Data Sheet

Customer：	
Product :	Four Terminal High Precision Current Sense Resistors – 4T Series
Size:	1206/2010
Issued Date:	1-Jul-24
Edition :	REV. A3

RoHS Compliant

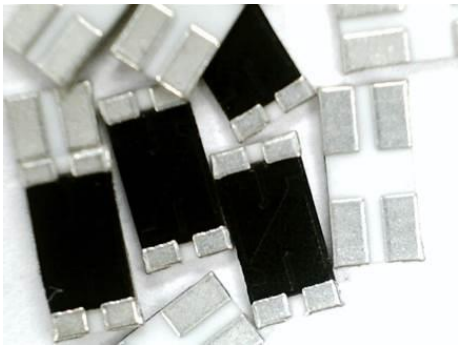
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1-Jul-24	1-Jul-24	1-Jul-24		
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Four Terminal High Precision Current Sense Resistors (4T Series)



Features

- SMD Type designed for automatic insertion
- High power rating in small size
- Metal foil construction ensures high reliability and performance with very low and stable TCR
- Design for current sense circuits in power electronic systems
- Industry standard sizes

Applications

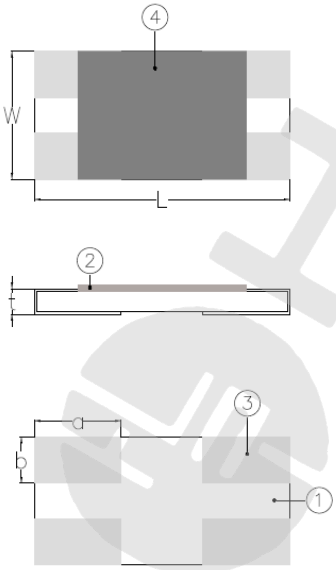
- Power Management Applications
- Switching Power Supply
- Over Current Protection in Audio Applications
- Voltage Regulation Module (VRM)
- DC-DC Converter, Battery Pack, Charger, Adaptor
- Disk Driver
- Portable Devices (PDA, Cell Phone)

Schematic diagram

- V = voltage terminal
- I = current terminal



Construction



①	Alumina Substrate	④	Protection coat
②	Resistor Layer		
③	Electrode		

Dimensions

Unit: mm

Type	Size (Inch)	L	W	T	a	b	Weight (g) (1000pcs)
4T06	1206	3.0±0.2	1.6±0.2	0.5±0.15	1.0±0.2	0.55±0.2	10
4T10	2010	5.0±0.2	2.5±0.2	0.5±0.15	1.7±0.2	0.9±0.2	29

■Part Numbering

4T	06	D	T	W	U	R010	N
Product Type	Dimensions (L×W)	Resistance Tolerance	Packaging Code	TCR (PPM/°C)	Power Rating	Resistance	Marking Code
	06: 1206 10: 2010	D: ±0.5% F: ±1% G: ±2% J: ±5%	T: Taping Reel B: Bulk	D: ±50 W: ±75 E: ±100	Q: 3/4W U: 1/2W	R010: 0.01Ω	: Standard N: No Marking

■Standard Electrical Specifications

Item / Type	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)				TCR (PPM/°C)
			±0.5%	±1%	±2%	±5%	
4T06 (1206)	1/2W	-55 ~ +155°C	10 – 20				±50 ±75 ±100
4T10 (2010)	3/4W	-55 ~ +155°C	10 – 20				±50 ±75 ±100

Operating Voltage=√(P*R) or Max. operating voltage listed above, whichever is lower.
Overload Voltage=1.5*√(P*R) or Max. overload voltage listed above, whichever is lower.
■Viking is capable of manufacturing the optional spec based on customer's requirement.

■Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	+25/-55/+25/+125/+25°C
Short Time Overload	±(0.5%+0.0005Ω)	RCWV*1.5 for 5 seconds
Insulation Resistance	>1000MΩ	Apply 100V_{DC} for 1 minute
Endurance	±(0.5%+0.0005Ω)	70±2°C, RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	±(0.5%+0.0005Ω)	40±2°C, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Bending Strength	±(0.5%+0.0005Ω)	Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage	245±5°C for 3 seconds
Dielectric Withstand Voltage	By Type	Apply Max. Overload Voltage for l minute
Resistance to Soldering Heat	±(0.5%+0.0005Ω)	260±5°C for 10 seconds
Rapid change of temperature	±(0.5%+0.0005Ω)	-55°C ~155°C, 5 cycles

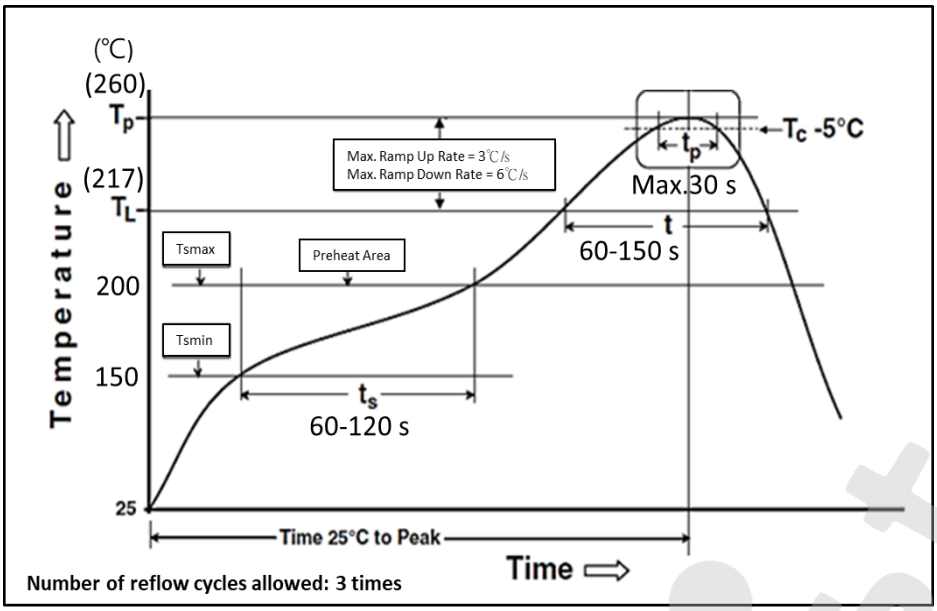
RCWV(Rated continuous working voltage)= √(P*R) or Max. Operating voltage whichever is lower

■**Reference Standards: MIL-STD-202, JIS-C 5201**

■**Storage Temperature: 15~28°C; Humidity < 80%RH**

■ **Shelf Life: 2 years from production date.**

■Soldering Condition(IPC/JEDEC J-STD-020)

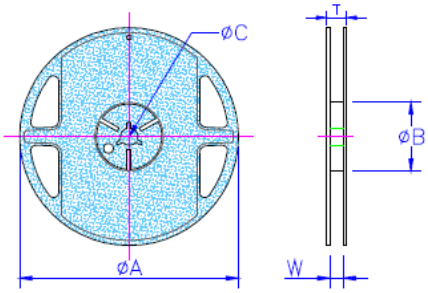


■Packaging

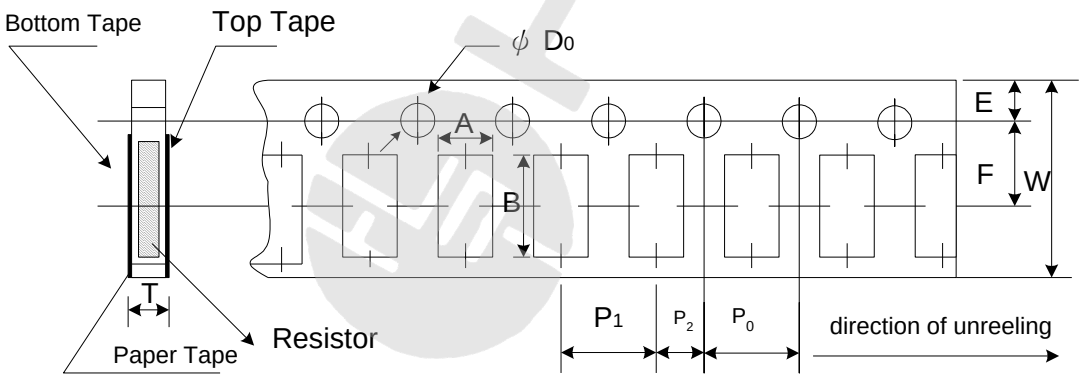
Packing Quantity & Reel Specifications

Unit :mm

Type	ØA	ØB	ØC	W	T	Paper Tape (EA)	Emboss Plastic Tape (EA)
4T06	178.0±1.0	60.0+1.0	13.5±0.7	9.5±1.0	11.5±1.0	5,000	
4T10	178.0±1.0	60.0+1.0	13.5±0.7	13.5±1.0	15.5±1.0	-	4,000



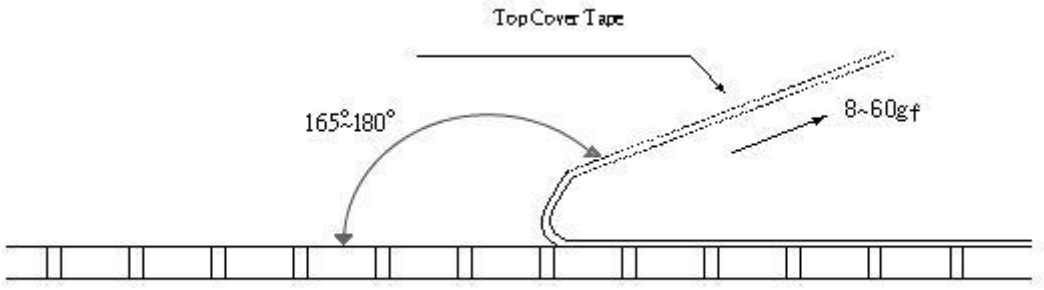
Paper Tape Specifications



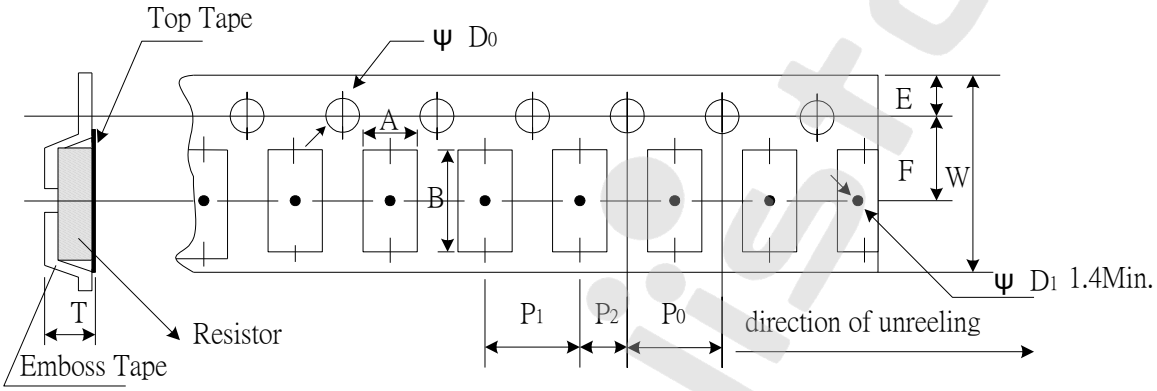
Unit: mm

Type	A	B	W	E	F	P_0	P_1	P_2	ΦD_0	T
4T06	2.00±0.05	3.55±0.05	8.00±0.10	1.75±0.05	3.5±0.05	4.00±0.10	4.00±0.10	2.00±0.05	1.55±0.05	0.75±0.05

■ Peel force of top cover tape
■ The peel speed shall be about 300mm/min±5%
■ The peel force of top cover tape shall be between 8gf to 60gf



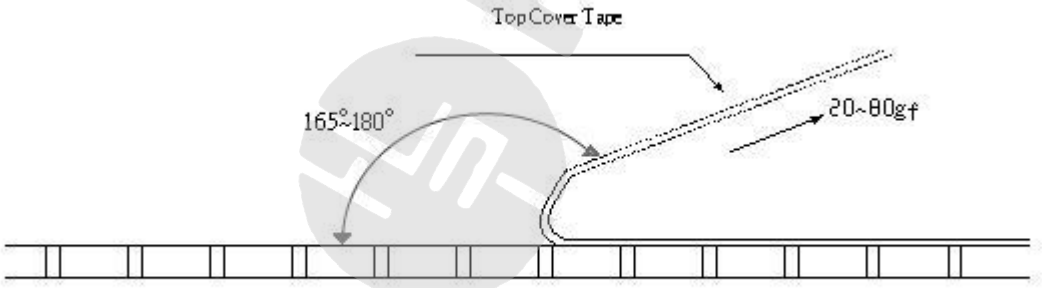
Emboss Plastic Tape Specifications



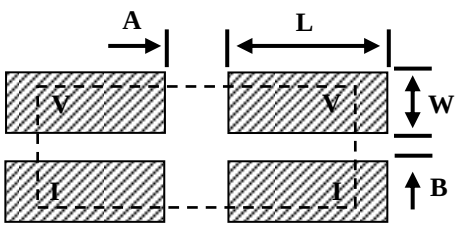
Unit: mm

Type	A	B	W	E	F	P_0	P_1	P_2	ØD_0	T
4T10	2.85±0.10	5.45±0.10	12.0±0.10	1.75±0.10	5.5±0.05	4.00±0.05	4.00±0.10	2.00±0.05	1.50+0.10	1.00±0.20

■ Peel force of top cover tape
■ The peel speed shall be about 300mm/min±5%
■ The peel force of top cover tape shall be between 20gf to 80gf



■Recommend Land Pattern



Unit: mm

Type	L	W	A	B
4T06	1.75	1.10	1.00	0.30
4T10	2.55	1.55	1.40	0.50