,000
FC16	R50X, F50X	12.5mm pitch				Polyethylene bag	1,000
FC10	R75X, F75X	ELR (pitch lengthwise)				Polyethylene bag	1,000
EL R	R20/50X			Polyethylene bag	1,000		
EL03	R25X			Polyethylene bag	1,000		

● Dimensions list

(Unit : mm)

<p><b>R20</b></p>	<p><b>R25X</b></p>
<p><b>R50X</b></p>	<p><b>R75X</b></p>
<p><b>F20</b></p>	<p><b>F25X</b></p>
<p><b>F50X</b></p>	<p><b>F75X</b></p>

# Carbon Film Resistors (R · F)

## ●Packaging

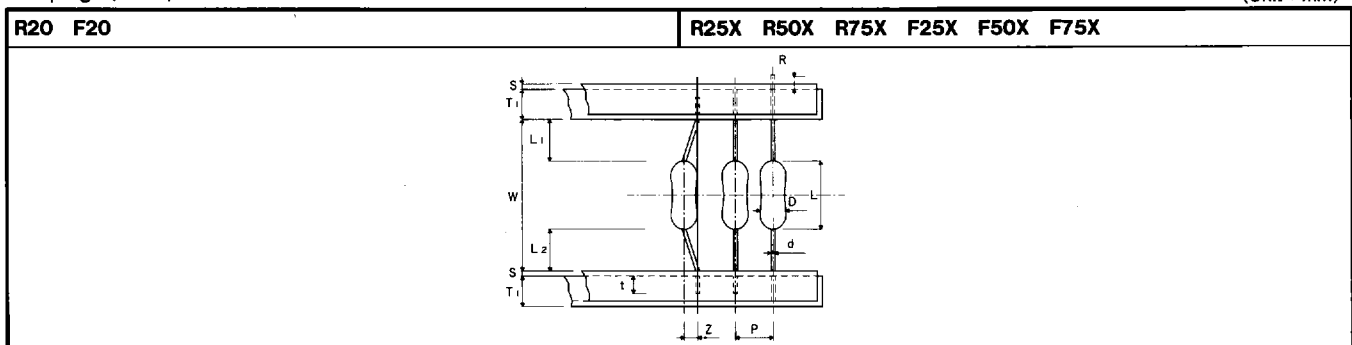
Part No.	Packaging type		Code	Packaging style	Quantity (pcs)	Standard product · Semi-standard product	
						J (±5%)	G (±2%)
R20	Bulk	52mm wide	R-02 · FC02 · ELR	Polyethylene bag	1,000	◎	○
			T-29	Ammo Box	2,000	◎	○
			T04P		5,000	◎	○
	Axial	26mm wide	T-24	Ammo Box	2,000	◎	○
			T-23		5,000	○	○
			T-22		6,000	◎	○
	Radial	5mm pitch parallel	T42V	Ammo Box	2,000	◎	○
			T41X	Reel	2,500	○	○
		2.5mm pitch lengthwise	T36V	Ammo Box	2,000	○	○
			T35X	Reel	2,500	○	○
R25X	Bulk	52mm wide	R-02 · FC06 · EL03	Polyethylene bag	1,000	◎	○
			T-29	Ammo Box	2,000	◎	○
	Axial	26mm wide	T-24		2,000	◎	○
			Radial	5mm pitch lengthwise	T34V	Ammo Box	2,000
	T31X	Reel			2,500	○	○
	R50X	Bulk	52mm wide	R-02 · FC16 · ELR	Polyethylene bag	1,000	◎
T-08				Ammo Box	1,000	◎	○
Axial		26mm wide	T-24		2,000	◎	○
			Radial	5mm pitch lengthwise	T34V	Ammo Box	2,000
T31X		Reel			2,500	○	○
R75X	Bulk	52mm wide	R-02 · FC10	Polyethylene bag	1,000	◎	○
			T-08	Ammo Box	1,000	○	○
F20	Bulk	52mm wide	R-02	Polyethylene bag	1,000	○	○
			T-29	Ammo Box	2,000	○	○
	Axial	26mm wide	T-24		2,000	○	○
F25X			Bulk	52mm wide	R-02	Polyethylene bag	1,000
	T-29	Ammo Box			2,000	○	○
	Axial		26mm wide	T-24	2,000	○	○
F50X		Bulk		52mm wide	R-02	Polyethylene bag	1,000
	T-08		Ammo Box		1,000	○	○
	Axial	26mm wide		T-24	2,000	△	△
F75X			Bulk	52mm wide	R-02	Polyethylene bag	1,000
	T-08	Ammo Box			1,000	○	○

◎ : Standard product ○ : Semi-standard product △ : Special specification

## ●Packaging Specifications

### ●Taping (Axial)

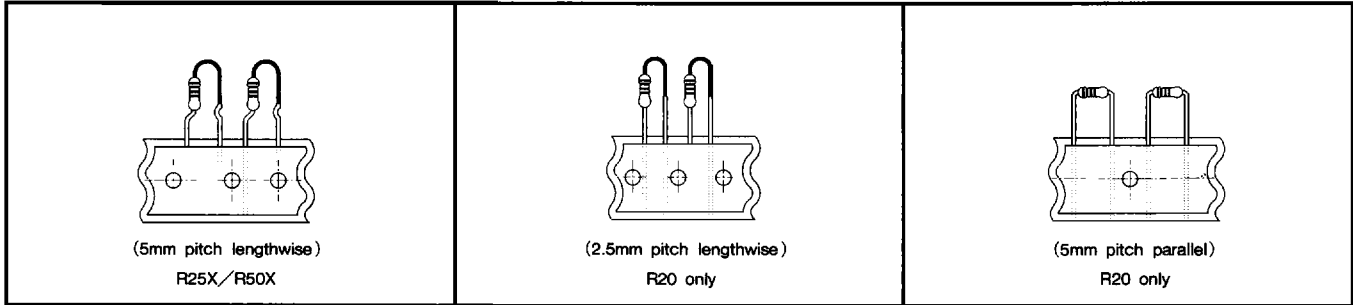
(Unit : mm)



R20 F20		26mm	52mm
L	Length	See page 351	
D	Outer diameter	See page 351	
d	Lead wire diameter	See page 351	
L <sub>2</sub> - L <sub>1</sub>	Off-center	0.2Max.	0.5Max.
P	Pitch	5.0 ± 0.3	5.08 ± 0.38
R	Lead wire projection	0	
S	Tape shift	0.1Min.	
T <sub>1</sub>	Base tape width	6.0 ± 0.5	
W	Inner tape width	26.0 <sup>+0.2</sup> <sub>-0</sub>	52.0 ± 1.0
t	Lead wire connection length	4.0Min.	
Z	Lead wire curvature	1.0Max.	

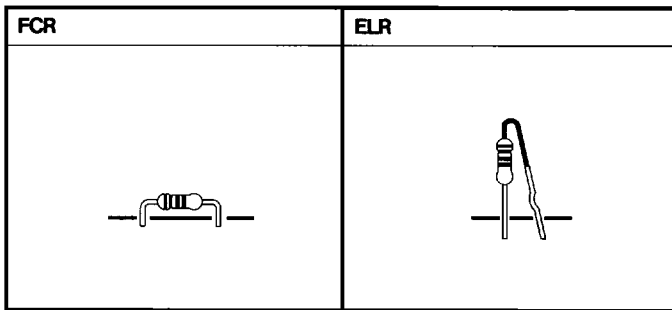
R25X R50X R75X F25X F50X F75X		26mm	52mm
L	Length	See page 351	
D	Outer diameter	See page 351	
d	Lead wire diameter	See page 351	
L <sub>2</sub> - L <sub>1</sub>	Off-center	1.0Max.	
P	Pitch	5.0 ± 0.3	5.08 ± 0.38
R	Lead wire projection	0	
S	Tape shift	0.1Min.	
T <sub>1</sub>	Tape width	6.0 ± 0.5	
W	Inner tape width	26.5 <sup>+1.0</sup> <sub>-0.5</sub>	52.4 <sup>+1.6</sup> <sub>-1.4</sub>
t	Lead wire connection length	4.0Min.	
Z	Lead wire curvature	1.0Max.	

●Taping (Radial)



Taping		Part No.	R20	R25X	R50X	R75X	F20	F25X	F50X	F75X
Axial	52mm wide		○	○	○	○	○	○	○	○
	26mm wide		○	○	○	—	○	○	○	—
Radial	For Avisert		○	○	○	—	—	—	—	—
	For Panaset		○	○	○	—	—	—	—	—

●Bulk (Forming)



Forming		Part No.	R20	R25X	R50X	R75X	F20	F25X	F50X	F75X
FCR	5mm pitch	FC02	—	—	—	—	FC02	—	—	—
	10mm pitch	—	FC06	FC16	—	—	—	FC06	FC16	—
	12.5mm pitch	—	—	—	FC10	—	—	—	—	FC10
ELR			ELR	EL03	ELR	—	—	—	—	—