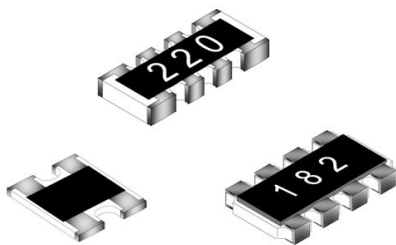




STA- Series Anti-Sulfur Array Chip
Resistor Product Specifications

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■ Anti-Sulfur Array Chip Resistor — STA Series



■ Application

- Industrial Control, System Sensor, Netcom Station
- Navigation Equipment
- Measuring Instrument
- Telecommunication Equipment, Railway Semaphore System

■ Features

- Small Size and Light Weight
- Reliability, High Quality
- Excellent Resistance to Vulcanization (ASTM-B-809-95 & EIA-977 Specification)

■ Parts Number Explanation

Example:

STA	024R	J	10R0	Q	10	Z
Product Type	Size (Inch)	Resistor Tolerance	Resistor Value	Package	Quantity	Optional
STA	022R(0402*2) 024R(0402*4) 034R(0603*4) 064R(1206*4)	F : ±1% J : ±5%	1R=1R00 10R=10R0 100R=100R 1K=1K00 1M=1M00	P : Paper Taping (034R) Q : Paper Taping (022R、024R) E : Embossed Taping	04 : 4000PCS 05 : 5000PCS 10 : 10000PCS	Z : 60℃ A : 105℃ (With AEC-Q200 compatible)



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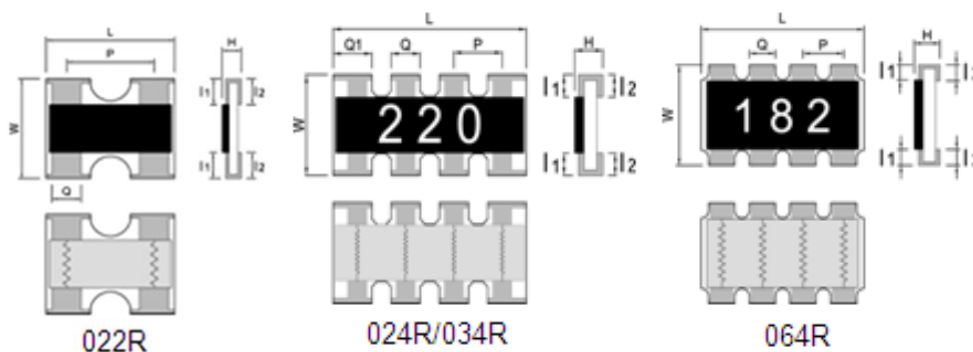
Standard Electrical Specifications

Type \ Item	Rating Power at 70℃	Max Working Voltage	Max Overload Voltage	T.C.R. (PPM/℃)	Resistance Range
					F(±1%)、J(±5%)
STA022R	0.063 W	25V	50V	±400	$1\Omega \leq R < 10\Omega$
				±200	$10\Omega \leq R \leq 1M\Omega$
STA024R	0.063 W	25V	50V	±400	$1\Omega \leq R < 10\Omega$
				±200	$10\Omega \leq R \leq 1M\Omega$
STA034R	0.1 W	50V	100V	±400	$1\Omega \leq R < 10\Omega$
				±200	$10\Omega \leq R \leq 1M\Omega$
STA064R	0.25 W	200V	400V	±400	$1\Omega \leq R < 10\Omega$
				±200	$10\Omega \leq R \leq 1M\Omega$

- For non-standard parts, please contact our sales dept.
- Operating Temperature Range : -55℃ ~ +155℃.

Type	022R	024R	034R	064R
Jumper Rated Current	1A			2A

Type Dimension



Dimension

Unit: mm

Type	L	W	H	I ₁	I ₂	P	Q	Q1
STA022R	1.00±0.10	1.00±0.10	0.33±0.05	0.30±0.15	0.25±0.10	0.67±0.10	0.34±0.10	---
STA024R	2.00±0.10	1.00±0.10	0.40±0.10	0.30±0.15	0.20±0.10	0.50±0.10	0.30±0.10	0.43±0.10
STA034R	3.20±0.20	1.60±0.15	0.50±0.10	0.40±0.20	0.30±0.20	0.80±0.20	0.50±0.15	0.61±0.10
STA064R	5.10±0.20	3.10±0.20	0.55±0.15	0.55±0.20	0.55±0.15	1.30±0.20	0.90±0.10	---

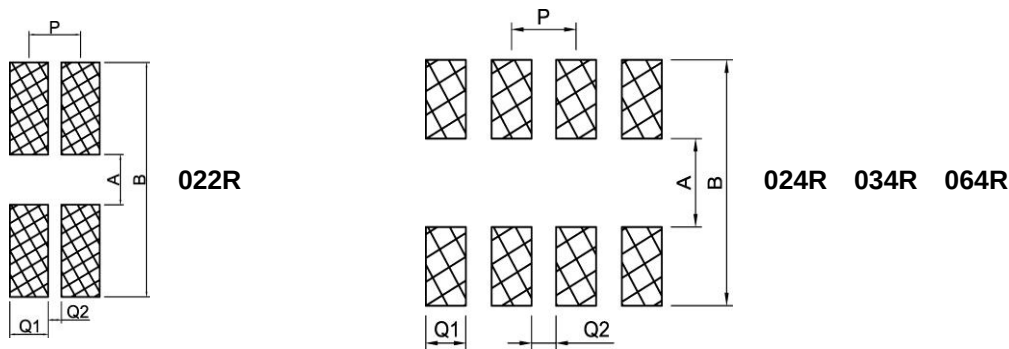


STA- Series Anti-Sulfur Array Chip
Resistor Product Specifications

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General Information

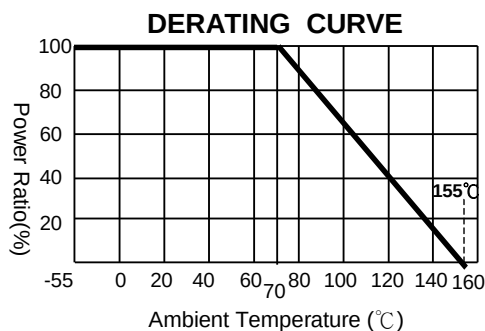
Recommend Land Pattern Design (For Reflow Soldering)



Dimension		Unit: mm			
Item	Type	022R	024R	034R	064R
A		0.50	0.50	1.00	2.00
B		2.00	2.00	2.60	4.75
P		0.67	0.50	0.80	1.30
Q1		0.33	0.28	0.40	0.90
Q2		0.34	0.22	0.40	0.375

Performance Characteristics

Power Derating Curve



Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70°C .
For operation at ambient temperature in excess of 70°C , the load should be derated in accordance with figure of derating Curve.

Voltage Rating or Current Rating

Resistance Range: $\geq 1\Omega$
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 formula as following:

$$E(RCWV)=\sqrt{P \times R}$$

E=Rated voltage(V)
P=Power rating(W)
R=Nominal resistance(Ω)



STA- Series Anti-Sulfur Array Chip Resistor Product Specifications

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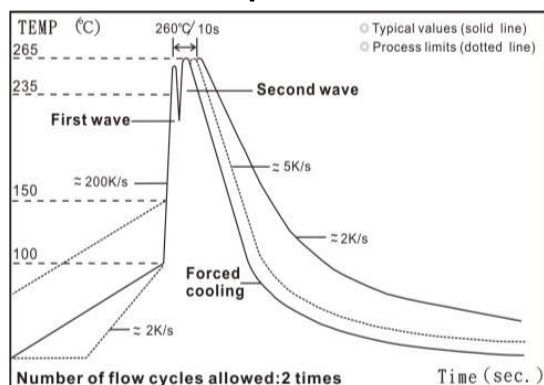
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■ Reliability Test and Requirement

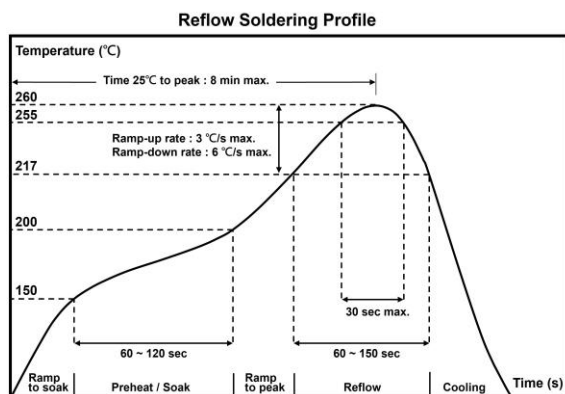
Test Item	Test Method	Procedure	Requirements
Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	-55°C or +155°C, 25°C is the reference temperature	Refer to Ratings
Short Time Overload	JIS C 5201-1 clause 4.13	General : 2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds. High Power : 2.5 times RCWV or Max. Overload voltage whichever is less for 2 seconds.	1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(2.0\%+0.10\Omega)$
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	260 $\pm$ 5°C for 30 seconds.	Individual leaching area $\leq$ 5% Total leaching area $\leq$ 10%
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60115-1 4.18	260 $\pm$ 5°C for 10 seconds.	1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.05\Omega)$
Rapid Change of Temperature	JIS-C-5201-1 4.19 IEC-60115-1 4.19	-55°C to +155°C, 5 cycles	1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(1.0\%+0.10\Omega)$
Resistance to Solvent	JIS-C-5201-1 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25°C for 60 secs. Then the resistor is left in the room for 48 hrs.	1% : $\pm(0.5\%+0.05\Omega)$ 5% : $\pm(0.5\%+0.05\Omega)$
Damp Heat with Load	JIS-C-5201-1 4.24 IEC-60115-1 4.24	40 $\pm$ 2°C, 90~95% R.H. RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" .	1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(2.0\%+0.05\Omega)$
Load Life (Endurance)	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1	70 $\pm$ 2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF" .	1% : $\pm(1.0\%+0.05\Omega)$ 5% : $\pm(3.0\%+0.10\Omega)$
Insulation Resistance	JIS-C-5201-1 4.6 IEC-60115-1 4.6	Apply 100VDC for 1 minute.	$\geq$ 10G Ω
Sulfur Test	ASTM-B-809-95 EIA-977	60 $\pm$ 2°C, no rating power for 1000 hrs	ΔR : $\pm(1.0\%+0.05\Omega)$
		105 $\pm$ 2°C, no rating power for 1000 hrs	ΔR : $\pm(2.0\%+0.05\Omega)$
Bending Strength	JIS-C-5201-1 4.33 IEC-60115-1 4.33	Bending once for 5 seconds D : 022R、024R、034R=5mm 064R=3mm	1% and below : $\pm(1.0\%+0.05\Omega)$ 2%、5% : $\pm(1.0\%+0.05\Omega)$

■ Recommended Customer Soldering Parameters

■ Wave solder Temperature condition



Solder reflow Temperature condition



■ Rework temperature (hot air equipment) : 350°C, 3~5seconds

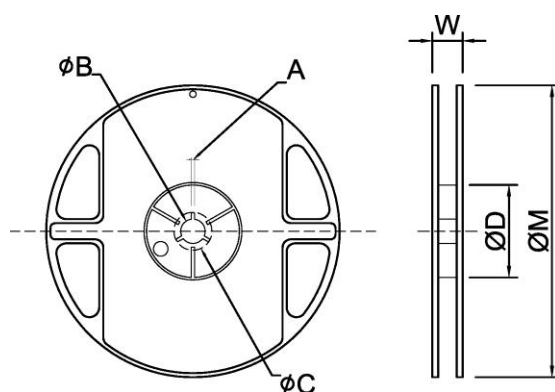
Recommended reflow methods

IR, vapor phase oven, hot air oven

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Appendix For SMD Chip Resistor

Packaging Information



Dimension

Unit: mm

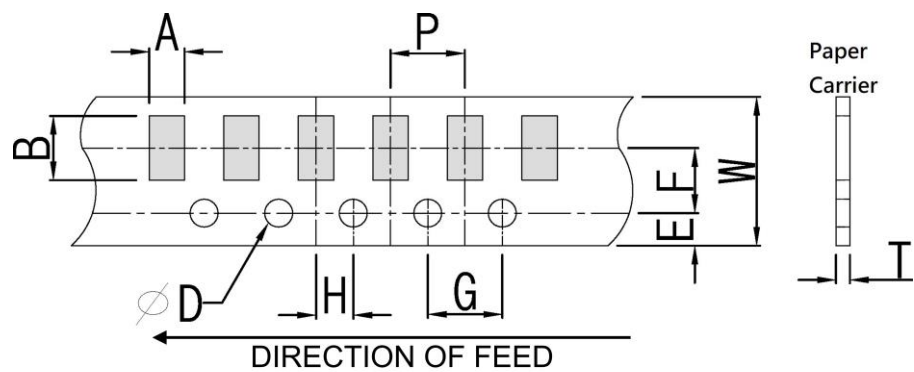
Type	Size		A	ΦB	ΦC	ΦD	W	ΦM
022R/024R	7"	10K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
034R	7"	5K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
064R	7"	4K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0



STA- Series Anti-Sulfur Array Chip
Resistor Product Specifications

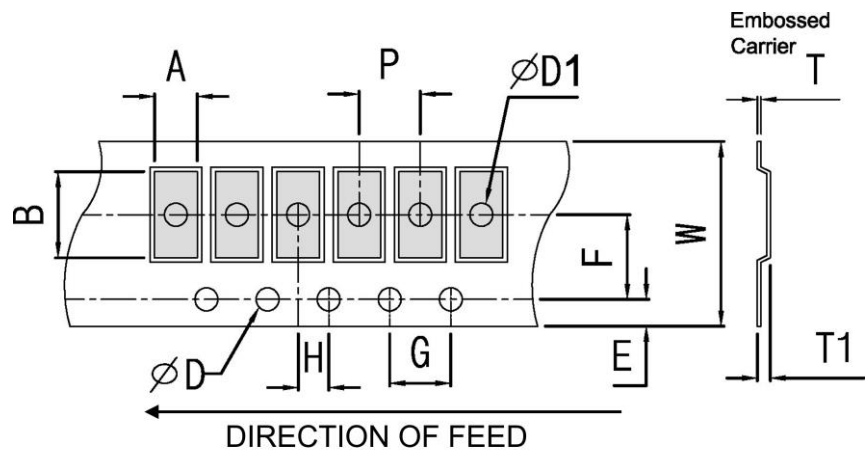
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Tapping Specification



Dimension Unit: mm

Packaging	Type	A	B	W	E	F	G	H	T	ΦD	P
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±0.1	1.50 +0.10 -0	2.0±0.1
	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±0.1		
	034R	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±0.1		4.0±0.1

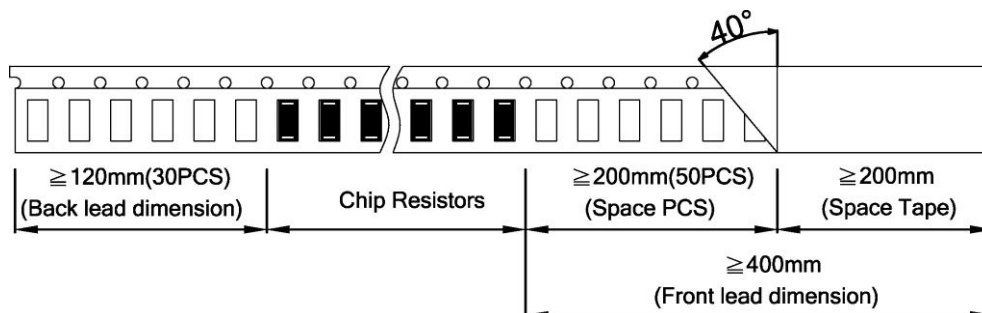


Dimension Unit: mm

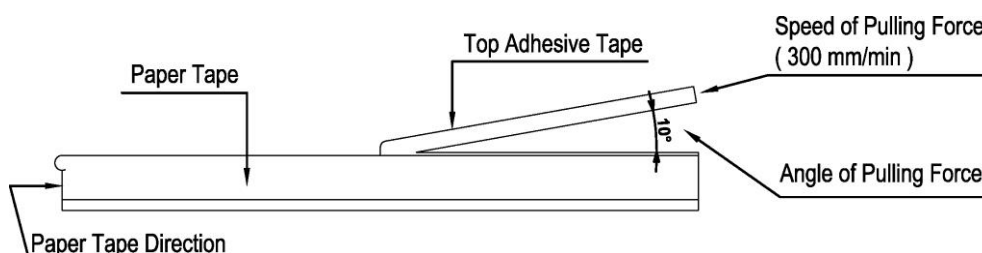
Packaging	Type	A	B	W	E	F	G	H	T	ΦD	ΦD1	T1	P
Embossed Type	064R	3.55±0.2	5.55±0.2	12±0.3	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.25±0.1	1.50 +0.10 -0	1.50 +0.25 -0	0.85±0.15	4.0±0.1

■ Packing Material Data/Storage Data

■ Front & Back Lead Dimension

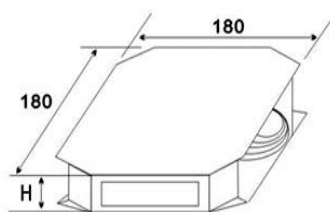


■ Top Adhesive Peel Off Strength : 10~70g

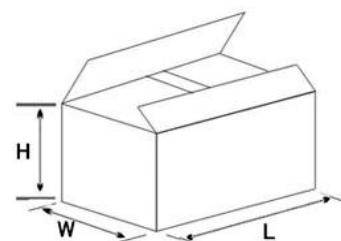


■ Package

Inner Box Size	
Reel	Size H(mm)
1	13
2	24
3	36
5	60
10	113



External Box Size			
Contain (Kpcs)	Length (mm)	Width (mm)	Height (mm)
25K	180	180	60
50K	180	180	110
150K	430	200	200
300K	400	400	200



■ Storage Data :

Storage time at the environment temp: $25 \pm 5^{\circ}\text{C}$ & humidity: $60 \pm 20\%$ is valid for two years.

■ Product Testing Method:

Our products are tested with our company's tapping & testing equipments by using four-feet probe to touch at the back of both electrodes. Supposed different testing points or methods are requested, please advise beforehand and customized-made production is available.