

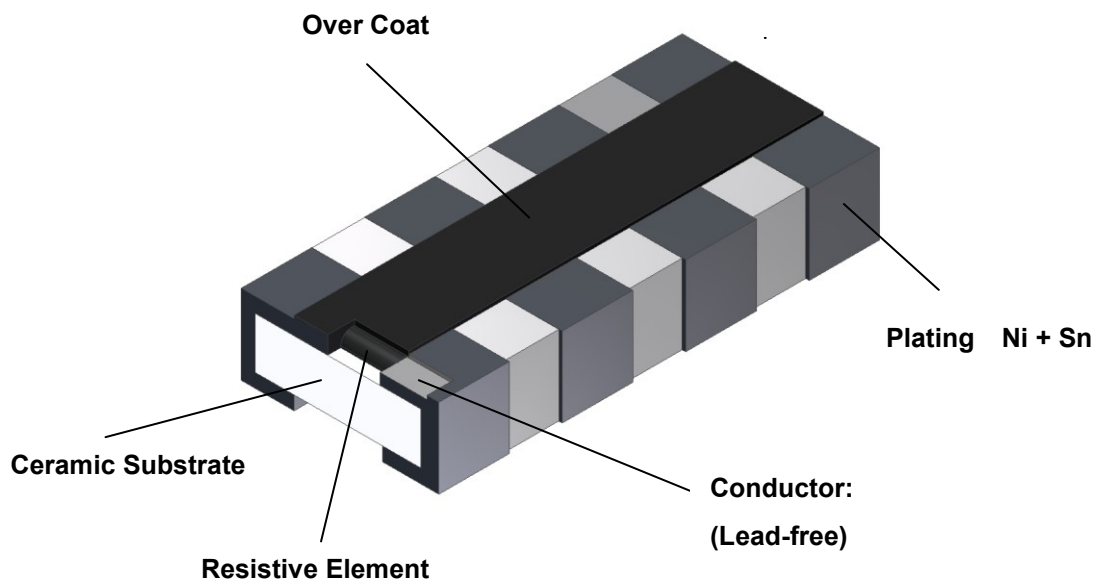


1. Scope :

This specification applies for the CNF14/CNFR14 series of chip resistor arrays and chip resistor reverse type arrays made by TA-I.

2. Construction , Dimensions , Schematic :

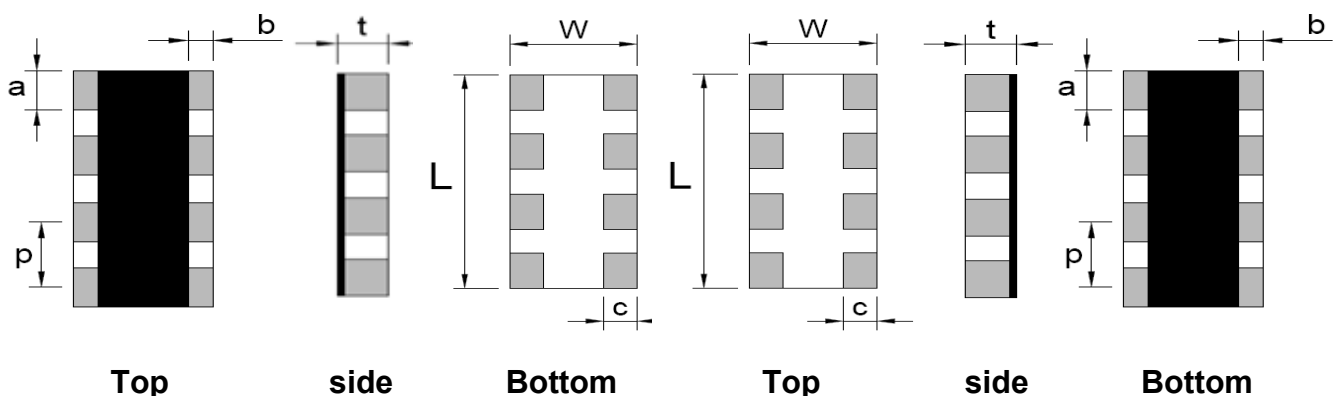
2.1 Construction :



2.2 Dimension :

CNF :

CNFR:

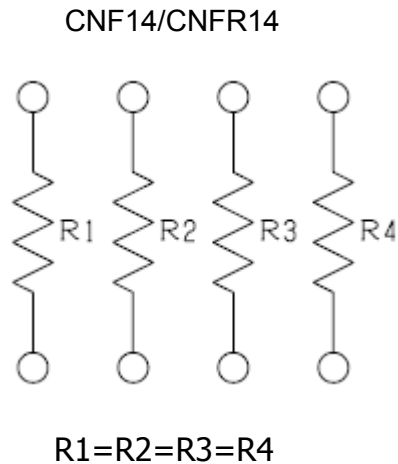


UNIT: mm

Type	L	W	t	P	a	b	c
CNF14/ CNFR14	1.40 ± 0.1	0.60 ± 0.1	0.35 ± 0.1	(0.4)	0.20 ± 0.1	0.15 ± 0.1	0.15 ± 0.1



2.3 Schematic :



3. Type Designation:

3.1 Chip Resistor Arrays

CNF/CNFR 14 J TN 102

Product Code	size	Tolerance	Packaging	Nominal
CNF : Chip Resistor Array	Power Rating		Function	Resistance
CNFR : Reverse Type Array				

14 - 0201 *4

J-±5%

T- Paper Tape

N : normal
S: normal
 +Anti-Sulfurated
A: Totally Lead free+
 Anti-Sulfurated
W: Totally Lead free

3 digits e.g.,:
(E-24) 102 = 1KΩ



4. Ratings & Characteristics :

Type	Power Rating at 70°C	Rating Voltage	Max. Working Voltage	Max. Over Load Voltage	Operating Temp. (°C)	Resistance Tolerance (%)	Resistance Range (Ω)	Temp Coefficient PPM/°C
CNF14/ CNFR14	0.031W	Refer 4.2	12.5V	25V	-55 ∩ +125°C	±5%	10Ω~100KΩ	± 200

0Ω CHIP RESISTOR ARRAYS

Type	Rated Current	Max Overload Current	Resistance Range
CNF14/ CNFR14	0.5A	1 A	Max 50mΩ

4.1 Derating Curve :

For resistors operated at ambient temperature over 70°C , power rating shall be derated in accordance with figure 1.

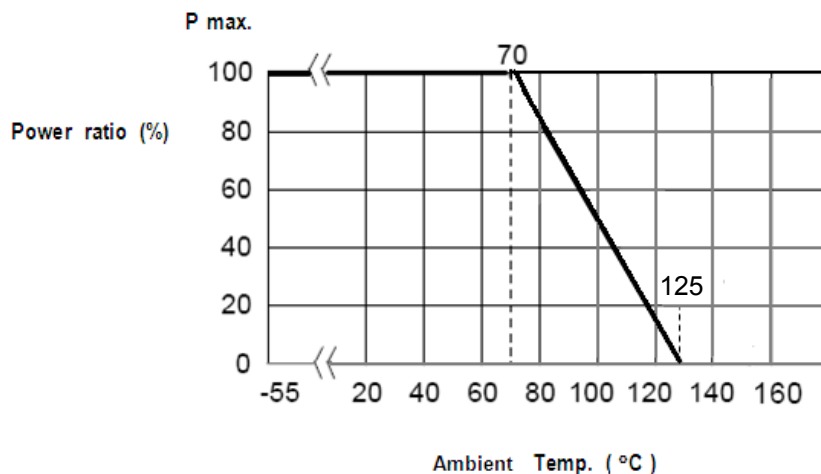


Figure 1

4.2 Rated Voltage:

The rated voltage is calculated by the following formula:

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

E=Rated Voltage(V)
P=Rated Power(W)
R=Resistance Value(Ω)

E.G. : What is CNF14JTN102 the rated voltage ?

CNF14JTN102 P:0.031W ; R:102 = 1KΩ = 1000Ω

$$E = \sqrt{0.031(W) * 1000(\Omega)} = 5.56 (V)$$

However, it shall not exceed the maximum working voltage in the critical resistance value.



Chip Resistor Arrays/
Reverse Type Array
(Lead-Free for CNF14/CNFR14 Series)
Halogen-Free

Document No.

TCNF-140S001A

Issued Date

2015/04/15

page

4 / 8

5. Reliability Tests :

Test Items	Reference standard	Condition of Test	Test Limits
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-1-4.8	+25~ +125 °C	± 200 ppm/°C
Short Time Overload	IEC60115-1-4.13 JIS-C5201-1-4.13	2.5 X rated voltage for 5 sec	±(3.0%+0.1Ω) 0Ω : 50 mΩ or less
Load Life	IEC60115-1-4.25.1 JIS-C5201-1-4.25.1	1000 hours at rated voltage , 70°C , 1.5hours "ON " , 0.5hour "OFF"	±(5.0%+0.1Ω) 0Ω :100 mΩ or less
Load Life with Humidity	IEC60115-1-4.24 JIS-C5201-1-4.24	1000 hours at rated voltage , 40±2°C,90~95% RH 1.5hours "ON " , 0.5hour "OFF"	±(5.0%+0.1Ω) 0Ω :100 mΩ or less
Rapid Change of Temperature	IEC60115-1-4.19 JIS-C5201-1-4.19	-55°C (30 min.) / +125 °C(30 min.) 5 cycles	±(1.0%+0.05Ω) 0Ω :50 mΩ or less
Solderability	IEC60115-1-4.17 JIS-C5201-1-4.17	245±5°C solder, 2±0.5 sec dwell. Solder : Sn96.5 / Ag3.0 / Cu0.5	At least 95% of surface area of electrode shall be covered with new solder.
Dielectric Withstanding Voltage (Voltage Proof)	IEC60115-1-4.7 JIS-C5201-1-4.7	Applying voltage 100V for 1 minute.	No abnormalities such as flashover, burning dielectric breakdown shall appear.
Insulation Resistance	IEC60115-1-4.6 JIS-C5201-1-4.6	Applying voltage 100V for 1 minute.	≥ 1GΩ
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-1-4.18	260 ±5°C solder , 10 ±1 sec dwell .	±(2.0%+0.05Ω) 0Ω : 50mΩ or less

6. Marking :

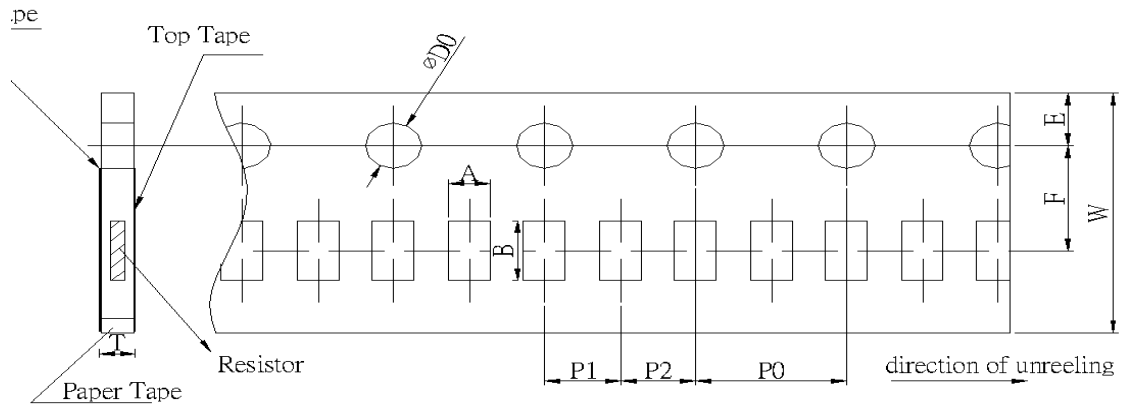
No Marking for CNF14/CNFR14



7. Taping & Reel :

7.1 Taping Dimensions

7.1.1 2 mm pitch paper

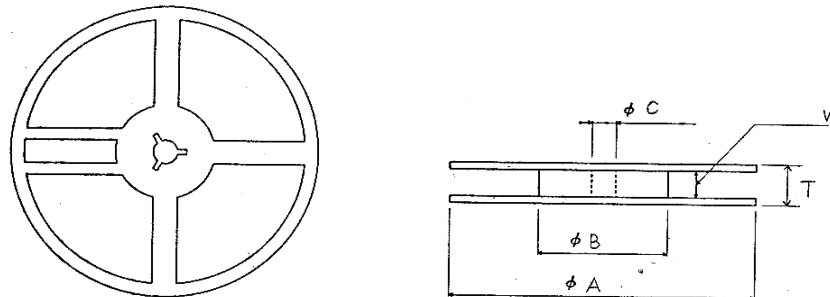


UNIT: mm

Type	A	B	W	F	E	P1	P2	P0	φD0	T
CNF14/ CNFR14	0.75±0.1	1.60±0.2	8.0±0.2	3.5±0.05	1.75±0.1	2.0±0.1	2.0±0.1	4.0±0.1	+0.1 -0	+0.2 -0.1

Package Type	Paper Tape
	2 mm pitch
	178mm/R
CNF14/ CNFR14	10000

7.2 Reel Specifications



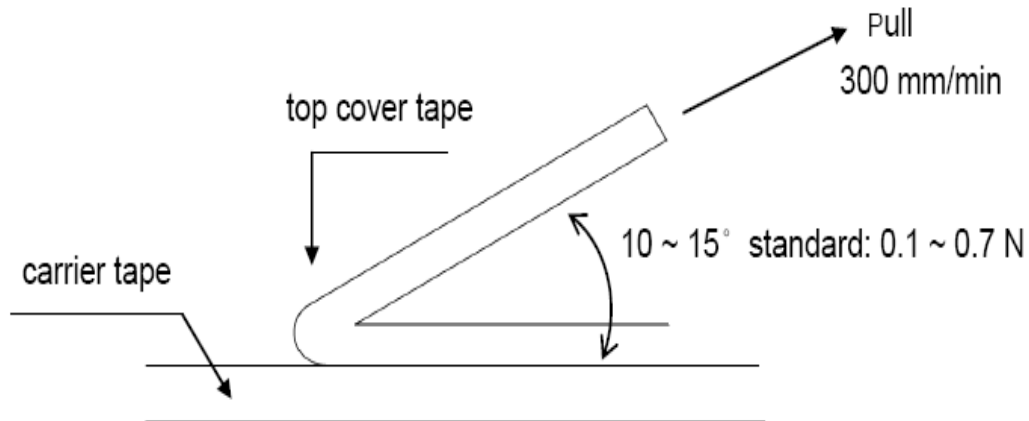
UNIT: mm

Type	φA	φB	φC	W	T
CNF14/ CNFR14	178.0 ± 2.0	60.0 ± 1.0	13.0 ± 1.0	9.0 ± 1.0	11.5 ± 1.0



7.3 Peel off Strength:

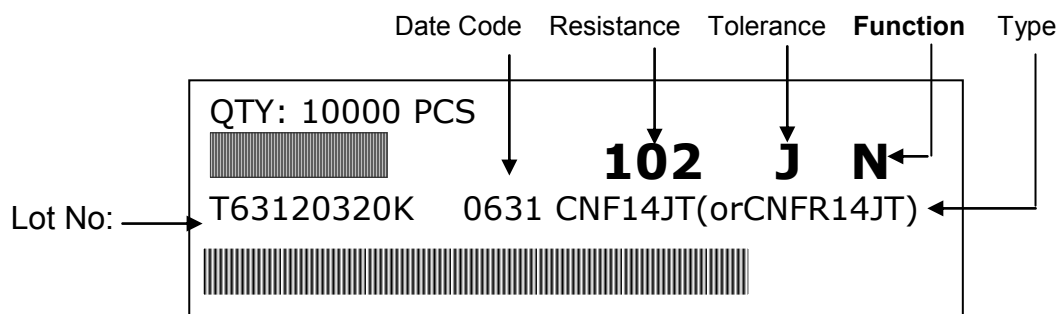
Peel –off force of paper and blister tape is in accordance with 0.1 to 0.7 N at a peel-off speed of 300 mm / minute.



8. Label

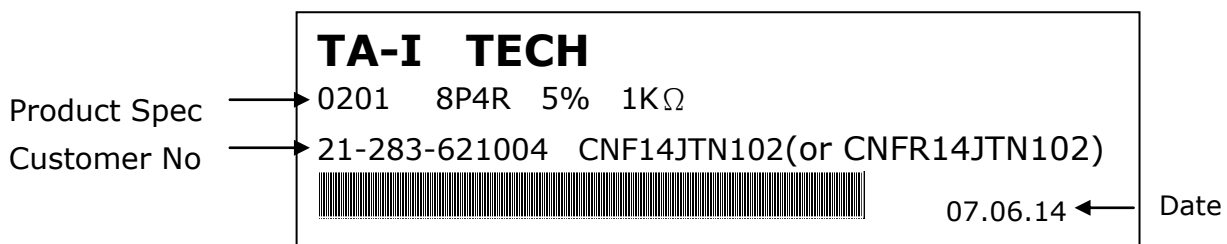
8.1 Manufacture Label :

8.1.1 Chip Resistor Array



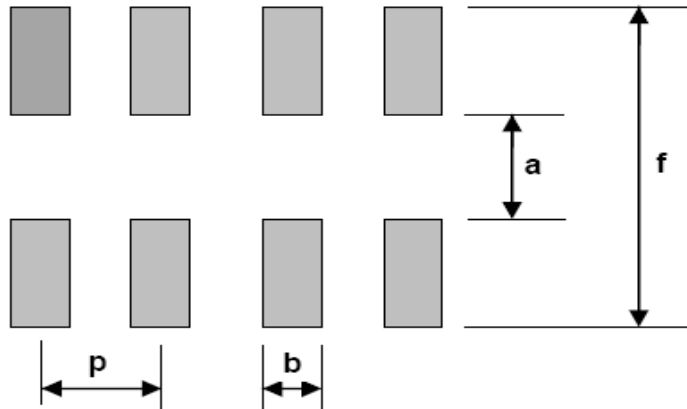
8.2. Customer Label (By customer request):

8.2.1 Chip Resistor Array



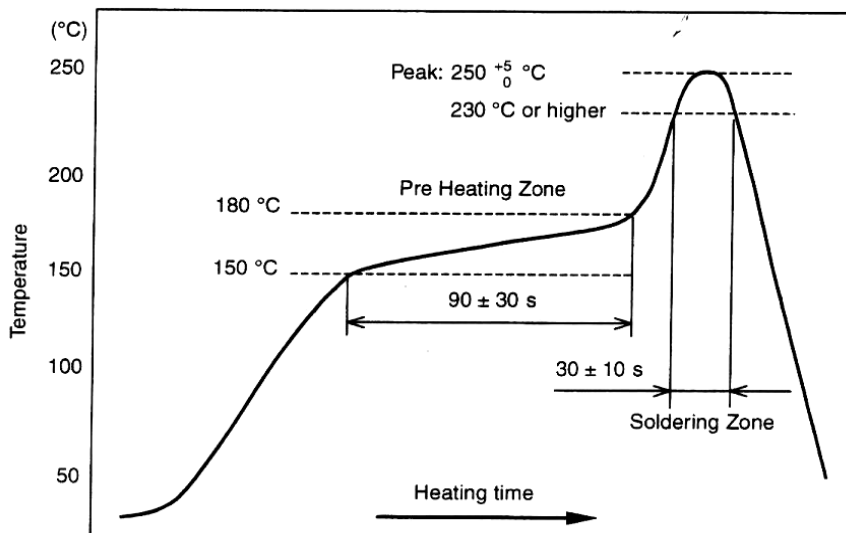


9. Recommended land patterns



Land pattern		Dimension (mm)			
		a	b	p	f
Type	Size				
CNF/ CNFR	14	0.3	0.2~0.3	0.4	0.9

10. Recommend IR – Reflow profile : (solder : Sn96.5 / Ag3 / Cu0.5)



Peak : 250 $\begin{matrix} +5 \\ -0 \end{matrix}$ °C , 5 sec

Pre – heat Zone : 150 to 180 °C , 90±30 sec

Soldering Zone : 230°C or higher , 30±10 sec



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TCNF-140S001A

Issued Date

2015/04/15

page

8 / 8

11. Storage Conditions:

Temperature : 5 to 35 °C

Related Humidity :40 to 75% RH

12. Shelf Life :

2 Years from manufacturing date.

13. ECN :

Engineering Change Notice: The customer will be informed with ECN if there is significant modification on the characteristics and materials described in Approval Sheet.

14. Manufacturing Country & City :

TA-I TECHNOLOGY CO., LTD. (Taiwan– Tao Yuan)

Tel: 886-3-3246169 Fax : 886-3-3246167

TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)

Tel :86- 512-63457879 Fax : 86-512-63457869

Associated companies :

(1) FORTUNE TASK RESISTOR FACTORY (China – Dongguan)

Tel : 86-769-8339-4790~3 Fax : 86-769-8339-4794

(2) TA-I TECHNOLOGY ELECTRONIC (DONGGUAN) CO., LTD. (China –Dongguan)

Tel : 86-769-8339-4790~3 Fax : 86-769-8339-4794

(3) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Pulaupinang)

Tel :604- 3900480 Fax : 604-3901481

(4) P.T.TAI ELECTRONICS Indonesia (Indonesia – Jakarta)

Tel :62-21-89830123 Fax : 62-21-89830703