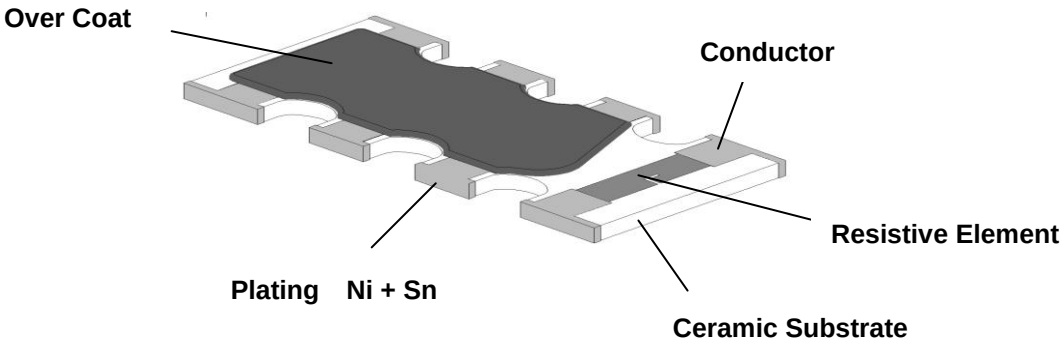
1. Scope :

This specification applies for the CN series of thick film chip resistor arrays & chip resistor networks made by TA-I.

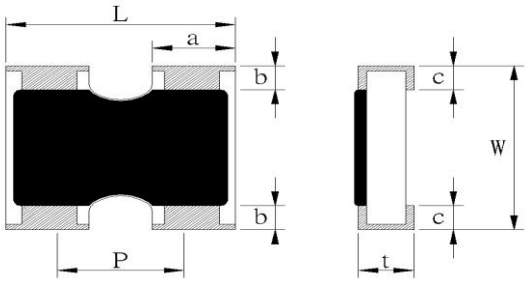
2. Construction , Dimensions , Schematic :

2.1 Construction :

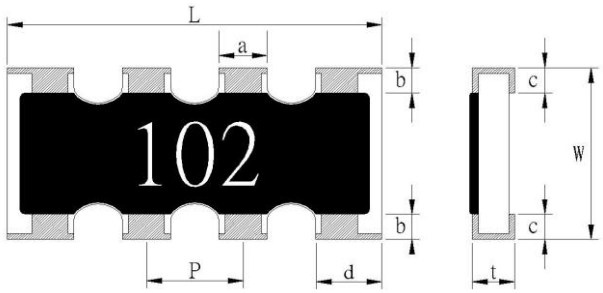


2.1.1 Chip Resistor Arrays :

CN22

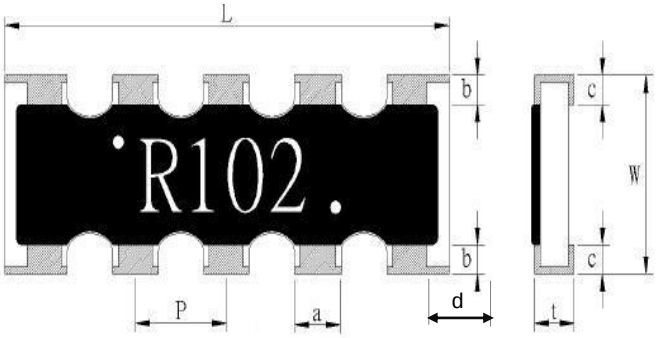


CN24/34



2.1.2 Chip Resistor Networks

CN35



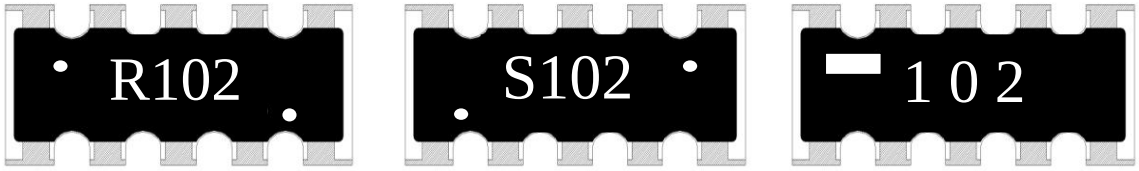
2.2 Dimension :

UNIT: mm

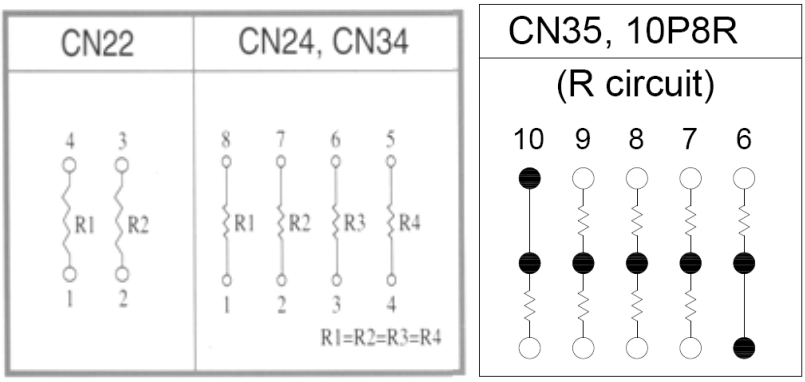
Type	L	W	t	P	a	b	c	d
CN22	1.0 ± 0.1	1.0 ± 0.1	0.35 ± 0.1	0.65 ± 0.1	0.33 ± 0.1	0.15 ± 0.1	0.25 ± 0.1	0.33 ± 0.1
CN24	2.0 ± 0.1	1.0 ± 0.1	0.4 ± 0.1	0.5 ± 0.05	0.3 ± 0.1	0.15 ± 0.1	0.25 ± 0.1	0.4 ± 0.1
CN34	3.2 ± 0.2	1.6 ± 0.15	0.5 ± 0.1	0.8 ± 0.05	0.45 ± 0.1	0.3 ± 0.2	0.3 ± 0.2	0.6 ± 0.1
CN35				0.64 ± 0.05	0.35 ± 0.1			0.5 ± 0.1

2.3 Schematic :

CN35



R TYPE **S TYPE** **D TYPE**



3. Type Designation:

3.1 Chip Resistor Arrays

CN	34	J	TN	103
Product Code CN : Chip Resistor Array	size Power Rating	Tolerance	Packaging	Nominal Resistance
	22-0402*2 24-0402*4 34-0603*4 35-0603*5	J-±5% G-±2% F-±1%	T- Paper Tape N : normal (RoHS Exclusion clause) W : Totally Lead free	3 digits E.G.: (E-24) 103 = 10KΩ 5R6 = 5.6Ω 0 = 0Ω 4 digits E.G. : (E-96) 1540 = 154Ω 43R2 = 43.2Ω

3.2 Chip Resistor Networks

CN	35	J	TN	R	103
Product Code CN : Chip Resistor Array	Size Power Rating	Tolerance	Packaging	Circuit	Resistance value
35-0603*5	J-±5%	T-Paper tape N : normal (RoHS Exclusion clause) W : Totally Lead free		R-10P8R 5.10 com	3 digits E.G. : (E-24)103 =10KΩ

Note :

TN : Lead-Free products packaged by paper tape.

4. Ratings & Characteristics :

Type	Power Rating at 70℃	Rating Voltage	Max. Working Voltage	Max. Over Load Voltage	Operating Temp. (℃)	Resistance Tolerance (%)	Resistance Range (Ω)	Temp Co-efficient PPM/℃
CN22	1/16W	Refer 4.2	25V	50V	-55 ∫ +125℃	±5% ±2% ±1%	10Ω~1MΩ	±250
CN24								
CN34			50V	100V			10Ω~1MΩ	±200
CN35			25V	50V		±5%	56Ω~100KΩ	±200
CN34			50V	100V			3.0Ω~9.1Ω	±400
CN22			25V	50V				±500
CN24								

0Ω THICK FILE CHIP RESISTOR ARRAYS			
Type	Rate Current	Max Overload Current	Resistance Range
CN Series	1A	2.5A	50mΩ MAX

4.1 Derating Curve :

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

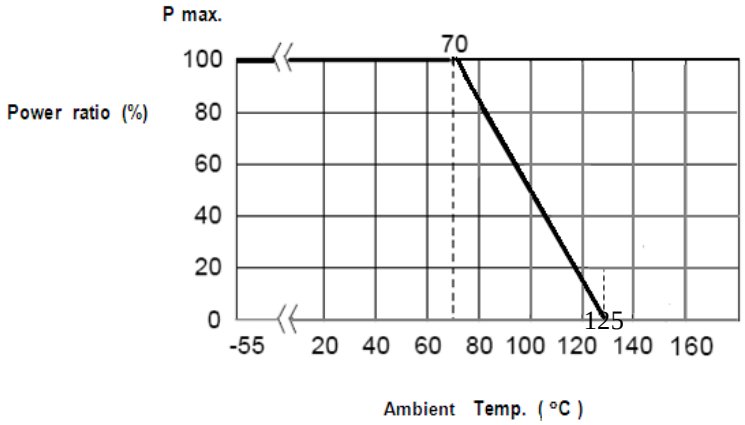


Figure 1

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 CN34JTN102 the rated voltage ?

CN34JTN102 P:1/16W ; R:102 = 1KΩ = 1000Ω

$E = \sqrt{0.0625(W) * 1000(\Omega)} = 7.9\ (V)$

5. Reliability Tests:

Test Items	Reference standard	Condition of Test	Test Limits (△R)
Temperature Coefficient of Resistance	IEC60115-1-4.8 JIS-C5201-1-4.8	-55～ +125 ℃	Refer 4.0
Short Time Overload	IEC60115-1-4.13 JIS-C5201-1-4.13	2.5 X rated voltage for 5 sec	±(2.0%+0.1Ω) 0Ω : 50 mΩ or less
Intermittent Overload	IEC60115-1-4.39 JIS-C5201-1-4.39	2.5X rated voltage or Max Overloading Voltage , 1 sec “ON” 25 sec “OFF” , 10000 cycles	±(5.0%+0.1Ω) 0Ω : 50mΩ or less
Load Life	IEC60115-1-4.25.1 JIS-C5201-1-4.25.1	1000 hours at rated voltage , 70℃ , 1.5hours “ON “, 0.5hour “OFF”	1%:±(1.0%+0.05Ω) 5%:±(3.0%+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℃, 90~95% RH 1.5hours “ON “, 0.5hour “OFF”	1%:±(1.0%+0.05Ω) 5%:±(3.0%+0.1Ω) 0Ω :100 mΩ or less
Rapid Change of Temperature	IEC60115-1-4.19 JIS-C5201-1-4.19	-55℃ (30 min.) / +155 ℃(30 min.) 5 cycles	1%:±(0.5%+0.05Ω) 5%:±(1.0%+0.05Ω) 0Ω :50 mΩ or less
Solderability	IEC60115-1-4.17 JIS-C5201-1-4.17	245±5℃ 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.
Core body	IEC60115-1-4.15 JIS-C5201-1-4.15	Pressure 1.0 kgf a R0.5 pressure rod for 10 sec	Without mechanical damage such as breaks. Electrical characteristics shall be satisfied
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.
Resistance to Solder Heat	IEC60115-1-4.18 JIS-C5201-1-4.18	270 ±5℃ solder , 10 ±1 sec dwell .	0.5%,1%:±(1.0%+0.05Ω) 2%,5%:±(2.0%+0.1Ω) 0Ω : 50mΩ or less

Note* : RCWV : Rated continuous working voltage .

6. Marking

6.1 ±2% & ±5%(E24) : CN24 / 34 / 35

Resistance value is expressed by 3 digits, the first two digits represent the significant figures of nominal resistance value in Ω, and the third digit represents exponent for base of 10.

E.G. $472 = 47 \times 10^2 = 4700\,\Omega = 4.7K\,\Omega$

6.2 ±1% (E96) : CN24 / 34

Resistance value is expressed by 4 digits, the first three digits represent the significant figures of nominal resistance value in Ω, and the fourth digit represents exponent for base of 10.

E.G. $4701 = 470 \times 10^1 = 4700\,\Omega = 4.7k\,\Omega$

6.3 CN24 / 34 / 35

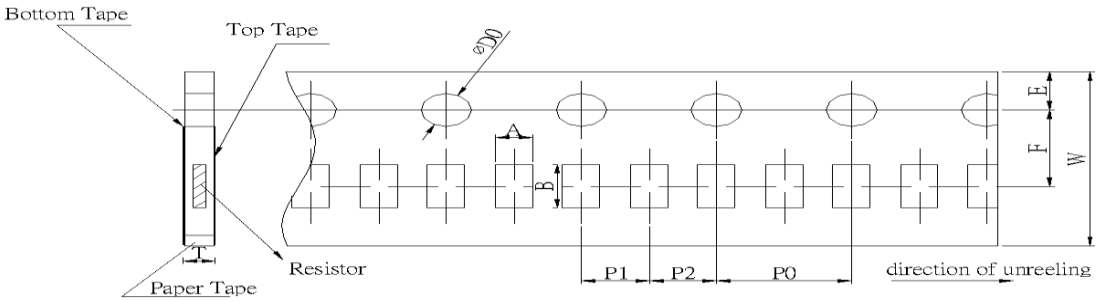
E.G. : 0 = 0Ω

6.4 No Marking for CN22

7. Taping & Reel

7.1 Taping Dimensions

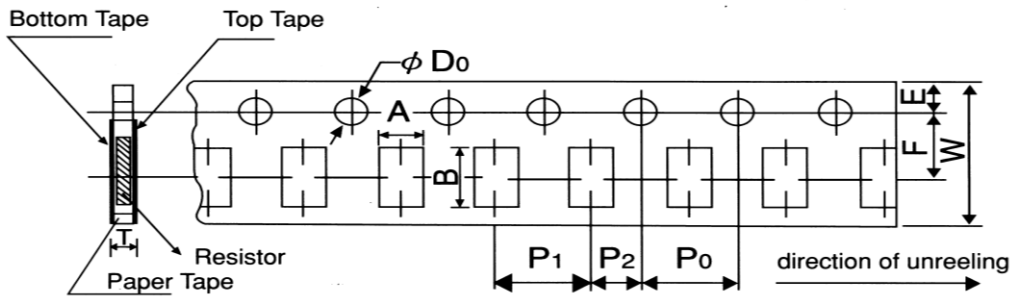
7.1.1 2 mm pitch paper



UNIT: mm

Type	A	B	W	F	E	P1	P2	P0	φ D0	T0
CN22	1.2±0.15	1.2±0.1	8.0±0.2	3.5±0.05	1.75±0.1	2.0±0.1	2.0±0.05	4.0±0.1	1.5 +0.1 -0	0.45±0.1
CN24		2.2±0.2								0.64±0.1

7.1.2 4 mm pitch paper

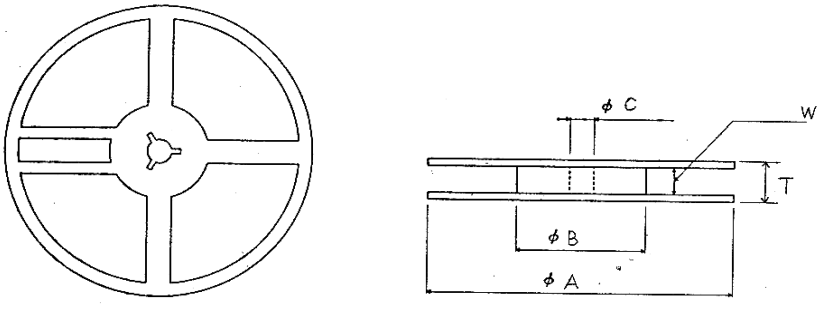


UNIT: mm

Type	A	B	W	F	E	P1	P2	P0	ϕ D0	T
CN34 , 35	2.0±0.15	3.6±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	1.5 +0.1 -0	0.84±0.1

Package Type	Paper Tape			
	4 mm pitch		2 mm pitch	
	178mm/R	250mm/R	178mm/R	250mm/R
CN22			10000	20000
CN24			10000	20000
CN34	5000	10000		
CN35	5000	10000		

7.2 Reel Specifications



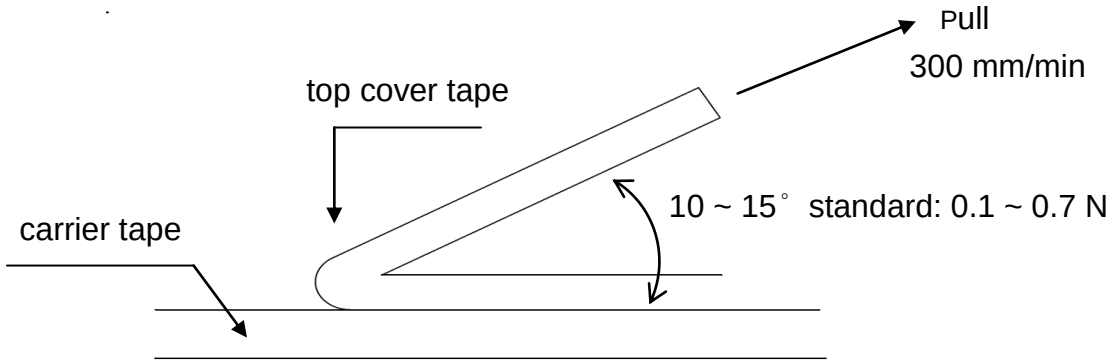
UNIT: mm

Type	ϕ A	ϕ B	ϕ C	W	T
CN 22/24 CN 34/35	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 "JIS-C5202"

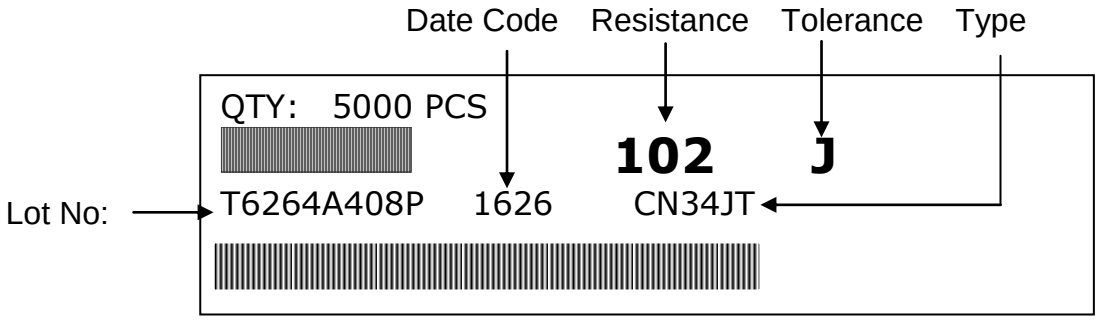
that is , 0.1 to 0.7 N at a peel-off speed of 300 mm / minute.



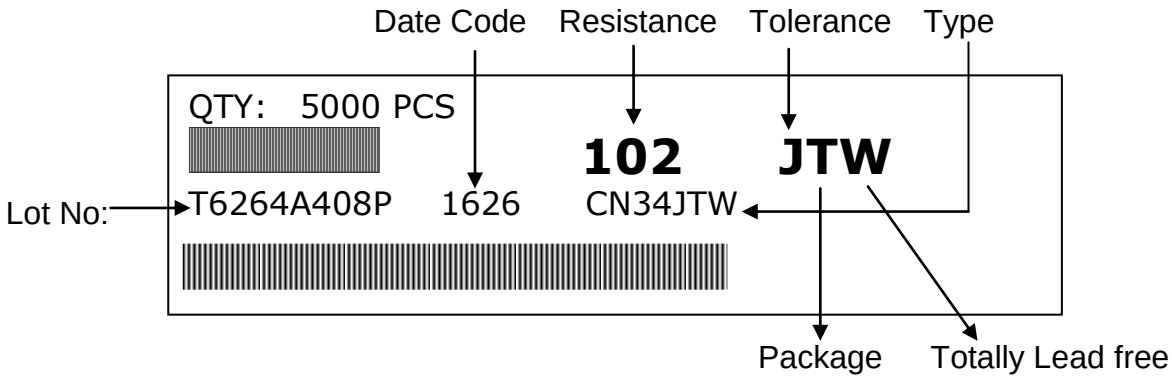
8. Label

8.1 Manufacture Label :

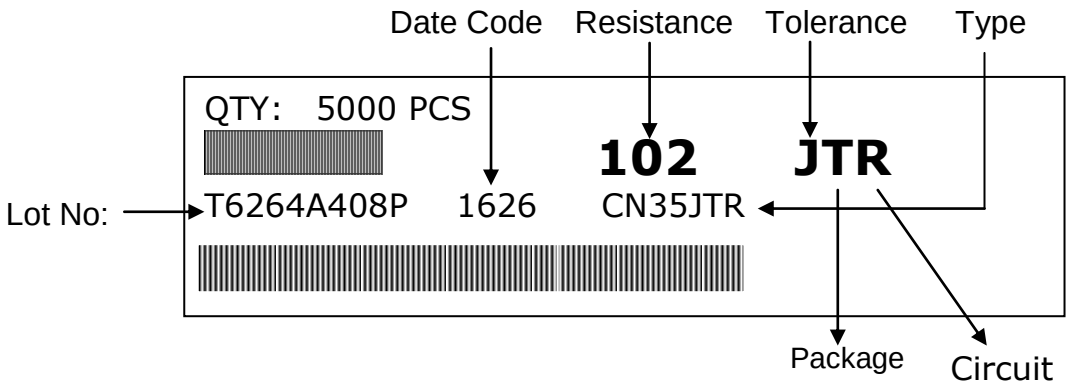
8.1.1 Chip Resistor Array : Normal (RoHS Exclusion clause)



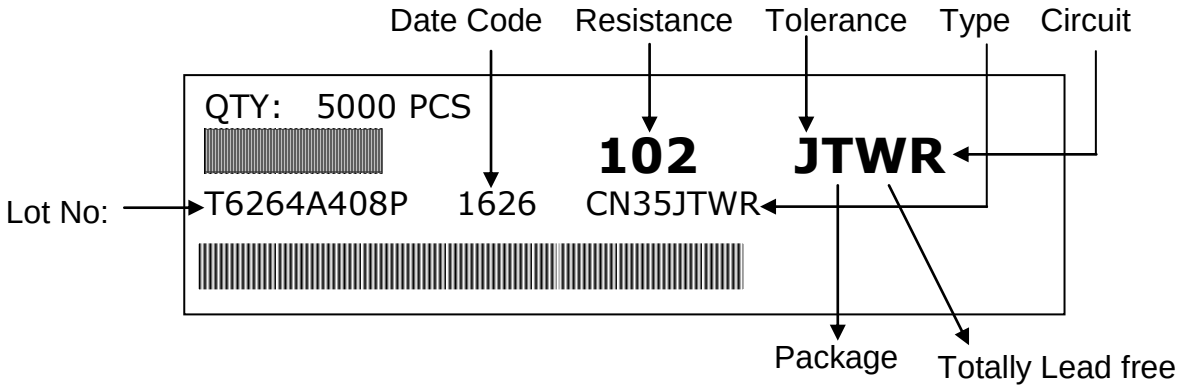
8.1.2 Chip Resistor Array : Totally Lead free



8.1.3 Chip Resistor Networks : Normal (RoHS Exclusion clause)

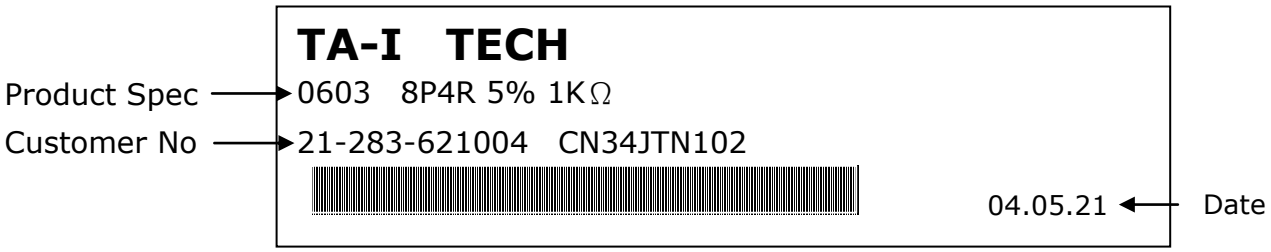


8.1.4 Chip Resistor Networks : Totally Lead free

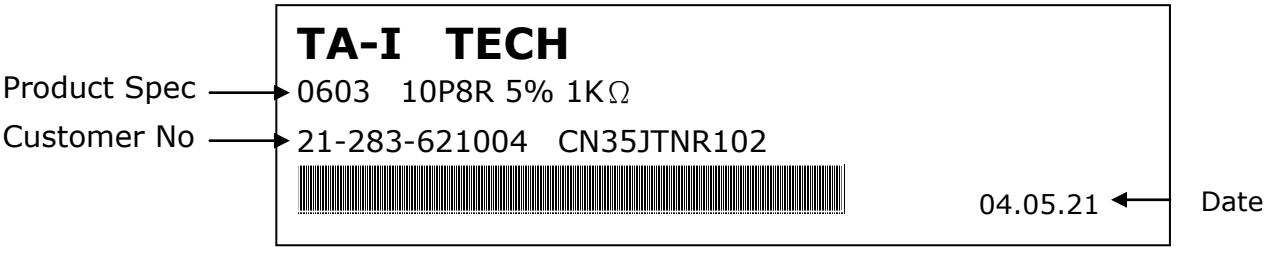


8.2. Customer Label (By customer request) :

8.2.1 Chip Resistor Array :

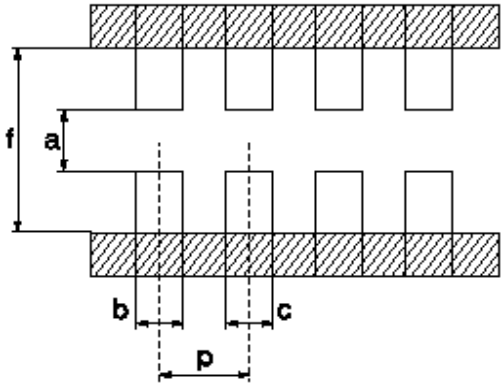


8.2.2 Chip Resistor Networks :



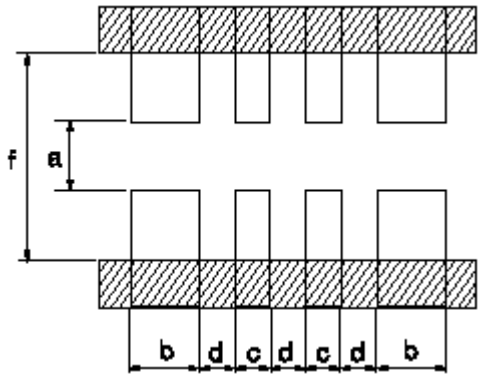
9. Recommended land patterns :

9.1 CN22, CN34,CN35



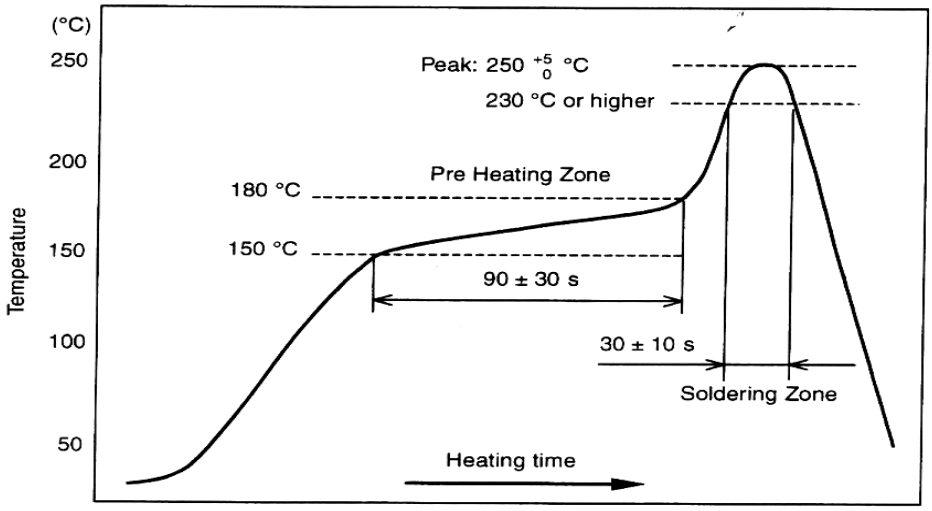
Type \ Land pattern Size		Dimension (mm)				
		a	b	c	p	f
CN	22	0.5	0.35~0.4	0.35~0.4	0.65	1.4~1.5
CN	34	0.7~0.9	0.4~0.5	0.4~0.5	0.8	2.2~2.6
CN	35	0.7~0.9	0.4~0.5	0.3~0.4	0.64	2.2~2.6

9.2 CN24



Type \ Land pattern Size		Dimension (mm)				
		a	b	c	d	f
CN	24	0.4	0.525	0.25	0.25	1.4

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



Peak : 250 $^{+5}_{-0}$℃ , 5 sec

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

Soldering Zone : 230℃ or higher , 30 ± 10 sec

11. Storage Conditions:

Temperature : 5 to 35 ℃

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

Associated companies :

(1) FORTUNE TASK RESISTOR FACTORY (China – Dongguan)
Tel : 86-769-8339-4790～3 Fax : 86-769-8339-4794

(2) TA-I TECHNOLOGY (DONGGUAN) CO., LTD. (China –Dongguan)
Tel : 86-769-8339-4790～3 Fax : 86-769-8339-4794

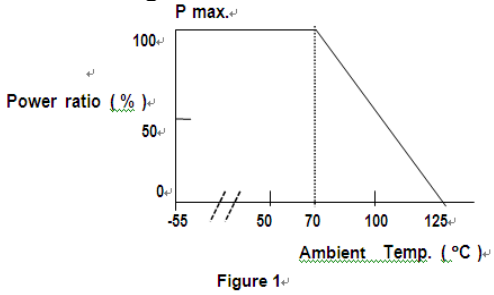
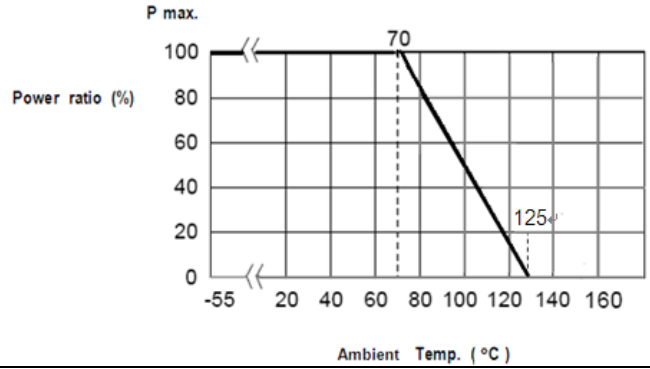
(3) TA-I TECHNOLOGY (SU ZHOU) CO., LTD. (China – Su Zhou)
Tel :86- 512-63457879 Fax : 86-512-63457869

(4) TAI OHM ELECTRONICS (M) SDN. BHD. (Malaysia – Penang)
Tel :604- 3900480 Fax : 604-3901481

(5) P.T.TAI ELECTRONICS Indonesia (Indonesia – Jakarta)
Tel : 62-21-89830123 Fax : 62-21-89830703

Revise record

Date	Content	Owner
Nov.25.2005	2. Construction , Dimensions , Schematic : Adding to “R”,”S”,”D” type 4. Ratings & Characteristics : Adding Rating Voltage	Hank Liu
Dec.12.2005	5. Reliability Tests: Intermittent Overload：3X rate power changed 2.5X rated voltage Whisker： -35±5℃/ 125±5℃, Keep 7 min changed -55℃(30 min.)/ +155℃(30 min.)	Hank Liu
Jul.06.2006	2.1 Conductor : Adding to (Lead-free or with lead) 5. Reliability Tests: Temperature Coefficient of Resistance : Refer 5.0 changed Refer4.0 8.1 Manufacture label : Series number 3 codes changed to 4 codes 14. Manufacturing Country & City: Adding TA-I TECHNOLOGY (DONGGUAN) CO., LTD	Vincent
Nov.13.2006	4. Ratings & Characteristics : Adding resistance range 5.1Ω – 9.1Ω for CN34 type 5% product .	Vincent
Mar.28.2007	2.2 Dimension CN28 b : from 0.15 ± 0.1 revise to 0.25 ± 0.1 CN35 p : from 0.6 ± 0.05 revise to 0.64 ± 0.05	Vincent
May.31.2007	**4. Ratings & Characteristics :** CN35 Resistance Range (Ω) : 10Ω ~1MΩ changed to **56Ω ~1MΩ**	Vincent
Aug.23.2007	Adding resistance range CN32 / CN22 / CN24 | 1/16W | Refer 4.2 | 50V / 25V | 100V / 50V | -55 ∫ +125℃ | ±5% | 3.0Ω~9.1Ω | ±400 / ±500	Vincent
June.19.2008	1. Reliability test : To delete special customer’s standard: SS-00254 standard. 2.Resistance range of CN35 To correct resistance range from1MΩ 56~1MΩ **to** 56~100KΩ.	Vincent
March.10.2011	Reliability test : Reference standard from JIS-5202 change to IEC60115 & JIS-C5201	Kate
June 27.2011	Adding Dimension “d” CN24/CN28: 0.4 ± 0.1mm CN34: 0.6 ± 0.1mm CN35: 0.5 ± 0.1mm	Kate

June 19.2012	4.1 Derating Curve :  Figure 1 To exchange  	kate
July 25.2012	Adding Halogen-free words	kate
Nov 07.2012	6. Marking： 6.2 ±1%(E96)： From 3 digits make corrections 4 digits	ken
JUNE.27.2016	1.Packaging expression : N：normal (RoHS Exclusion clause) W：Totally Lead free 2.Delete lead free words 3.Delete CN35 S/D Circuit	ken
April 06.2020	Adding 6.3 CN24~35 0 = 0Ω	ken
Aug 06.2020	1. 3.1 Nominal Resistance Adding 0 = 0Ω 2. Delete CN28 series	ken
Nov 25.2021	Remove CN32	ken

单击下面可查看定价，库存，交付和生命周期等信息

>>TA-I(大毅)