



APPROVAL SHEET

Product Name : Thick Film High Power Chip Resistor
_Long Terminal
Part No. : TCW
Description : Size 0612/1020/1218/1225/2030

For more contact information, please refer to our website: www.rideetech.com



Thick Film High Power Chip Resistor_Long Terminal –TCW Series

■ Applications

- Heating, Ventilating and Air conditioning
- Indoor lighting, Central door locking, Wiper module
- Navigation equipment, TPMS



■ Features

- Small size available
- CCD visual quality inspection
- Reliability, high quality

■ Part Number Explanation

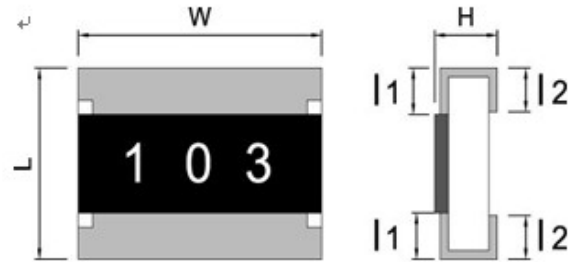
TCW	0612	F	10R0	T	S
Product	Size (Inch)	Tolerance	Resistance	Packaging	Functional
Thick Film High Power Chip Resistor _Long Terminal	0612 1020 1218 1225 2030	F = $\pm 1\%$ J = $\pm 5\%$	1R00=1 Ω 10R0=10 Ω 100R :100 Ω 1K00 :1K Ω 1M00=1M Ω	T=Tape & Reel	S= Standard

■ Standard Electrical Specifications

Type	Power Rating at 70°C	Max. RCWV	Max Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (TCR; ppm/°C)	Resistance Range
TCW0612	0.75 W	200V	400V	±1、±5	±400	1Ω≤R<10Ω
					±100	10Ω≤R≤10MΩ
TCW1020	1 W				±400	1Ω≤R<10Ω
					±100	10Ω≤R≤10MΩ
TCW1218	1 W				±400	1Ω≤R<10Ω
					±100	10Ω≤R≤10MΩ
TCW1225	2W				±400	1Ω≤R<10Ω
					±100	10Ω≤R≤10MΩ
TCW2030	3W				±400	1Ω≤R<10Ω
					±100	10Ω≤R≤10MΩ

- Functional code: S
- Beyond the above specification also can meet the special requirements. For detail questions, please contact us freely.

■ Dimension

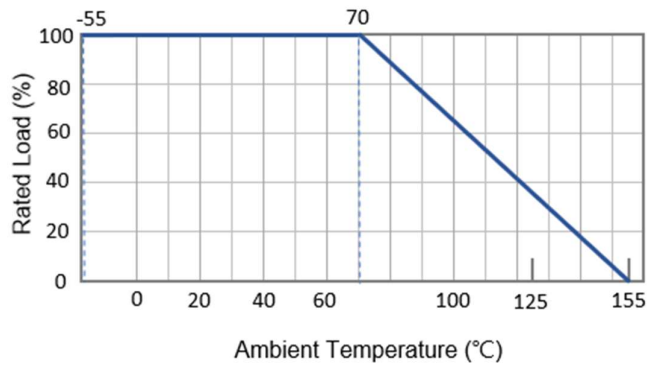


Unit: mm

Size	L	W	l_1	l_2	H
TCW0612	1.60 ± 0.20	3.20 ± 0.20	0.30 ± 0.20	0.50 ± 0.20	0.55 ± 0.10
TCW1020	2.50 ± 0.20	5.00 ± 0.20	0.40 ± 0.20	0.75 ± 0.20	0.55 ± 0.10
TCW1218	3.10 ± 0.10	4.60 ± 0.10	0.40 ± 0.20	0.50 ± 0.20	0.55 ± 0.05
TCW1225	3.20 ± 0.20	6.50 ± 0.20	0.40 ± 0.20	0.75 ± 0.20	0.55 ± 0.20
TCW2030	5.10 ± 0.10	7.60 ± 0.10	0.80 ± 0.20	0.80 ± 0.20	1.20 ± 0.10

Derating Curve

Operating Temperature Range: -55°C to +155°C



Voltage Rating or Current Rating

The direct or alternating voltage for the rated power can be calculated from the following formula but must not exceed the maximum voltage.

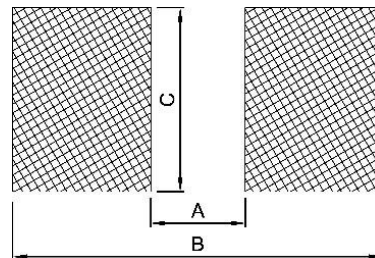
$$V = \sqrt{P \times R}$$

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

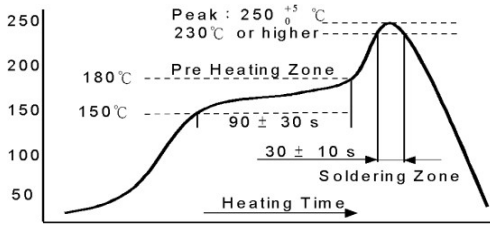
Recommend Land Pattern Design

Type	A	B	C
TCW0612	0.60	2.90	3.20
TCW1020	0.75	3.40	5.00
TCW1218	2.04	4.24	4.80
TCW1225	0.85	3.70	7.50
TCW2030	3.50	7.50	7.80

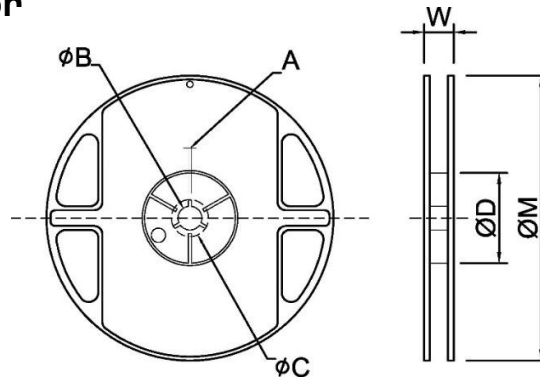
Unit:mm



■ 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	2.5 times RCWV or Max. Overload voltage whichever is less for 5 seconds.	±(2.0%+0.1Ω)
IR Reflow	Sony SS-00254	 The graph shows a temperature profile for IR reflow. The y-axis represents temperature in °C (50 to 250), and the x-axis represents heating time. Key points include: a pre-heating zone starting at 150°C, a peak temperature of 250°C ±5°C (or 230°C or higher), and a soldering zone with a duration of 30 ± 10 seconds. The total heating time is 90 ± 30 seconds.	±(1.0%+0.05Ω)
Leaching	Sony SS-00254-9	260±5°C for 30 seconds.	>95% Coverage
Soldering Heat	JIS C 5201-1 clause 4.18	260±5°C for 10 seconds.	±(1.0%+0.05Ω)
Temperature Cycling	JIS C 5201-1 clause 4.19	-55°C to +155°C, 5 cycles	±(1.0%+0.10Ω)
Electric Iron	Sony SS-00254-5	Preheating temperature : 350±10°C Electric iron preheating time : 3+1/-0 sec	±(1.0%+0.005Ω)
Resistance to Solvent	JIS C 5201-1 clause 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.	±(1.0%+0.05Ω)
Load Life in Humidity	JIS C 5201-1 clause 4.24	40±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" .	±(2.0%+0.05Ω)
Load Life (Endurance)	JIS C 5201-1 clause 4.25	70±2°C, RCWV or Max. working voltage whichever is less for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF" .	±(3.0%+0.10Ω)
Insulation Resistance	JIS C 5201-1 clause 4.6	100V for 1 minute.	≥10GΩ
Terminal Bending Strength	JIS C 5201-1 clause 4.33	Bending once for 5 seconds D : 0612、1020、1218、1225、2030= 2mm	±(1.0%+0.05Ω)

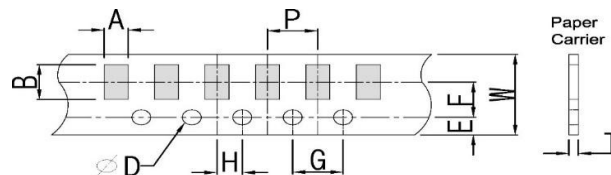
■ Packaging Information



Unit:mm

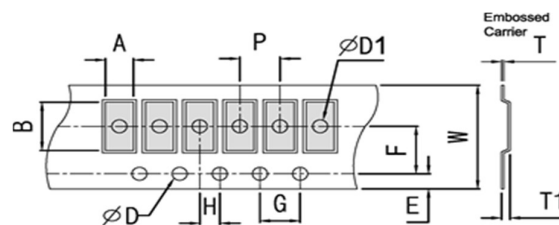
TYPE	SIZE	A	ψB	ψC	ψD	W	ψM
0612	5Kpcs/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
1020 1218 1225	4Kpcs/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
2030	1Kpcs/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	19.0±2.0	178±2.0

■ Tapping Specification



Unit:mm

Type	A	B	W	E	F	G	H	T	ψD	P
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



Unit:mm

Type	A	B	W	E	F	G	H	T	ψD	ψD1	T1	P
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
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	
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	
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



■ Marking

E24/E96 $\pm 1\%$: 4 digits marking

Example:

Resistance	68m Ω
Digits Code	R068

E24 $\pm 5\%$: 3 digits marking

Example:

Resistance	1 Ω
Digits Code	1R0