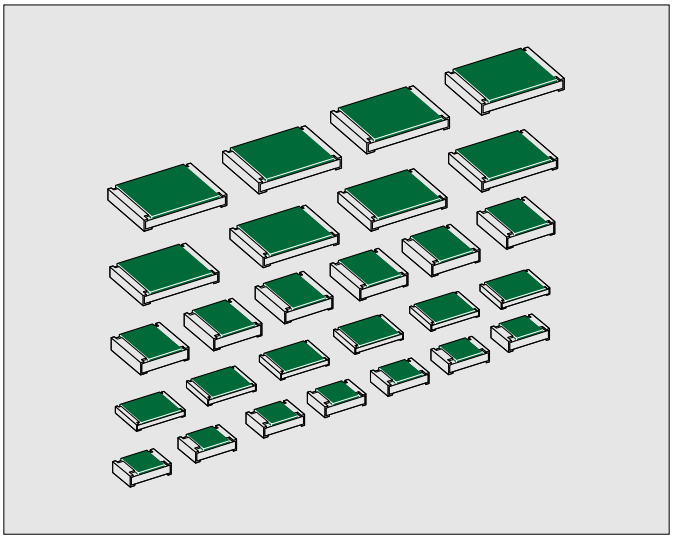
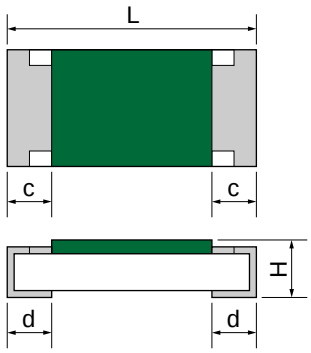
FCR1/10, 1/8, 1/4, 1/2, 1

●Features

1. The FCR Series resistor is a trimmable device developed for use in place of a variable resistor.
2. Size available 0805, 1206, 1210, 2010 and 2512.
3. Packaging-taped for high speed insertion.
4. Resistance and coating film have been specified to permit YAG Laser Trimming.
5. Stability class : 5%



●Dimensions



Unit : mm

Style	Metric	Inch	L	W	H	c	d	*Unit weight/pc.
FCR1/10	2012	0805	2.0±0.1	1.25±0.10	0.55±0.10	0.4±0.2	0.4±0.2	5mg
FCR1/8	3216	1206	3.2±0.15	1.6 ±0.15	0.55±0.10	0.5±0.25	0.5±0.25	9mg
FCR1/4	3225	1210	3.2±0.15	2.5 ±0.15	0.55±0.15	0.5±0.25	0.5±0.25	16mg
FCR1/2	5025	2010	5.0±0.15	2.5 ±0.15	0.55±0.15	0.6±0.2	0.6±0.2	25mg
FCR1	6332	2512	6.3±0.15	3.2 ±0.15	0.55±0.15	0.6±0.2	0.6±0.2	40mg

*Values for reference

●Product Classification

Example

FCR	1/4	471	L	TE
①Product Type	②Rated Dissipation & Size	③Rated Resistance	④ Tolerance on Rated Resistance	⑤Packaging

Style

①Product Type

②Rated Dissipation & Size			
Code	Rated Dissipation	Size	
		Metric	Inch
1/10	0.1W	2012	0805
1/8	0.125W	3216	1206
1/4	0.25W	3225	1210
1/2	0.50W	5025	2010
1	1.0W	6332	2512

③Rated Resistance
E24 Series e.g : 471=470 ohm

④Tolerance on Rated Resistance	
Code	Tolerance on Rated Resistance
–	$^{0}_{-30}$ %
L	±15%

*⑤Packaging		
Code	Packaging	Application
B	Bulk(Loose Package)	All Styles
TP	Paper Tape.	FCR1/10,FCR1/8
TE	Embossed Tape.	FCR1/4, FCR1/2, FCR1

*Refer to Taping and Packaging information in page 34.35

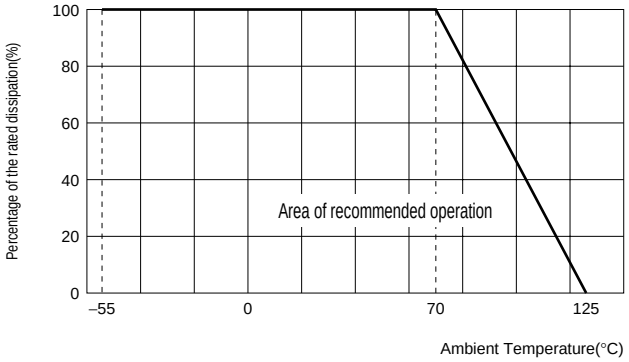
●Ratings

Style	Rated Dissipation at 70°C W	Limiting Element Voltage V	Combinations of Rated Resistance Range and Temperature Coefficient of Resistance		Tolerance on Rated Resistance	Preferred Number Series for Resistors	Isolation Voltage V	Category Temperature Range °c
			Rated Resistance Range	Temperature Coefficient of Resistance 10^{-6}/°C				
FCR1/10	0.1	150	+500~–200	1ohm~9.1ohm	±15% or 0~–30%	E24 Series	500	–55~+125
FCR1/8	0.125	200						
FCR1/4	0.25							
FCR1/2	0.5		±200	10ohm~4.7Mohm				
FCR1	1.0							

Note.1 Rated Voltage = $\sqrt{(\text{Rated Power})\times(\text{Rated Resistance})}$.(d.c. or a.c. r.m.s. Voltage)
Note.2 Limiting Element Voltage can only be applied to resistors when the resistance value is equal to or higher than the critical resistance value.
Note.3 T.C.R. ±100ppm/°C (10ohm~1Mohm) is available on your request.
Note.4 The indicated values of Rated Dissipation are in the case without trimming.

●Derating Curve

The derated values of dissipation at temperature in excess of 70°C shall be as indicated by the following Curve.



●Climatic Category

55/125/56

Lower Category Temperature	–55°C
Upper Category Temperature	+125°C
Duration of the Damp heat, Steady-State Test	56days

●Performance Characteristics JIS C 5201-1 : 1998

Description	Requirements	Test Methods
Voltage proof	No breakdown or flashover R≥1G ohm	Clause 4.7 500Va.c.,60s
Variation of resistance with temperature	See Ratings Table	Clause 4.8 Measuring temperature : +20°C/–55°C/ +20°C/+125°C/+20°C
Overload	ΔR≤±(1%+0.05ohm) No visible damage, legible marking	Clause 4.13 The applied voltage shall be 2.5 times of the rated voltage or twice of the limiting Element voltage, whichever is of the less severe, 2s.
Solderability	In accordance with Clause 4.17.4.5	Clause 4.17 235°C, 2s
Resistance to soldering heat	ΔR≤±(1%+0.05ohm)	Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out in solder bath at 260°C for 5s.
Rapid change of temperature	ΔR≤±(1%+0.05ohm) No visible damage	Clause 4.19 5 cycles between –55°C and +125°C.
Climatic sequence	ΔR≤±(5%+0.1ohm) No visible damage	Clause 4.23 Dry/Damp heat(12+12h cycle), first cycle/ Cold/Damp heat(12+12h cycle), remaining Cycle./ D.C.Load.
Damp test, steady state	ΔR≤±(5%+0.1ohm) No visible damage, legible marking	Clause 4.24 40°C 95%R.H. 56 days, test a) and b) of Clause 4.24.2.1
Endurance at 70°C	ΔR≤±(5%+0.1ohm) No visible damage	Clause 4.25.1 Rated voltage, 1.5h"ON", 0.5h"OFF", 70°C, 1000h.
Endurance at the upper category temperature	ΔR≤±(5%+0.1ohm) No visible damage	Clause 4.25.3 125°C, no-load, 1000h.
Adhesion	No visible damage	Clause 4.32 5N, 10s
Bend strength of the face plating	ΔR≤±(1%+0.05ohm)	Clause 4.33 Amount of bend : FCR1/10, 1/8, 1/4 : 3mm FCR1/2, 1 : 1mm

Note.5 The indicated values of Characteristics are in the case without trimming.