SMD CHIP RESISTOR

How To Order:

Series: RC Part No.:

RC	0603	J	2K3	B	10
Series: Chip Resistor	**Size:** 0201 0402 0603 0805 1206 1210 1218 1812 2512	**Tolerance:** B=0.1% D=0.5% F=1% G=2% J=5%	**Resistance:** 1R=1 ohm 2.3R=2R3 1K=1000 ohm 2.3K=2K3 1M=1000000 ohm 2.3M=2M3	**Size of Reel** B=13” C=10”	**Pcs/reel** 10=10k/reel 15=15k/reel 20=20k/reel

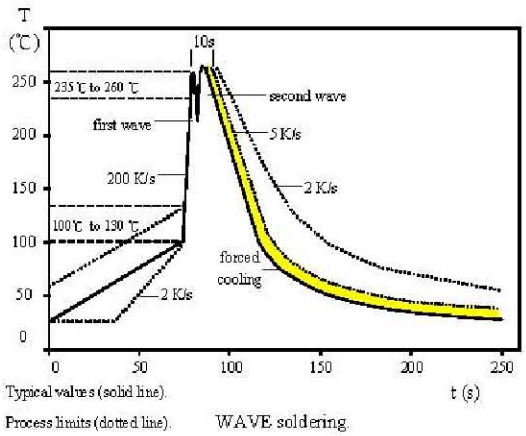
FEATURES

1. Small size and light weight.
2. Highly stable in auto-placement surface mounting application.
3. Suitable for lead free soldering.
4. Compatible with flow and reflow soldering.

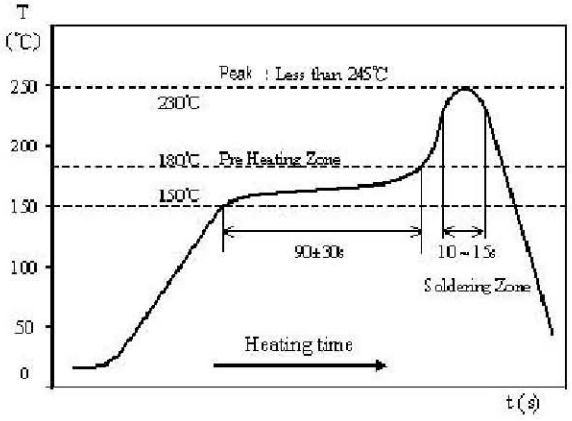
APPLICATIONS

- Consumer electronics
- Measurement instrument
- Automotive industry
- Electronic watch and camera
- Computer

SOLDERING TEMPERATURE CURVE



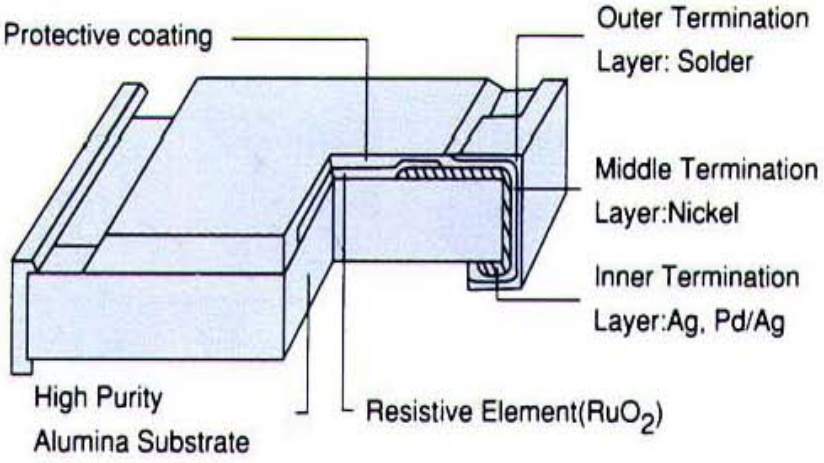
Typical values (solid line).
Process limits (dotted line). WAVE soldering



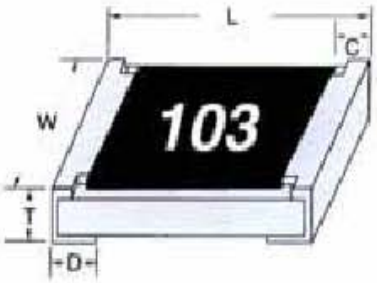
IR Reflow Soldering

SMD THICK FILM CHIP RESISTORS

CONFIGURATION

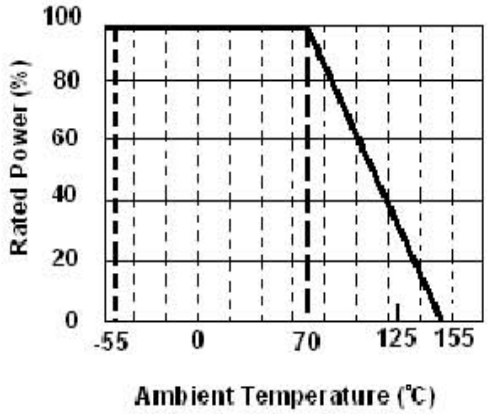


DIMENSIONS

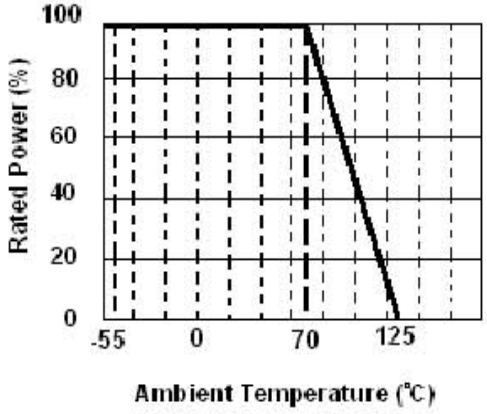


Size	L	W	C	D	T
0201	0.60±0.03	0.30±0.03	0.12±0.05	0.15±0.05	0.23±0.03
0402	1.00±0.05	0.50±0.05	0.20±0.10	0.25±0.10	0.3±0.05
0603	1.60±0.10	0.80±0.10	0.30±0.10	0.30±0.15	0.45±0.15
0805	2.00±0.10	1.25±0.10	0.35±0.20	0.35±0.20	0.50±0.15
1206	3.05±0.10	1.55±0.10	0.45±0.20	0.55±0.10	0.35±0.15
1210	3.05±0.10	2.55±0.10	0.50±0.20	0.50±0.20	0.55±0.10
1812	4.50±0.10	3.00±0.10	0.55±0.05	0.80±0.10	0.55±0.05
2010	5.00±0.20	2.50±0.20	0.60±0.25	0.60±0.25	0.55±0.10
1218	3.10±0.10	4.60±0.10	0.45±0.10	0.40±0.10	0.55±0.05
2512	6.30±0.20	3.20±0.20	0.60±0.25	0.60±0.25	0.55±0.10

POWER DERATING CURVE



Maximum dissipation in percentage of rated power as a function of the ambient temperature for all sizes except 0201



Maximum dissipation in percentage of rated power as a function of the ambient temperature for 0201

SMD THICK FILM CHIP RESISTORS

RATING

Size	Power Rating at 70°C	Max. RCWV	Max Overload Voltage	Resistance Tolerance (%)	TCR (PPM/°C)	Resistance Range (Ω)		Standard Resistance Values
						Min.	Max.	
0201	1/20W	25V	50V	±1% (F)	±300	10Ω	1MΩ	E-24
				±5% (J)		0Ω&1Ω	1MΩ	
0402	1/16W	50V	100V	±0.1% (B)	±200	10Ω	1MΩ	E-96
				±1% (F)		10Ω	1MΩ	E-96
				±5% (J)		0Ω&1Ω	10MΩ	E-24
0603	1/10W	50V	100V	±0.1% (B)	±50	20Ω	510K	E-96
				±0.25% (C)	±50	20Ω	510KΩ	E-96
0805	1/8W	150V	300V	±0.5% (D)	±50	20Ω	510KΩ	E-96
				±1% (F)	±50	20Ω	510KΩ	E-96
1206	1/4W	200V	400V	±1% (F)	±100	10Ω	1MΩ	E-96
				±2% (G)	±200	1Ω	20MΩ	E-24
				±5% (J)	±200	0Ω&1Ω	10MΩ	E-24
1812	1/2W	200V	400V	±2% (G)	±200	10Ω	10MΩ	E-24
				±5% (J)				
				±1% (F)	±100	10Ω	10MΩ	E-24
1218	1W			±0.1% (B)		10Ω	1MΩ	E-96
				±0.5% (D				
2010	1/2W	200V	400V	±1% (F)	±100	1Ω	10MΩ	E-96
				±5% (J)	±200	0Ω&1Ω	10MΩ	E-24
2512	1W	200V	400V	±1% (F)	±100	1Ω	1MΩ	E-96
				±5% (J)	±200	0Ω&1Ω	10MΩ	E-24
1210	1/3W	200V	400V	±1% (F)	±100	1Ω	1MΩ	E-96
				±5% (J)	±200	0Ω&1Ω	10MΩ	E-24

Jumper: *0201,0402,0603 size maximum resistance Rmax<50mΩ and rated current $I_R \leq 1A$

*0805,1206,1210,2010,2512 size maximum resistance Rmax<50mΩ and rated current $I_R \leq 2A$

1Ω~10Ω: *Temperature Coefficient of Resistance for 0402, 0603 ,0805,1206=-300~+500

*Temperature Coefficient of Resistance for 0201, 1210, 2010, 2512=±300

*Temperature Coefficient of Resistance for 1812, 1218=±400

LOW RESISTANCE

Size	Power Rating at 70°C	Max. RCWV	Max Overload Voltage	Resistance Tolerance (%)	TCR (PPM/°C)	Resistance Range (Ω)		Standard Resistance Values
						Min.	Max.	
0603	1/10W	302mV	603mV	±1% (F) ±5% (J)	±300	100mΩ	910mΩ	E-24
0805	1/8W	337mV	675mV	±1% (F) ±5% (J)	±300	100mΩ	910mΩ	E-24
					±400	50mΩ	91mΩ	
1206	1/4W	477mV	954mV	±1% (F) ±5% (J)	±200	50mΩ	910mΩ	E-24
2010	1/2W	675mV	1349mV		±400	40mΩ	47mΩ	
					±600	22mΩ	39mΩ	
2512	1W	954mV	1908mV		±1000	10mΩ	20mΩ	
1812	1/2W	1220mV	2440mV	±1% (F) ±5% (J)	±800	10mΩ	990mΩ	E-24
					±1500	10mΩ	990mΩ	
1218	1W	870mV	1740mV	±1% (F) ±5% (J)	±800	10mΩ	990mΩ	E-24
					±1500	10mΩ	990mΩ	
1210	1/3W	551mV	1102mV	±1% (F)	±200	100mΩ	910mΩ	E-24

SPECIFICATION AND TEST METHODS

≥1Ω

Item	Specification	Test Method
DC Resistance	J: ±5% G: ±2% F: ±1% D: ±0.5% C: ±0.25% B: ±0.1% Zero ohm Jumper<50mΩ	IEC 60115-1 / JIS C 5201-1, Clause 4.5 Measure the resistance value.
Short time Overload	J,G: △R≦±(2%+0.1Ω) F,D: △R≦±(1%+0.05Ω) C,B: △R≦±(0.5%+0.05Ω)	IEC 60115-1 / JIS C 5201-1, Clause 4.13 2.5 x Rated voltage or Max. Overload Voltage for 5 sec. measure resistance after 30 minutes.
Solderability	Over 95% of termination must be covered with solder	IEC 60115-1 / JIS C 5201-1, Clause 4.17 After immersing flux, dip in the 235±2°C molten solder bath for 2±0.5 sec.
Resistance to Solder Heat	J,G: △R≦±(1%+0.1Ω) F,D,C,B: △R≦±(0.5%+0.05Ω) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.18 With 260±5°C for 10±1 sec.
Temperature Coefficient of Resistance (TCR)	J,G: ±200ppm/°C F: ±100 ±50ppm/°C D,C,B: ±50ppm/°C (0402 SIZE F,J,B ±200ppm/°C) (0201 SIZE F,J, ±300ppm/°C)	IEC 60115-1 / JIS C 5201-1, Clause 4.8 Test temperature: 25°C (T1)→ -55°C (T2) 25°C (T1)→ +155°C (T2) TCR (ppm/°C) = $\frac{R2-R1}{R1} x \frac{1}{T2-T1} x10^6$ T1: 25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Load Life Humidity	J,G: △R≦±(3%+0.1Ω) F,D: △R≦±(1%+0.05Ω) C,B: △R≦±(0.5%+0.05Ω)	IEC 60115-1 / JIS C 5201-1, Clause 4.24 Maintain the temperature of the resistor at 40±2°C and 90~95 R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/-0 hours. After 1~4 hour, measure the resistance value.
Load Life	J,G: △R≦±(3%+0.1Ω) F,D: △R≦±(1%+0.05Ω) C,B: △R≦±(0.5%+0.05Ω)	IEC 60115-1 / JIS C 5201-1, Clause 4.25 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5 hour OFF) at RCWV or Max. Keep the resistor at 70±2°C ambient
Temperature Cycle	J,G: △R≦±(1%+0.1Ω) F,D,C,B: △R≦±(0.5%+0.05Ω) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.19 Repeat 5 cycles at follows -55°C (30 min.)~+25°C (2~3 min.) +125°C (30 min.)~+25°C (2~3 min.) for 0201 -55°C (30 min.)~+25°C (2~3 min.) +155°C (30 min.)~+25°C (2~3 min.) for others
Insulation Resistance	Between termination and coating must be over 1000MΩ	IEC 60115-1 / JIS C 5201-1, Clause 4.6 Test voltage: 100±15V
Bending Strength	J,G: △R≦±(1%+0.1Ω) F,D,C,B: △R≦±(0.5%+0.05Ω) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.33 Resistance change after bended on the 90mm PCB Bend: 3mm for 0201, 0402, 0603, 0805, 2mm for 1206, 1210, 2010, 2512

SMD THICK FILM CHIP RESISTORS

SPECIFICATION AND TEST METHODS

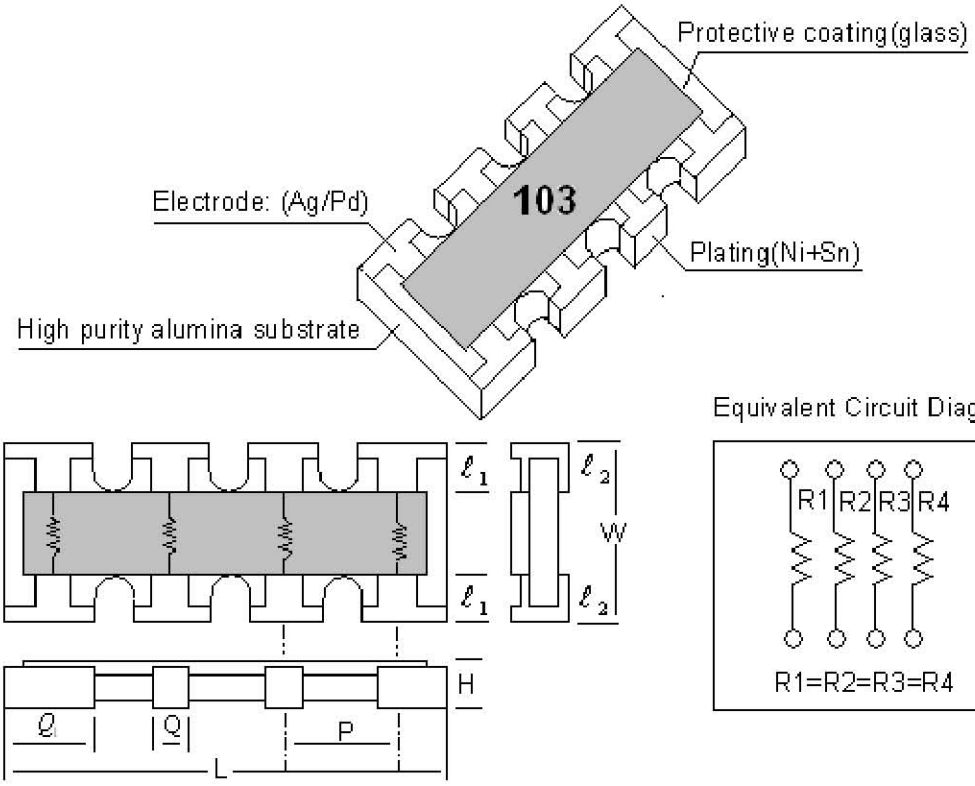
1Ω ↓

Item	Specification	Test Method
DC Resistance	J: ±5%, F: ±1%	IEC 60115-1 / JIS C 5201-1, Clause 4.5 Measure the resistance value.
Short time Overload	J: △R≦±(2%+0.5mΩ) F: △R≦±(1%+0.5mΩ)	IEC 60115-1 / JIS C 5201-1, Clause 4.13 2.5 x Rated voltage or Max. Overload Voltage for 5 sec. measure resistance after 30 minutes.
Solderability	Over 95% of termination must be covered with solder	IEC 60115-1 / JIS C 5201-1, Clause 4.17 After immersing flux, dip in the 235±2°C molten solder bath for 2±0.5 sec.
Resistance to Solder Heat	J: △R≦±(1%+0.5mΩ) F: △R≦±(0.5%+0.5mΩ) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.18 With 260±5°C for 10±1 sec.
Temperature Coefficient of Resistance (TCR)	Size: 0603, 0805 100mΩ~910mΩ: ±300ppm/°C Size: 1206, 2010, 2512 50mΩ~910mΩ: ±200ppm/°C Size: 1210 100mΩ~910mΩ: ±200ppm/°C	IEC 60115-1 / JIS C 5201-1, Clause 4.8 Test temperature: 25°C (T1)→ -55°C (T2) 25°C (T1)→ +155°C (T2) TCR (ppm/°C) = $\frac{R2-R1}{R1} x \frac{1}{T2-T1} x10^6$ T1: 25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Load Life Humidity	J: △R≦±(3%+0.5mΩ) F: △R≦±(1%+0.5mΩ)	IEC 60115-1 / JIS C 5201-1, Clause 4.24 Maintain the temperature of the resistor at 40±2°C and 90~95 R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/-0 hours. After 1~4 hour, measure the resistance value.
Load Life	J: △R≦±(3%+0.5mΩ) F: △R≦±(1%+0.5mΩ)	IEC 60115-1 / JIS C 5201-1, Clause 4.25 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5 hour OFF) at RCWV or Max. Keep the resistor at 70±2°C ambient
Temperature Cycle	J: △R≦±(1%+1mΩ) F: △R≦±(0.5%+1mΩ) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.19 Repeat 5 cycles at follows -55°C (30 min.)~+25°C (2~3 min.) +125°C (30 min.)~+25°C (2~3 min.) for 0201 -55°C (30 min.)~+25°C (2~3 min.) +155°C (30 min.)~+25°C (2~3 min.) for others
Insulation Resistance	Between termination and coating must be over 1000MΩ	IEC 60115-1 / JIS C 5201-1, Clause 4.6 Test voltage: 100±15V
Bending Strength	J: △R≦±(1%+1mΩ) F: △R≦±(0.5%+1mΩ) No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.33 Resistance change after bended on the 90mm PCB Bend: 3mm for 0201, 0402, 0603, 0805, 2mm for 1206, 1210, 2010, 2512

THICK FILM CHIP RESISTORS ARRAYS

☐ FCN124R (0402 4 Elements)

☐ FCN164R (0603 4 Elements)



Dimension

Unit: mm

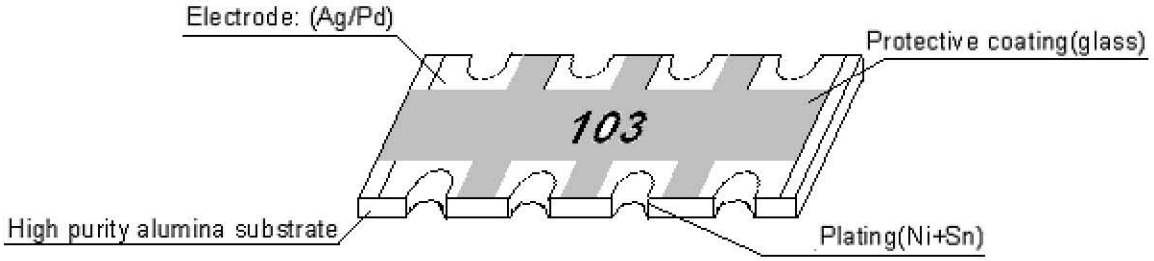
DIMENSION / TYPE	L	W	H	ℓ_1	ℓ_2	P	Q	Q_1
FCN124R (0402)	2.00±0.10	1.00±0.10	0.40±0.10	0.20±0.10	0.20±0.10	0.50±0.10	0.30±0.10	0.43±0.10
FCN164R (0603)	3.20±0.20	1.60±0.15	0.50±0.10	0.30±0.20	0.30±0.20	0.80±0.20	0.50±0.10	0.61±0.10

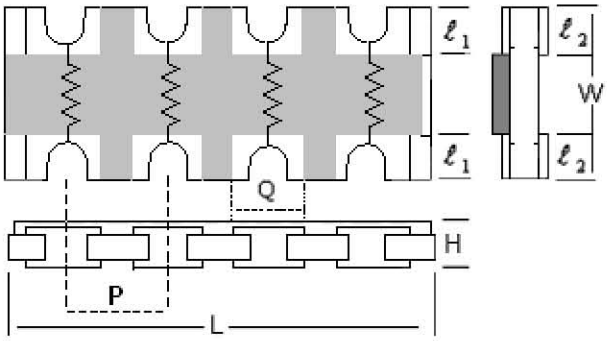
RATINGS

TYPE	Power Rating at 70°C	Rate Current of Jumper	Max Working Voltage	Max Overload Voltage	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
FCN124R	0.063W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	
FCN164R	0.1W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	

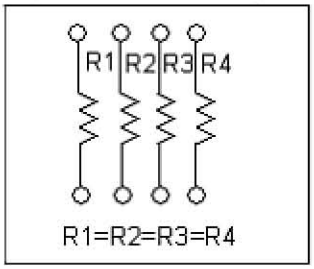
THICK FILM CHIP RESISTORS ARRAYS

- ☐ FCN124C (0402 4 Elements)
- ☐ FCN164C (0603 4 Elements)





Equivalent Circuit Diagram



Dimension

Unit: mm

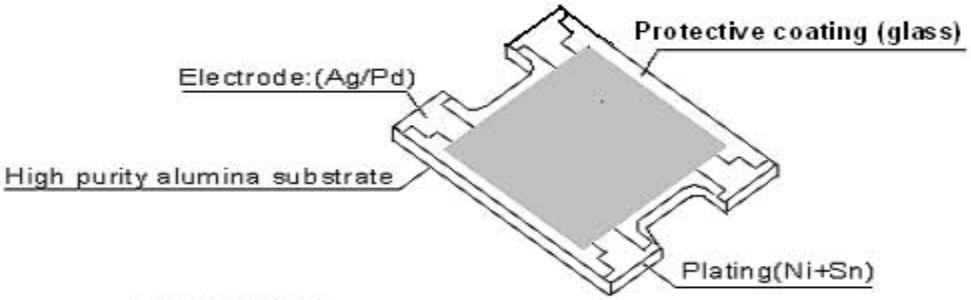
DIMENSION / TYPE	L	W	H	ℓ_1	ℓ_2	P	Q
FCN124C (0402)	2.00±0.10	1.00±0.10	0.40±0.10	0.15±0.10	0.20±0.10	0.50±0.10	0.30±0.10
FCN164C (0603)	3.20±0.20	1.60±0.20	0.50±0.10	0.35±0.20	0.40±0.20	0.80±0.10	0.40±0.10

RATINGS

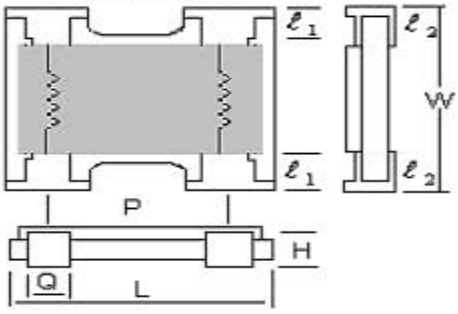
TYPE	Power Rating at 70°C	Rate Current of Jumper	Max Working Voltage	Max Over Load Voltage	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
FCN124C	0.063W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	
FCN164C	0.1W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	

THICK FILM CHIP RESISTORS NETWORK (Lead Free)

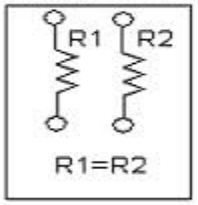
☐ **FCN122R (0402 2 Elements)**
☐ **FCN162R (0603 2 Elements)**



FCN122R

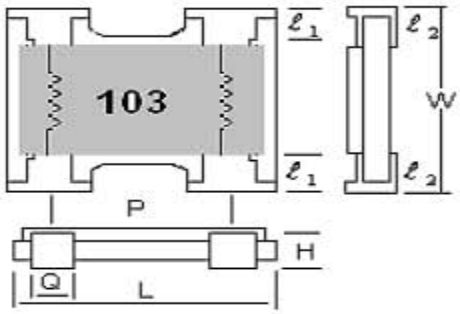


Equivalent Circuit Diagram

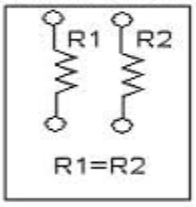


FCN122R
No Marking

FCN162R



Equivalent Circuit Diagram



FCN162R
code number same as
1% : 0603
5% : 0603

Dimension

Unit: mm

DIMENSION / TYPE	L	W	H	ℓ_1	ℓ_2	P	Q
FCN122R (0402)	1.00±0.10	1.00±0.10	0.33±0.05	0.15±0.10	0.25±0.10	0.67±0.10	0.34±0.10
FCN162R (0603)	1.60±0.15	1.60±0.15	0.50±0.04	0.30±0.10	0.30±0.10	0.99±0.10	0.61±0.10

RATINGS

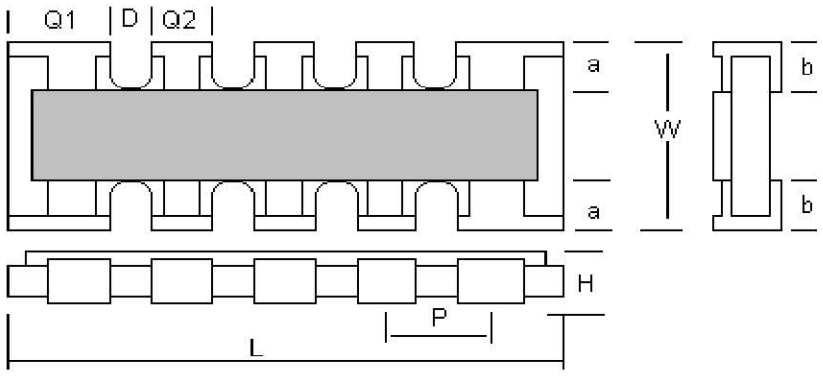
TYPE	Power Rating at 70°C	Rate Current of Jumper	Max Working Voltage	Max Over Load Voltage	TCR (PPM/°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Operating Temperature (°C)
FCN122R	0.063W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	
FCN162R	0.1W	1A	50V	100V	±200	JUMPER	below 50m	-55~+155°C
						±1%	10~1M	
						±5%	10~1M	

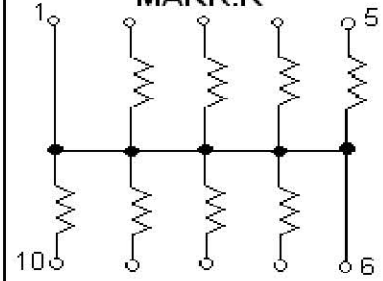
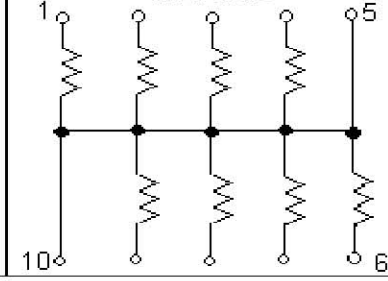
FCN128R (0402 8 Elements 10P8R)

Features

1. This product is highly suitable for the purpose of pull-up and pull-down.
2. It is easy to handle because of no specified direction for mounting due to the symmetrical placement of common terminal.

Dimension



Type	Circuit diagram
R	MARK:R 
S	MARK:S 

Unit: mm

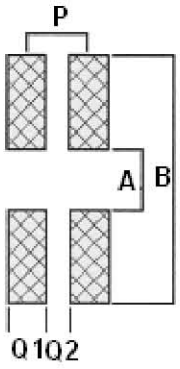
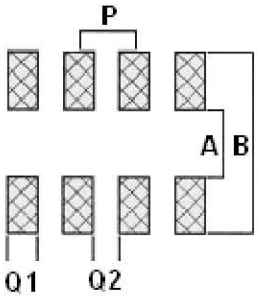
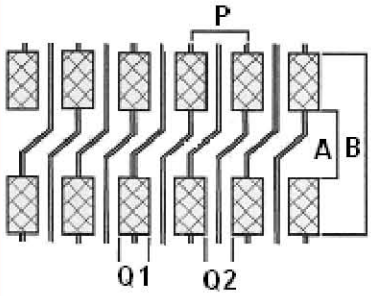
TYPE	L	W	H	D	Q1	Q2	a	b	P
FCN128R (0402)	3.20±0.20	1.60±0.10	0.55±0.10	0.32±0.10	0.53±0.10	0.32±0.15	0.30±0.15	0.30±.15	0.64±0.10

RATINGS

TYPE	Rated Power at 70°C	Maximum Working Voltage	Maximum Overload Voltage	Temperature Coefficient of Resistance (PPM/°C)	Resistance Range	Resistance Tolerance	Operating Temperature (°C)
FCN128R	0.063W	50V	100V	±200	10Ω~1MΩ	±5%	-55~+155°C

THICK FILM CHIP RESISTORS NETWORK (Lead Free)

RECOMMEND LAND PATTERN DESIGN (For Reflow Soldering):

FCN122R FCN162R	FCN124R FCN124C FCN164R FCN164C	FCN128R
		

Unit: mm

TYP \ DIM	A	B	P	Q1	Q2
FCN122R	0.50	2.00	0.67	0.33	0.34
FCN162R	1.00	2.60	0.95	0.62	0.38
FCN124R FCN124C	0.50	2.00	0.50	0.28	0.22
FCN164R FCN164C	1.00	2.60	0.80	0.40	0.40
FCN128R	3.10	2.60	0.30	0.40	0.40

☐EXAMPLE: FCN164C 103J
FCN164R 103J

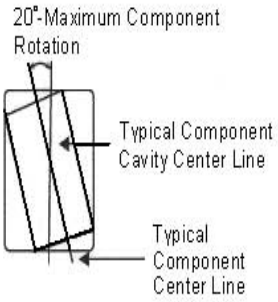
FCN164	R	103	J	P	A. Type(FCN164R 0603 ARRAY)
A	B	C	D	E	B. Type(R=Convex C=Concave)
FCN164	C	103	J	P	C. Resistance Value(E-24 E-96 Series) 10K
A	B	C	D	E	D. Tolerance(F:± 1% J:± 5% K:± 10%)
					E Packing (P: 500pcs Paper Tape Reel)
					Packing (E: 400pcs Plastic Tape Reel)

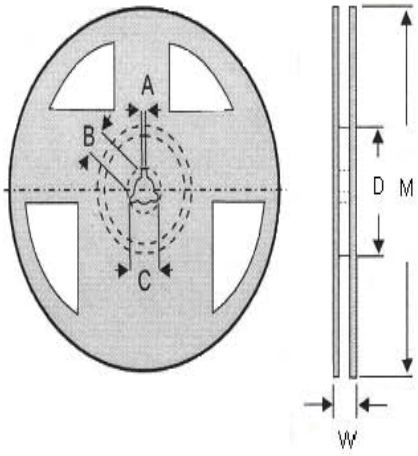
☐EXAMPLE: FCN128R 103J

FCN128	R	103	J	P	A. Type(FCN128Resistor Network 0402 10P8R)
A	B	C	D	E	B. Circuit diagram(R type)
					C. Resistance Value(E-24 Series)
					D. Tolerance(J:± 5% K:± 10%)
					E Packing (P: 500pcs Paper Tape Reel)
					Packing (E: 400pcs Plastic Tape Reel)

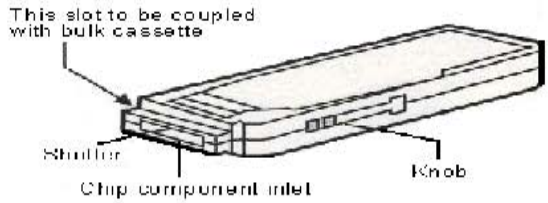
PACKAGING

REEL DIMENSION (mm)





Bulk Case



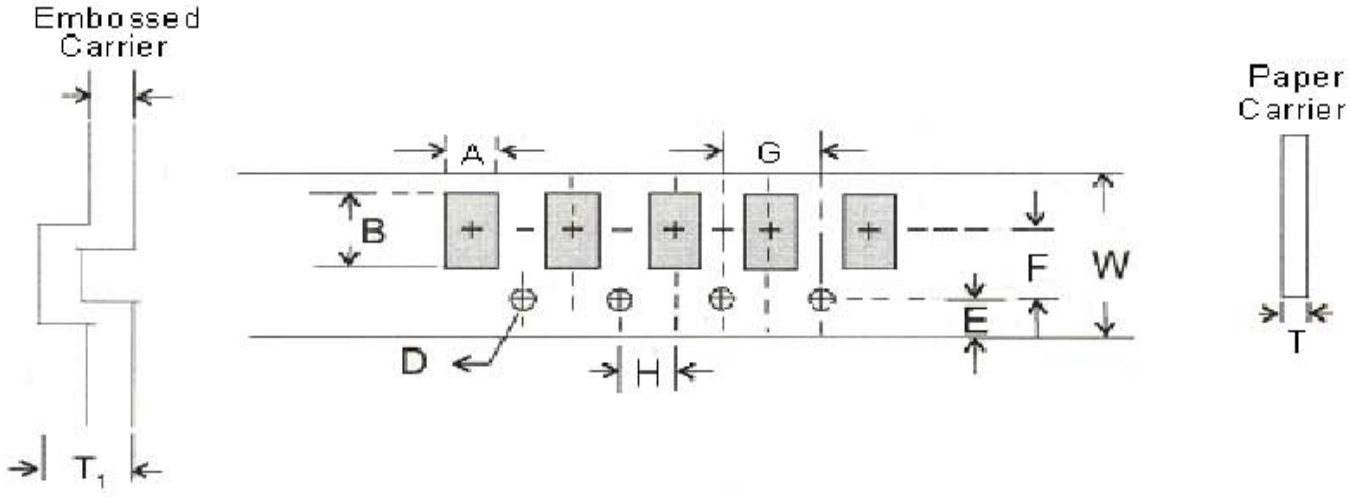
Dimension of Bulk Case
110(L) x86(W) x12(H)mm
Bulk case was standardized in Mar, 1992(EIA 7201)
0603 25Kpcs
0402 50Kpcs
0805 10Kpcs

Unit: mm

Reel/Tape	W	M	A	B	C	D
7" reel for 8 mm tape	9.0±0.5	178±2.0	2.0±0.5	13.5±0.5	21.0±0.5	60.0±1.0
7" reel for 12 mm tape	13.8±0.5	178±2.0	2.0±0.5	13.5±0.5	21.0±0.5	80.0±1.0
10" reel for 8 mm tape	10.0±0.5	254±2.0	2.0±0.5	13.5±0.5	21.0±0.5	100.0±1.0
13" reel for 8 mm tape	10.0±0.5	330±2.0	2.0±0.5	13.5±0.5	21.0±0.5	100.0±1.0

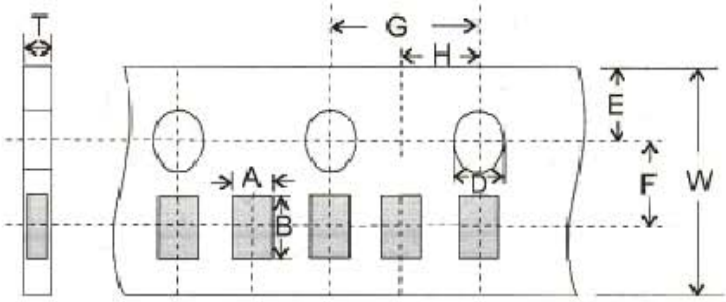
Type	Tape Width	Taping Package (pcs/reel)					
		Paper Tape					Plastic Tape
		2 mm Pitch	4 mm Pitch				4 mm Pitch
		-	-	C10	B15	B20	-
0201	8 mm	10,000	-	-	-	-	-
0402	8 mm	10,000	-	-	-	-	-
0603	8 mm	-	5,000	10,000	15,000	20,000	-
0805	8 mm	-	5,000	10,000	15,000	20,000	-
1206	8mm	-	5,000	10,000	15,000	20,000	-
1210	8 mm	-	5,000	10,000	15,000	20,000	-
2010	12 mm	-	-	-	-	-	4,000
2512	12 mm	-	-	-	-	-	4,000
FCN122R	8 mm	10,000					
FCN124R	8 mm	10,000					
FCN124C	8 mm	10,000					
FCN162R	8 mm		5,000	10,000	15,000	20,000	
FCN164R	8 mm		5,000	10,000	15,000	20,000	
FCN164C	8 mm		5,000	10,000	15,000	20,000	
FCN128R	12 mm		5,000	10,000			
Reel		7"	7"	10"	13"	13"	7"

TAPPING SPECIFICATION



Unit: mm

	Size	A	B	W	E	F	G	H	T	D	T_1
Paper Type	028R	1.90±0.1	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	034C	1.90±0.2	3.45±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	034R	1.90±0.2	3.45±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	0603	1.05±0.2	1.80±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.10	1.5±0.10	
	0805	1.55±0.2	2.30±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	1206	1.90±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	1210	2.85±0.2	3.50±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
	032R	1.80±0.2	1.80±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.75±0.10	1.5±0.10	
TE Embossed	2010	2.80±0.2	5.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.15	1.5±0.10	0.85±0.15
	2512	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.15	1.5±0.10	0.85±0.15
	LR25	3.40±0.2	6.70±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.15	1.5±0.10	0.85±0.15

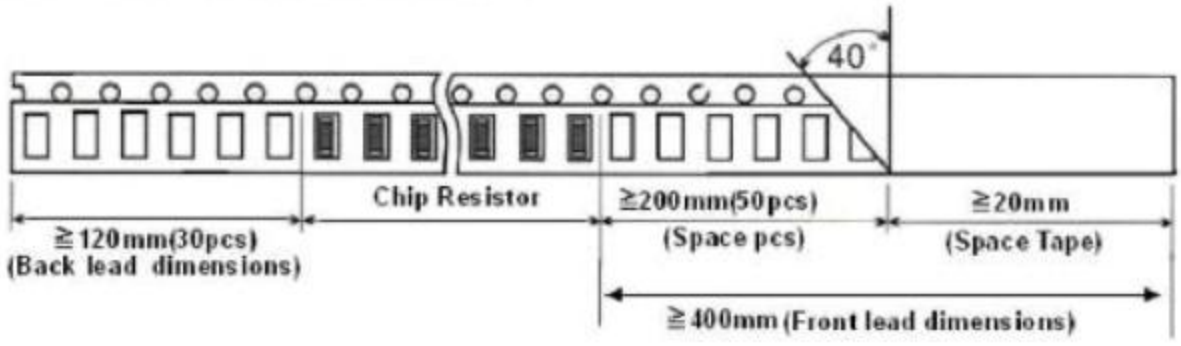


Unit: mm

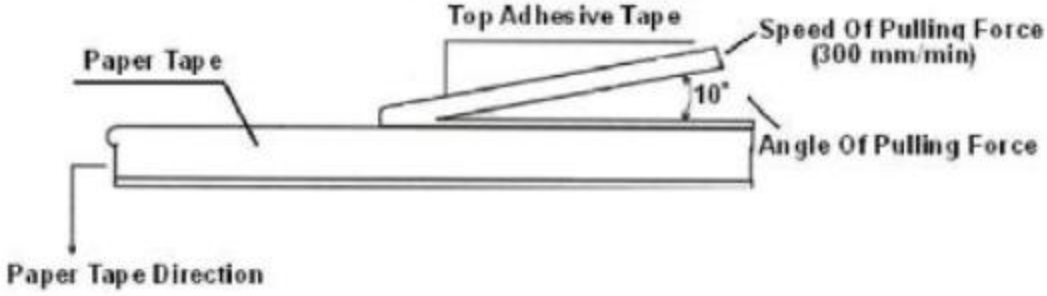
	Size	A	B	W	E	F	G	H	T	D	T_1
Paper Type	022R	1.25±0.1	1.25±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.45±0.10	1.5±0.10	
	024C	1.20±0.1	2.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.10	1.5±0.10	
	024R	1.20±0.1	2.20±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.60±0.10	1.5±0.10	
	0402	0.7±0.1	1.20±0.1	0.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	0.45±0.10	1.5±0.10	

PACKING MATERIAL DATA / STORAGE DATE

Front & Back Lead Dimensions:



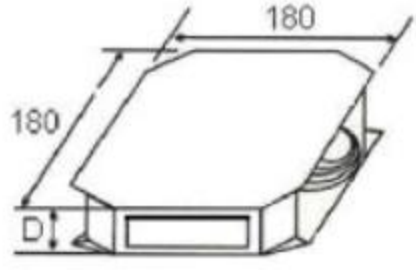
Top Adhesive Peel Off Strength: 10~70 gf



Package:

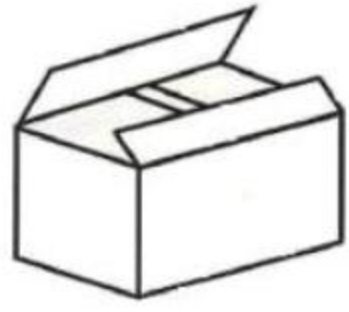
Inner Box Size

Reel	Size D(mm)
1	13
2	24
3	36
5	60
10	113



External Box Size

Contain K pcs	Length(mm)	Width(mm)	Depth(mm)
150K	129	67	67
300K	445	385	203



Storage Date:

Storage time at the environment temp: 25± 5°C、humidity: 60± 15% for two years.