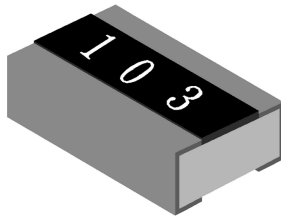


Thick Film Chip Resistor— CR Series (Wide Terminal Type)



Application

- Electronics
- Navigation equipment
- Power supply etc. equipment.
- Indoor lighting, Central door locking,

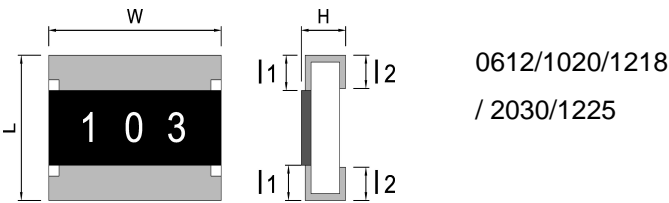
Features

- Small size and light weight
- Reduction of assembly costs and matching with placement machines
- Reliability, high quality and fast delivery
- Chip resistor of the wide terminal type.

Standard & High Power Electrical Specifications

Type \ Item	Rated Power at 70 °C	Max Working Voltage	Max Overload Voltage	T.C.R. (PPM/°C)	Resistance Range	
					F(±1%)	J(±5%)
CR0612	0.75 W	200V	400V	±400	1 Ω~9.9 Ω	1 Ω~9.9 Ω
				±200	-	10 Ω~10M Ω
				±100	10 Ω~10M Ω	-
CR1020	1 W	200V	400V	±400	1 Ω~9.9 Ω	1 Ω~9.9 Ω
				±200	-	10 Ω~10M Ω
				±100	10 Ω~10M Ω	-
CR1218	1 W	200V	400V	±400	1 Ω~9.9 Ω	1 Ω~9.9 Ω
				±200	-	10 Ω~10M Ω
				±100	10 Ω~10M Ω	-
CR2030	3W	200V	400V	±100	1 Ω~1K Ω	1 Ω~1K Ω
CR1225	2W	200V	400V	±400	1 Ω~9.9 Ω	1 Ω~9.9 Ω
				±200	-	10 Ω~10M Ω
				±100	10 Ω~10M Ω	-

Type Dimension- Chip Resistor



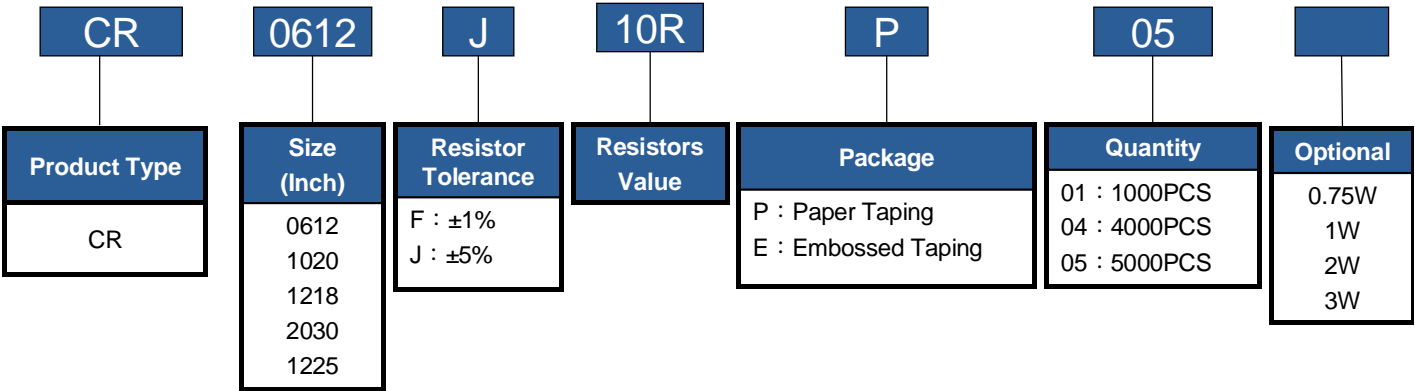
Dimension

Unit: mm

TYPE	L	W	H	l ₁	l ₂
CR0612	1.60 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.30 ± 0.20	0.50 ± 0.20
CR1020	2.50 ± 0.20	5.00 ± 0.20	0.55 ± 0.10	0.40 ± 0.20	0.75 ± 0.20
CR1218	3.10 ± 0.10	4.60 ± 0.10	0.55 ± 0.05	0.40 ± 0.20	0.50 ± 0.20
CR2030	5.10 ± 0.10	7.60 ± 0.10	1.20 ± 0.10	0.80 ± 0.20	0.80 ± 0.20
CR1225	3.20 ± 0.20	6.30 ± 0.20	0.55 ± 0.10	0.40 ± 0.20	0.75 ± 0.20

Parts Number Explanation

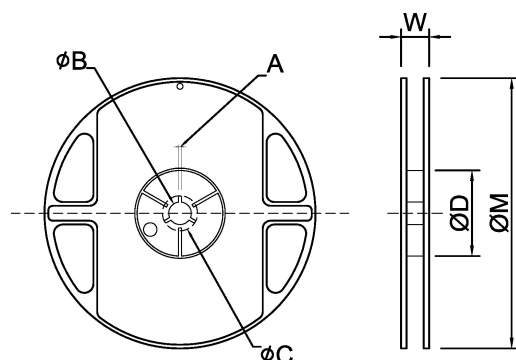
Example:



Appendix For SMD Chip Resistor

● Packaging Information

◆ For Wide Terminal Type Series

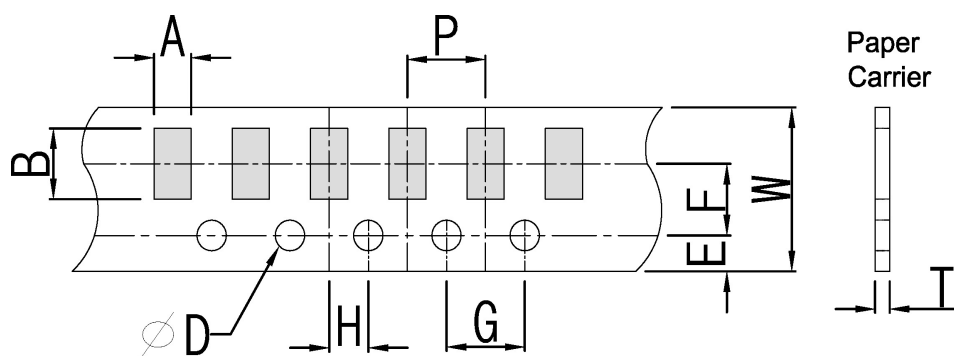


■ Dimension

Unit: mm

TYPE	SIZE		A	φB	φC	φD	W	φM
0612	7"	5K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
1020	7"	4K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
1218	7"	4K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
2030	7"	1K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	19.0±2.0	178±2.0
1225	7"	4K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0

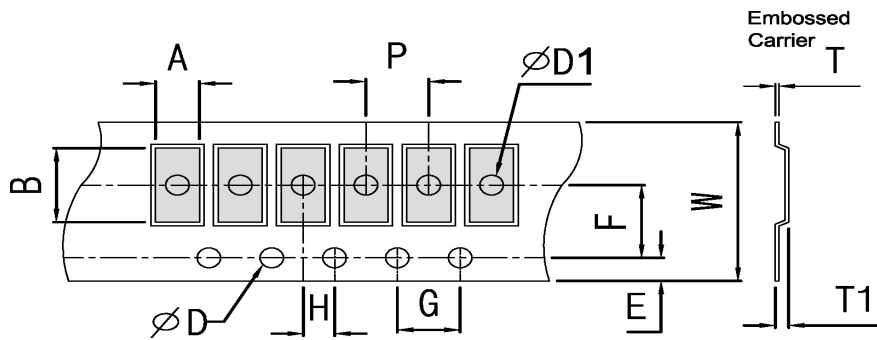
■ Tapping Specification



■ Dimension

Unit: mm

Packaging	Type	A	B	W	E	F	G	H	T	φD	P
Paper Type	0612	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	1.50 ^{+0.10} ₋₀	4.0±0.1



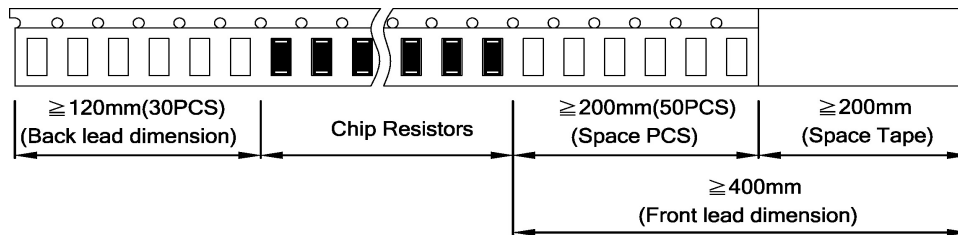
Dimension

Unit: mm

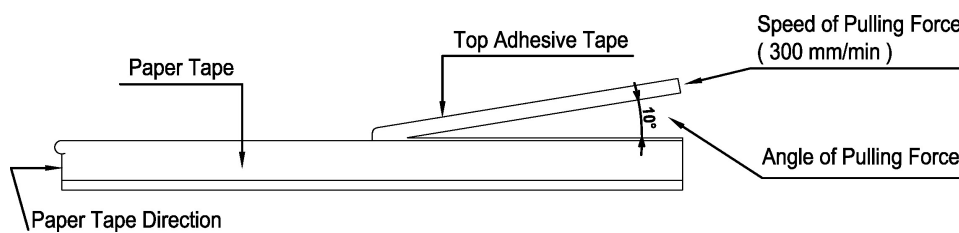
Packaging	Type	A	B	W	E	F	G	H	T	ϕD	$\phi D1$	T1	P
Embossed Type	1020	2.80±0.2	5.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1	1.50 ^{+0.10} ₋₀	1.50±0.1	0.85±0.15	4.0±0.1
	1218	3.30±0.2	4.60±0.2	12±0.1	1.75±0.1	5.5±0.05	4.0±0.1	2.0±0.05	0.23±0.1		1.50±0.1	0.85±0.15	4.0±0.1
	2030	5.50±0.2	7.90±0.2	16±0.1	1.75±0.1	7.5±0.05	4.0±0.1	2.0±0.05	0.25±0.1		1.50±0.1	1.30±0.1	8.0±0.2
	1225	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±0.1		1.50±0.1	0.85±0.15	4.0±0.1

Packing Material Data / Storage Data

Front & Back Lead Dimension

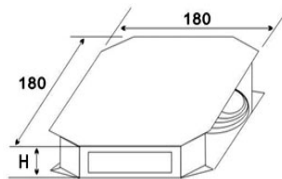


Top Adhesive Peel Off Strength : 10~70g

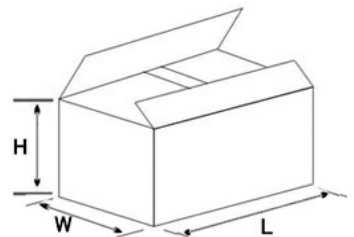


Package

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±5°C & humidity: 60±20% is valid for one year from the date of delivery.

● Reliability Test and Requirement

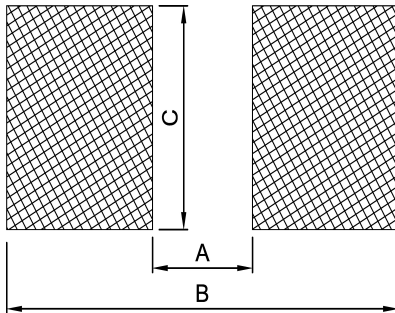
◆ For Wide Terminal Type Series

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	5 times rated power or Max. Overload voltage whichever is less for 2 seconds.	$\pm(1.0\%+0.05\Omega)$
Soldering Heat	JIS C 5201-1 clause 4.18	260 \pm 5°C for 10 seconds.	$\pm(1.0\%+0.05\Omega)$
Temperature Cycling	JIS C 5201-1 clause 4.19	-55°C to +155°C, 5 cycles	$\pm(1.0\%+0.05\Omega)$
Load Life in Humidity	JIS C 5201-1 clause 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 hr "OFF" .	$\pm(5.0\%+0.05\Omega)$
Load Life (Endurance)	JIS C 5201-1 clause 4.25	70 \pm 2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	$\pm(5.0\%+0.10\Omega)$
Terminal Bending Strength	JIS C 5201-1 clause 4.33	Bending once for 5 seconds D : 0612 = 3mm 1020 = 1mm 1218、2030 = 2mm 1225 = 1mm	$\pm(1.0\%+0.05\Omega)$
Insulation Resistance	JIS C 5201-1 Clause 4.6	100V for 1 minute.	$R\geq 10G\Omega$

● General Information

■ Recommend Land Pattern Design (For Reflow Soldering)

◆ For Wide Terminal Type Series



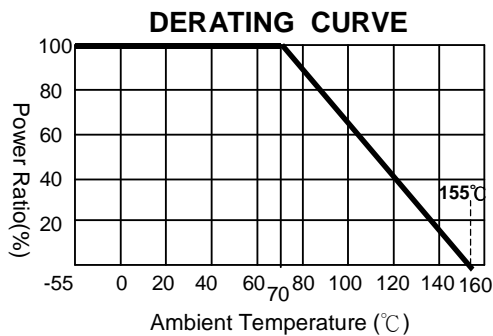
■ Dimension

Unit: mm

Type Item	0612	1020	1218	2030	1225
A	0.60	0.75	2.04	3.50	0.85
B	2.90	3.40	4.24	7.50	3.70
C	3.20	5.00	4.80	7.80	6.40

■ 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)

■ Operation and Storage Temperature

	MIN	MAX
Operation temperature	-55℃	70℃
Storage temperature	20℃	30℃
Storage humidity	40%	80%

■ Equipments Applicable:

Our company's products are produced under low temperature processing applicable to IR reflow surface mounting devices. It is comparatively not applicable to wave soldering which will possibly cause the risk ablating the element protection layer and the front conductor and cause the drift of the resistance value and ablation of the markings.

■ 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.