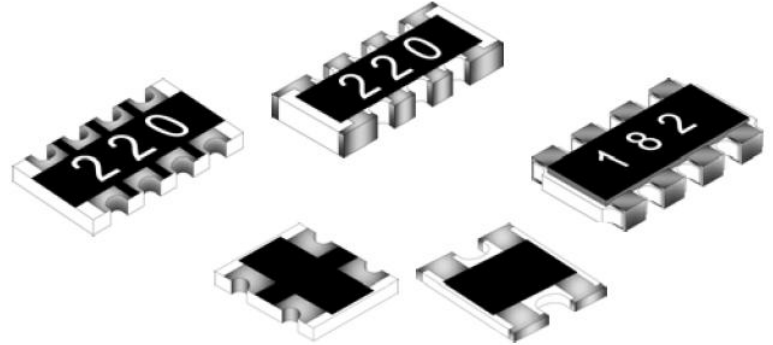


FCN series Thick Film Chip Resistor Array

◆ Features

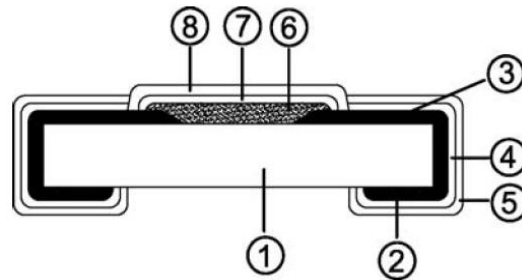
- » Small size and light weight
- » High reliability and stability
- » Comply with RoHS



◆ Applications

- » Computer application, NB, MB, add-on card, hard disk
- » Mobile phone, Telecom
- » Consumer electrical equipment, PDAs, Digital Camcorder

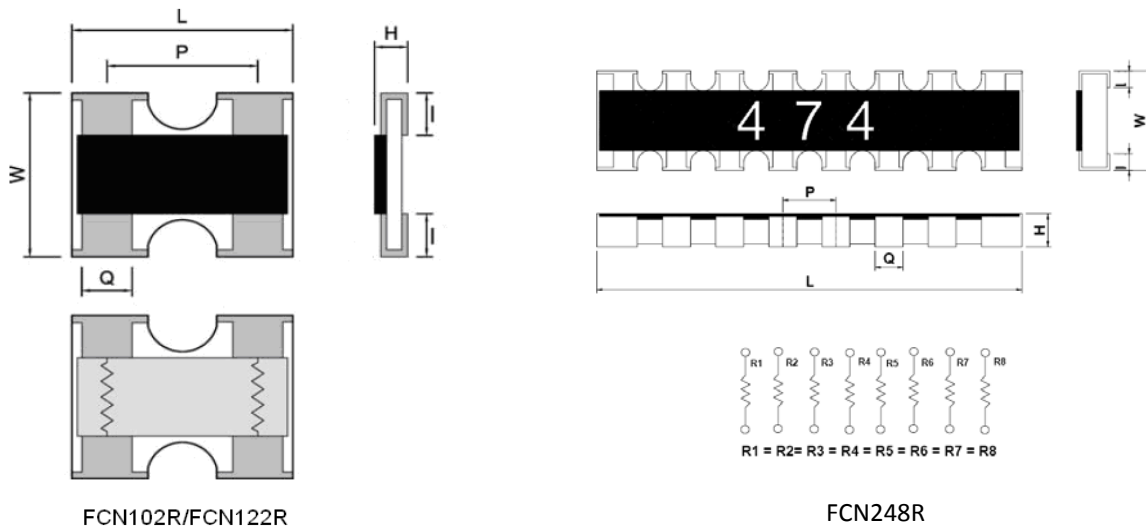
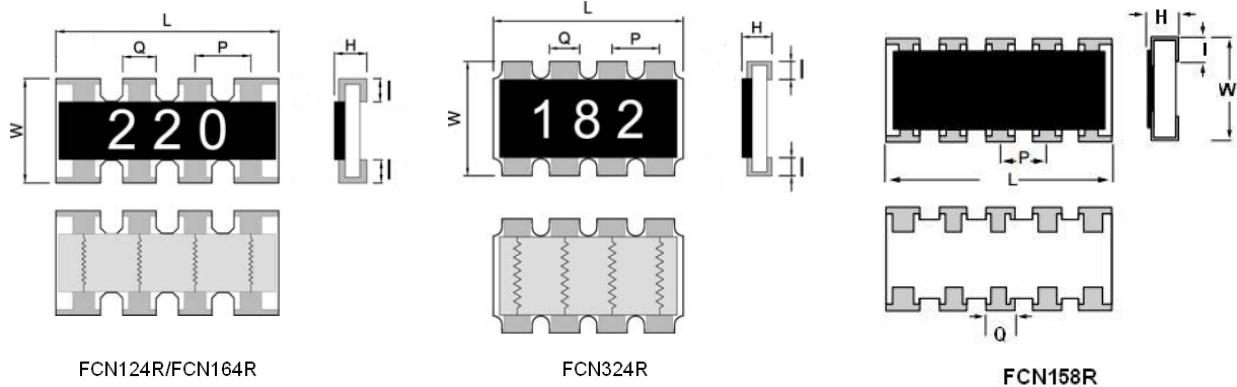
◆ Configuration



1	Alumina Substrate	5	External Electrode (Sn)
2	Bottom Electrode (Ag)	6	Resistor Layer (RuO ₂)
3	Top Electrode (Ag/Pd)	7	Primary Overcoat (Glass)
4	Barrier Layer (Ni)	8	Secondary Overcoat (Epoxy)

◆ Dimension

» Convex

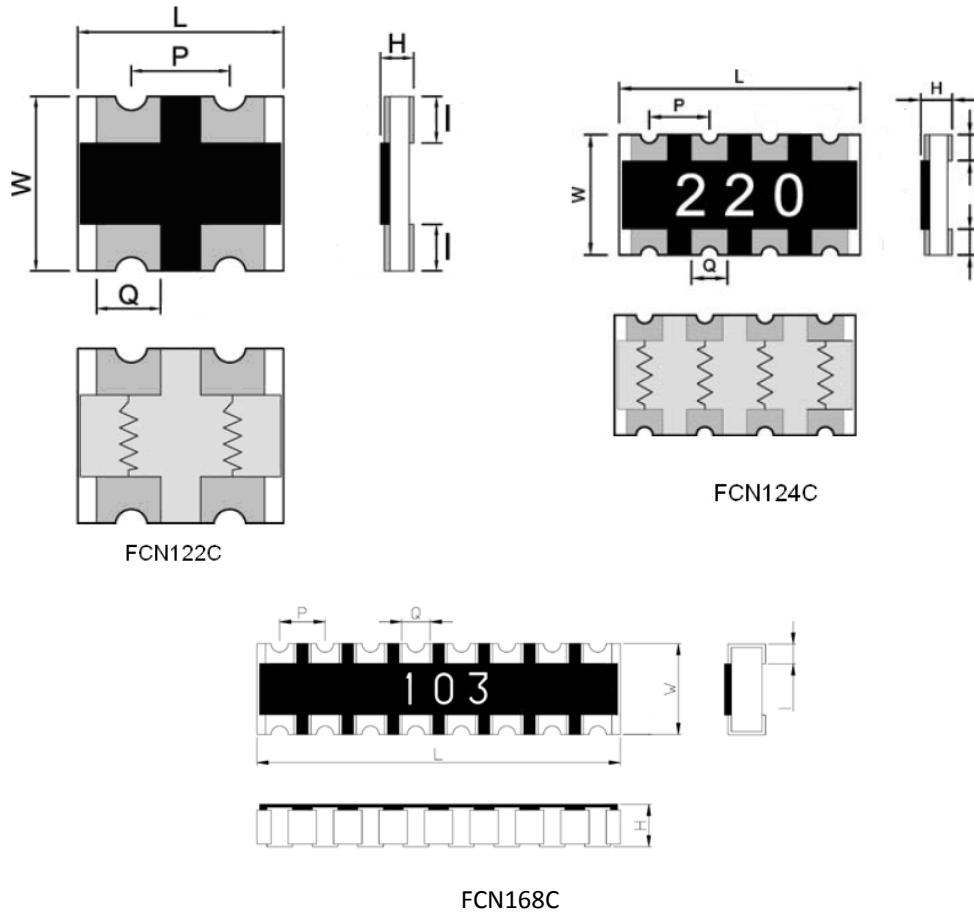


Unit: mm

TYPE	L	W	H	I	P	Q
FCN102R	0.80±0.10	0.60±0.10	0.30±0.05	0.15±0.05	0.50±0.10	0.35±0.10
FCN122R	1.00±0.10	1.00±0.10	0.32±0.10	0.25±0.10	0.67±0.10	0.34±0.15
FCN124R	2.00±0.10	1.00±0.10	0.40±0.10	0.22±0.15	0.50±0.10	0.30±0.10
FCN248R	4.00±0.20	1.60±0.10	0.40±0.10	0.30±0.10	0.50±0.10	0.25±0.10
FCN158R	3.20±0.20	1.60±0.15	0.60±0.10	0.35±0.15	0.64±0.05	0.35±0.05
FCN162R	1.60±0.15	1.60±0.15	0.45±0.10	0.30±0.15	0.80±0.20	0.60±0.10
FCN164R	3.20±0.20	1.60±0.15	0.50±0.10	0.30±0.20	0.80±0.20	0.50±0.15
FCN324R	5.10±0.20	3.10±0.20	0.55±0.15	0.55±0.15	1.30±0.20	0.90±0.10

◆ Dimension

» Concave



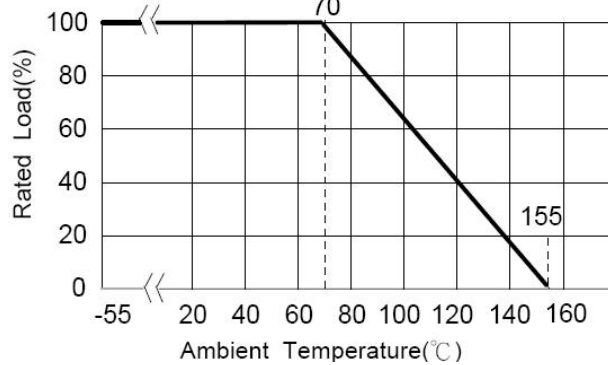
Unit:mm

TYPE	L	W	H	I	P	Q
FCN122C	1.00±0.10	1.00±0.10	0.30±0.10	0.25±0.15	0.50±0.10	0.30±0.15
FCN124C	2.00±0.10	1.00±0.10	0.40±0.10	0.22±0.15	0.50±0.10	0.34±0.15
FCN162C	1.60±0.15	1.60±0.15	0.55±0.10	0.40±0.15	0.80±0.10	0.50±0.10
FCN164C	3.20±0.15	1.60±0.15	0.55±0.10	0.45±0.15	0.80±0.10	0.50±0.10
FCN168C	6.40±0.20	1.60±0.20	0.55±0.10	0.40±0.15	0.80±0.10	0.50±0.10

◆ Power Derating Curve

Operating Temperature Range : - 55 ~ 155 °C

For resistors operated in ambient temperatures above 70 °C , power rating shall be derated in accordance with figure below.



◆ Rating

» Convex

TYPE	Power Rating At 70°C (W)	Max Working Voltage	Max Overload Voltage	TCR (ppm/°C) Lower available	Resistance Range		
					0.5%	1%	5%
FCN102R	1/32W (0.031W)	12.5V	25V	±500	---	---	3Ω ≤ R < 10Ω
				±300	---	---	10Ω ≤ R < 1K Ω
				±200	---	---	1K Ω ≤ R ≤ 1M Ω
FCN158R	1/16W (0.063W)	25V	50V	±200	---	---	10Ω ≤ R < 100KΩ
FCN122R	1/16 W (0.063W)	25V	50V	±400	---	1Ω ≤ R < 10Ω	1Ω ≤ R < 10Ω
				±200	---	10Ω ≤ R ≤ 1M Ω	10Ω ≤ R ≤ 1M Ω
FCN124R	1/16 W (0.063W)	25V	50V	±400	---	1Ω ≤ R < 10Ω	1Ω ≤ R < 10Ω
				±200	---	10Ω ≤ R ≤ 1M Ω	10Ω ≤ R ≤ 1M Ω
FCN248R	1/16 W (0.063W)	25V	50V	±250	---	10Ω ≤ R ≤ 1M Ω	1Ω ≤ R ≤ 1M Ω
FCN162R	1/16 W (0.063W)	50V	100V	±200	---	10Ω ≤ R ≤ 1M Ω	1Ω ≤ R ≤ 10M Ω
FCN164R	1/16 W (0.063W)	50V	100V	0~+400	---	1Ω ≤ R < 10Ω	1Ω ≤ R < 10Ω
				±200	---	22Ω ≤ R < 470K Ω	10Ω ≤ R < 10M Ω
FCN324R	1/4 W (0.25W)	200V	400V	0~+400	---	1Ω ≤ R < 10Ω	1Ω ≤ R < 10Ω
				±200	---	10Ω ≤ R < 1M Ω	10Ω ≤ R < 1M Ω

TYPE	FCN102R	FCN122R	FCN124R	FCN128R	FCN162R	FCN164R	FCN248R	FCN324R
Jumper Rated Current	0.5A				1A			2A

◆ Rating

» Concave

TYPE	Power Rating At 70°C(W)	Max Working Voltage	Max Overload Voltage	TCR (ppm/°C) Lower available	Resistance Range	
					1%	5%
FCN122C	1/16 W (0.063W)	25V	50V	±650	$3\Omega \leq R < 10\Omega$	$3\Omega \leq R < 10\Omega$
				±250	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$
FCN124C	1/16 W (0.063W)	25V	50V	±400	$1\Omega \leq R < 10\Omega$	$1\Omega \leq R < 10\Omega$
				±200	$10\Omega \leq R \leq 1M\Omega$	$10\Omega \leq R \leq 1M\Omega$
FCN162C	1/16 W (0.063W)	50V	100V	±200	$1\Omega \leq R \leq 1M\Omega$	$1\Omega \leq R \leq 10M\Omega$
FCN164C	1/16 W (0.063W)	50V	100V	±200	$1\Omega \leq R \leq 1M\Omega$	$1\Omega \leq R \leq 10M\Omega$
FCN168C	1/16 W (0.063W)	50V	100V	±200	$1\Omega \leq R \leq 1M\Omega$	$1\Omega \leq R \leq 10M\Omega$

TYPE	FCN122C	FCN124C	FCN162C	FCN164C	FCN168C
Jumper Rated Current	1A				

Note: Lower TCR value and higher Power Rating are available for customer's requirement.

Rated Voltage: The resistor shall have a DC continuous working voltage or a rms. AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined from the following:

$$E = \sqrt{R \times P}$$

E = Rated voltage (v)

P = power rating (w)

R = Nominal resistance(Ω)

◆ Part Number

FCN	164	R	J	470R	□	□□
Type	Size	Terminal Type	Tolerance	R VALUE	Reel Size	Package quantity
FCN	102=0201x2 (4P2R)	R=convex	J=5%	10Ω =10R	Blank =	Standard Package As below
	122=0402x2 (4P2R)	C=concave	F=1%	4.7Ω =4R7	B= 13"	10 = 10K per reel
	124=0402x4 (8P4R)		D=0.5%		C= 10"	20 = 20K per reel
	158=0612 (10P8R)					08= 8K per reel
	248=0402x8 (16P8R)					16= 16K per reel
	162=0603x2 (4P2R)					
	164=0603x4 (8P4R)					
	168=0603x8 (16P8R)					
	324=1206x4 (8P4R)					

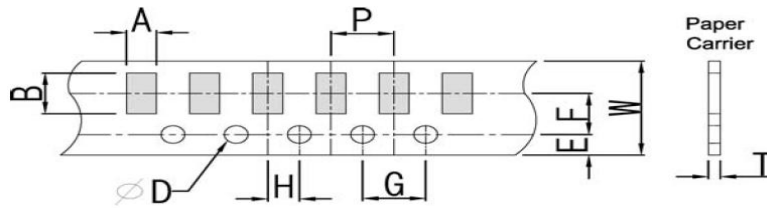
» Standard Package Q'ty for each size is as following.

TYPE	Standard Package Q'ty
FCN102	10K per reel (7")
FCN122	10K per reel (7")
FCN158	5K per reel (7")
FCN124	10K per reel (7")
FCN248	5K per reel (7")
FCN162	5K per reel (7")
FCN164	5K per reel (7")
FCN168	5K per reel (7")
FCN324	5K per reel (11")

◆ Packing

Tape Dimension

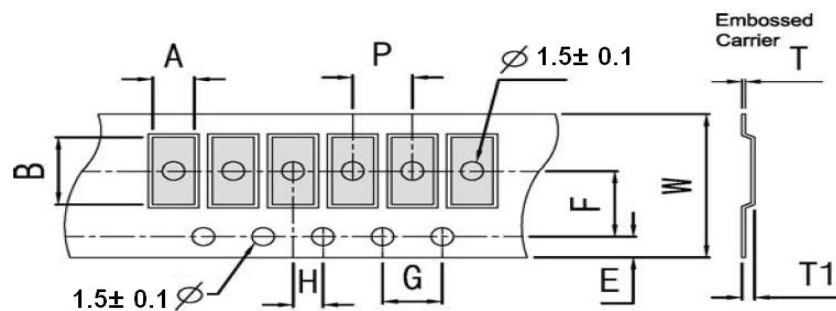
» Paper Carrier



Unit: mm

TYPE	A	B	W	E	F	G	H	T	ϕD	P
FCN102R	0.70± 0.1	0.90± 0.1	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.05	2.0± 0.05	0.45± 0.2	1.5± 0.1	2.0± 0.1
FCN122R	1.20± 0.15	1.20± 0.15	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.45± 0.2	1.5± 0.1	2.0± 0.1
FCN124R	1.20± 0.10	2.20± 0.10	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.60± 0.2	1.5± 0.1	2.0± 0.1
FCN248R	1.90± 0.20	4.30± 0.20	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 0.05	2.0± 0.05	0.60± 0.2	1.5± 0.1	4.0± 0.1
FCN162R	1.90± 0.10	1.90± 0.10	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.60± 0.2	1.5± 0.1	4.0± 0.1
FCN164R	1.90± 0.20	3.50± 0.20	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.75± 0.2	1.5± 0.1	4.0± 0.1
FCN122C	1.20± 0.15	1.20± 0.15	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.45± 0.2	1.5± 0.1	2.0± 0.1
FCN124C	1.20± 0.10	2.20± 0.10	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.60± 0.2	1.5± 0.1	2.0± 0.1
FCN162C	1.90± 0.10	1.90± 0.10	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.75± 0.2	1.5± 0.1	4.0± 0.1
FCN164C	1.90± 0.20	3.50± 0.20	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.10	2.0± 0.05	0.75± 0.2	1.5± 0.1	4.0± 0.1
FCN168C	2.00± 0.20	6.90± 0.20	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 0.10	2.0± 0.05	0.75± 0.2	1.5± 0.1	4.0± 0.1

» Embossed Carrier

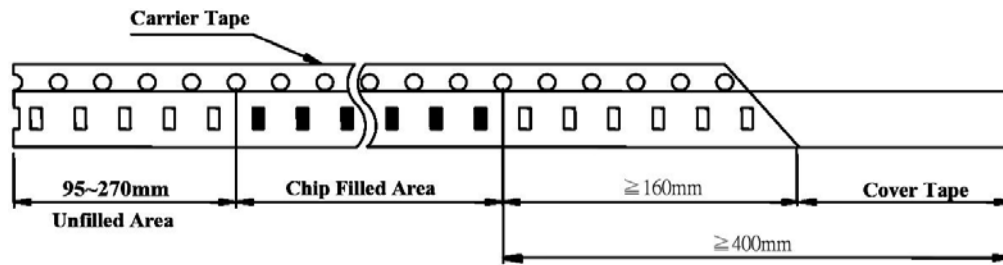


Unit: mm

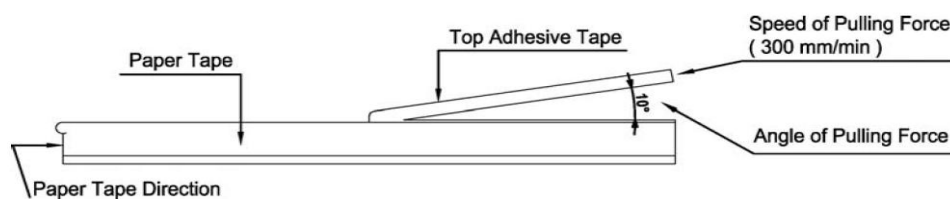
TYPE	A	B	W	E	F	G	H	T	T1	P
FCN324R	3.55± 0.2	5.55± 0.2	12± 0.1	1.75± 0.1	5.5± 0.05	4.0± 0.1	2.0± 0.05	0.25± 0.1	0.85± 0.15	8.0± 0.2

◆ Packing

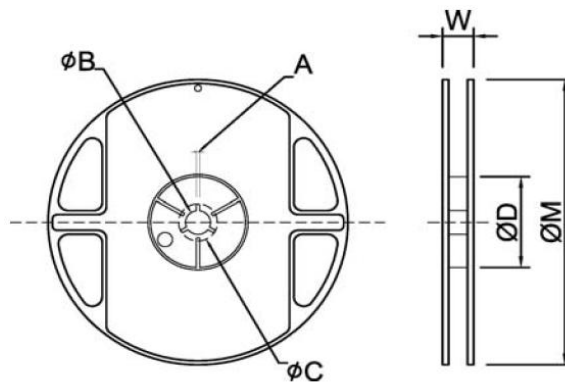
Lead Dimensions



Top Adhesive Peel Off Strength : 10~70g



Reel Dimensions



Unit: mm

TYPE	SIZE	A	ϕB	ϕC	ϕD	W	ϕM
FCN102	10K/Reel (7")	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
FCN122 FCN124	10K/Reel (7")	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
FCN248	5K/Reel (7")	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
FCN162 FCN164	5K/Reel (7")	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
	10K/Reel (10")	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	254±2.0
	20K/Reel (13")	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	330±2.0
FCN168	5K/Reel (7")	2.0±0.5	13.5±1.0	21±1.0	80±1.0	13.8±0.5	178±2.0
FCN324	5K/Reel (11")	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	278±2.0