

SMD - Resistors

Product: Low Ohm (Metal Strip) Chip Resistor -SMD0 Series

Size: 1206/2512



official distributor of



SMD - Resistors

Low Ohm (Metal Strip) Chip Resistor (SMDO Series)

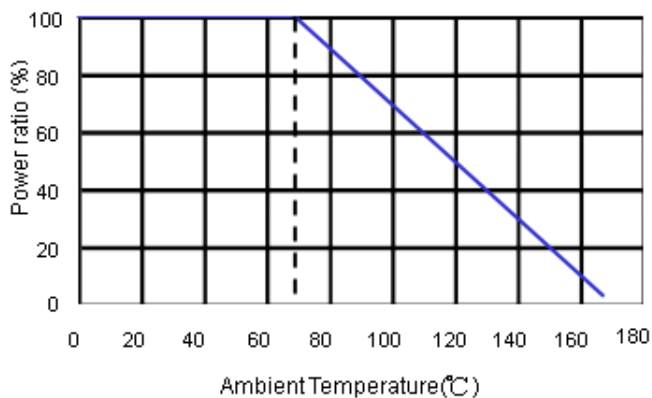
► 1. Features

- High power rating up to 3 Watts
- Low TCR down to ± 50 PPM/ $^{\circ}$ C
- Resistance values from $3\text{m}\Omega$ to $200\text{m}\Omega$
- Customized resistance available
- AEC-Q200 Compliance (LRP12 $3\text{m}\Omega$ to $100\text{m}\Omega$)
- Sulfur resistance unaffected by sulfur environments

► 3. Applications

- NB (for Power Management)
- MB (for Power Management)
- SWPS (DC-DC Converter, Charger, Adaptor)
- Monitor (for Power Management)

► 4. Derating Curve

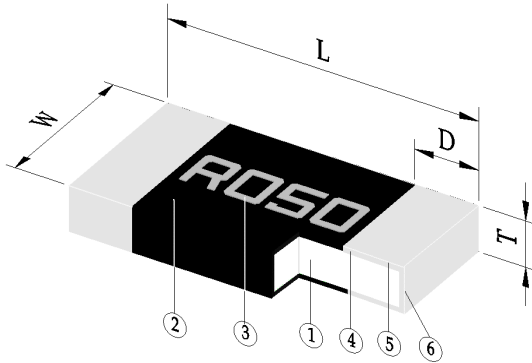


► 5. Part Numbering

SMDO	2512	J	T	E	S	R015
Product Type	Dimensions (LxW)	Resistance Tolerance	Packaging Code	TCR (PPM/ $^{\circ}$ C)	Power Rating	Resistance
	1206 2512	D: $\pm 0,5\%$ F: $\pm 1\%$ J: $\pm 5\%$	T: Taping Reel	D: ± 50 E: ± 100 W: ± 75	R: 3W S: 2W T: 1W	R015: 0.015Ω R050: 0.05Ω

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► 6. Construction



① Alloy Plate	④ Internal Electrode
② Overcoat	⑤ Barrier Layer
③ Marking	⑥ Solder Plating

► 7. Dimensions

Type	Size (Inch)	L (mm)	W (mm)	T (mm)	D (mm)
SMDO1206	1206	3.10±0.10	1.60±0.10	0.60±0.10	0.45±0.15
SMDO2512	2512	6.40±0.25	3.20±0.25	0.70±0.20	0.90±0.30

► 8. Electrical Specifications

Type	Item	Power Rating at 70°C	Operating Temp. Range	Resistance Range (mΩ)			TCR (PPM/°C)
				±0.5%	±1%	±5%	
SMDO1206		1W	-55 ~ +170°C	8, 10, 12, 15, 20			±100
SMDO2512		2W, 3W	-55 ~ +170°C	3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 200			±75
				15, 18, 20, 22, 25, 30, 33, 35, 39, 40, 47, 50, 60, 68, 70, 75, 80, 82, 90, 91, 100, 120, 150, 200			±50

Operating Current = $\sqrt{P/R}$, Operating Voltage = $\sqrt{P \cdot R}$

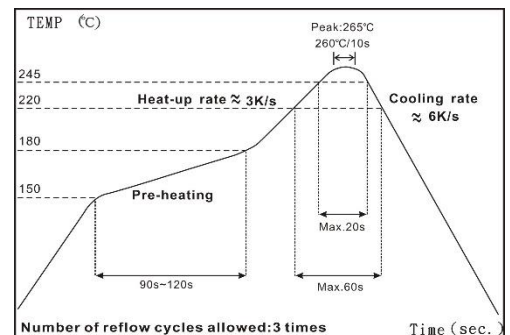
■ electronic sensor + resistor GmbH is capable of manufacturing the optional spec based on customer's requirement.

► 9. Soldering Condition (Reflow Soldering Only)

IR Reflow Soldering

(1) Time of IR reflow soldering at maximum temperature point 260°C : 10s

Notice : Wave soldering and hand soldering are not available.



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► 10. Environmental Characteristics

Item	Requirement	Test Method
Temperature Coefficient of Resistance (T.C.R.)	As Spec.	IEC60115-1 4.8 JIS-C-5201-1 4.8 +25°C ~125°C, 25°C is the reference temperature
Short Time Overload	±1.0%	IEC60115-1 4.13 JIS-C-5201-1 4.13 5*rated power for 5 seconds
Insulation Resistance	≥10G	IEC60115-1 4.6 JIS-C-5201-1 4.13 100V DC for 1 minute
Endurance	±1.0%	IEC60115-1 4.25 JIS-C-5201-1 4.25.1 70±2°C, rated power for 1000 hrs with 1.5 hrs "ON" and 0.5 hr "OFF"
Biased Humidity	±1.0%	MIL-STD-202 Method 103 1000 hrs 85°C/85%RH 10% of operating power
Dry Heat	±1.0%	IEC60115-1 4.23.2 JIS-C-5201-1 4.23.2 at +170°C for 1000 hrs
Bending Strength	±1.0%	JIS-C-5201-1 4.33 IEC-60115-1 4.33 Bending width 2mm once for 5 seconds
Solderability	95% min. coverage	JIS-C-5201-1 4.17 IEC-60115-1 4.17 245±5°C for 3 seconds
Resistance to Soldering Heat	±0.5%	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260±5°C for 10 seconds
Rapid Change of Temperature	±1.0%	JIS-C-5201-1 4.19 IEC-60115-1 4.19 -55°C to +155°C, 5 cycles
Low Temperature Storage	±1.0%	IEC60115-1 4.23.4 JIS-C-5201-1 4.23.4 at -55°C for 2 hrs

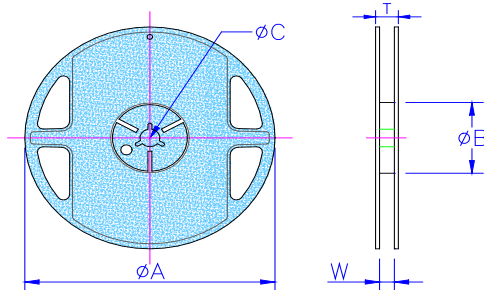
RCWV(Rated Continuous Working Voltage)= $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.

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

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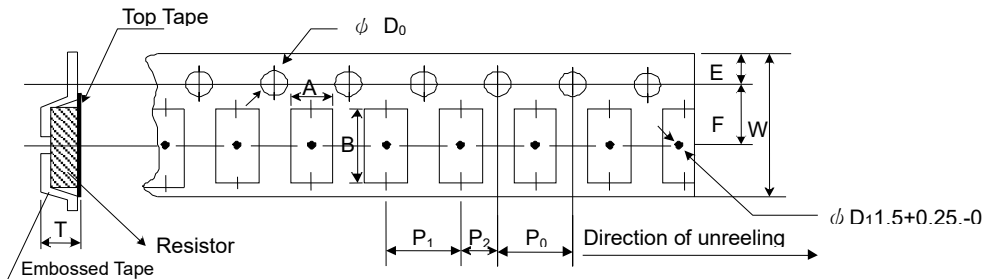
► 11. Packaging

Reel Specifications & Packaging Quantity



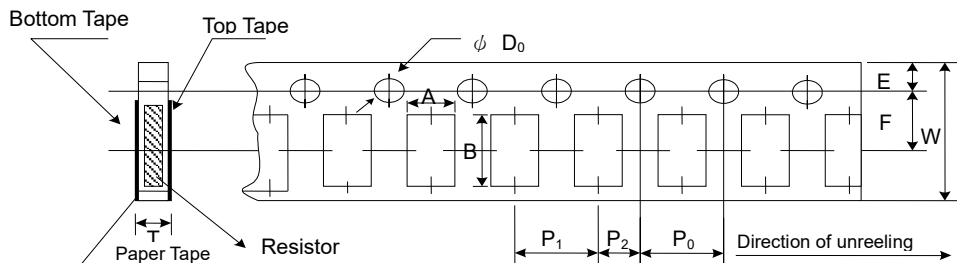
Type	Resistance (m Ω)	Packaging Quantity	Tape Width	Reel Diameter	ΦA (mm)	ΦB (mm)	ΦC (mm)	W (mm)	T (mm)	
SMDO1206	8~20	Paper	5K	8mm	7 inch	178.5 \pm 1.5	60 ^{+1/-0}	13.0 \pm 0.2	9.0 \pm 0.5	12.5 \pm 0.5
SMDO2512	4~100	Embossed	4K	12mm	7 inch	178.5 \pm 1.5	60 \pm 1.0	13.0 \pm 0.5	13.0 \pm 1.0	15.5 \pm 0.5
SMDO2512	3	Embossed	2K	12mm	7 inch	178.5 \pm 1.5	60 \pm 1.0	13.0 \pm 0.5	13.0 \pm 1.0	15.5 \pm 0.5

Embossed Plastic Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD_0 (mm)	T (mm)
SMDO2512	3.50 \pm 0.10	6.70 \pm 0.10	12.0 \pm 0.30	1.75 \pm 0.10	5.5 \pm 0.05	4.00 \pm 0.10	4.00 \pm 0.10	2.00 \pm 0.05	1.50 \pm 0.1, -0	1.20 \pm 0
SMDO2512 (3m Ω)	3.50 \pm 0.10	6.70 \pm 0.10	12.0 \pm 0.30	1.75 \pm 0.10	5.5 \pm 0.05	4.00 \pm 0.10	4.00 \pm 0.10	2.00 \pm 0.05	1.50 \pm 0.1, -0	1.45 \pm 0.2

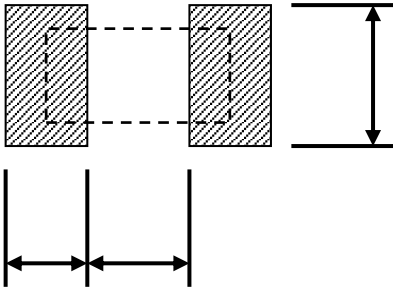
Paper Tape Specifications



Type	A (mm)	B (mm)	W (mm)	E (mm)	F (mm)	P ₀ (mm)	P ₁ (mm)	P ₂ (mm)	ΦD_0 (mm)	T (mm)
SMDO1206	1.90 \pm 0.10	3.50 \pm 0.20	8.0 \pm 0.20	1.75 \pm 0.10	3.50 \pm 0.05	4.00 \pm 0.10	4.00 \pm 0.05	2.00 \pm 0.05	1.50 \pm 0.1,-0	0.85 \pm 0.10

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▶ 12. Recommend Land Pattern



Type	A (mm)	B (mm)	C (mm)
SMDO1206	1.50	1.40	1.70
SMDO2512	4.00	2.00	3.50

*FR4 copper board, 100 μ m of copper pad thickness