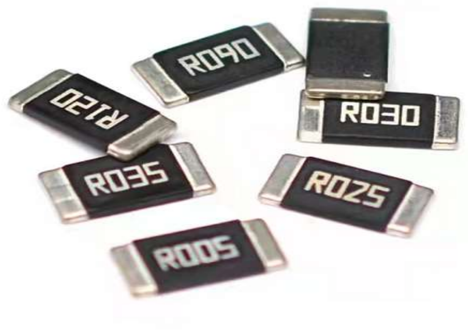
VR 2512 Series

Current Sensing Resistor



General

- Chip size 2512
- Resistance value from 1mΩ to 500mΩ
- Low thermal EMF
- Low TCR
- Lead free, RoHS compliant for global
- Applications and halogen free

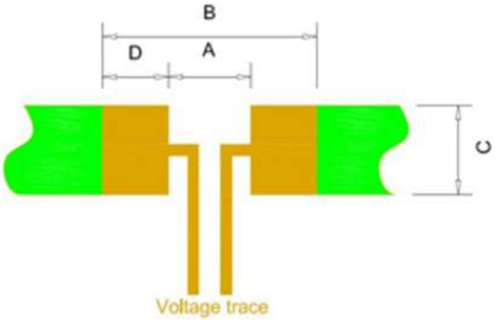
Application

- Switching model power supply
- Battery pack
- Notebook, personal computer
- Test Instrument
- Power Amplifier

Electrical Specifications

Type	Power Rating at 70℃(W)	Resistance Range(mΩ)	TCR (ppm/℃)	Resistance tolerance	Operation Temp. Range
2512	2W/3W	1 mΩ	±100	±1%(F) ±2%(G) ±5%(J)	-55℃~+170℃
		2≤R≤500	±50		

Recommended Solder Curve



Type	Resistance Range (mΩ)	A (mm)	B (mm)	C (mm)	D (mm)
2512	1~500	4.6	8.2	3.2	1.80

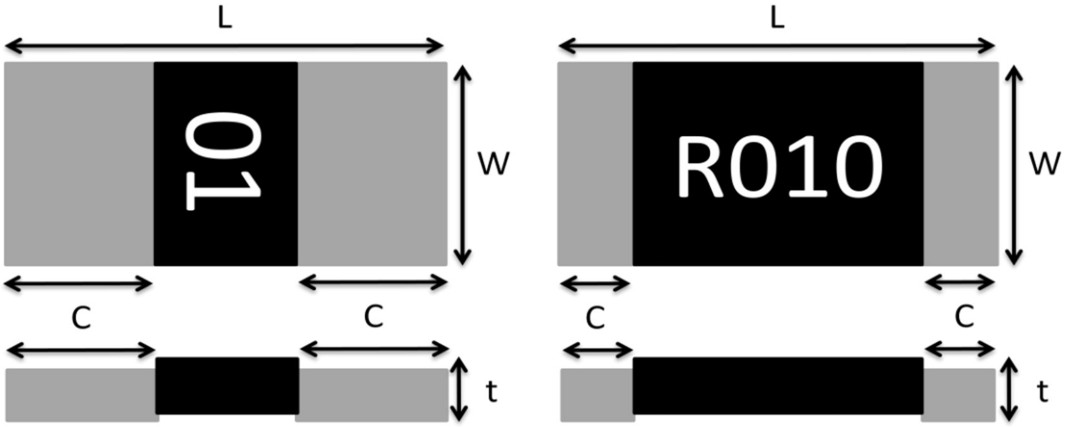
Part Number Information

VR 25 M 3 F R010 T

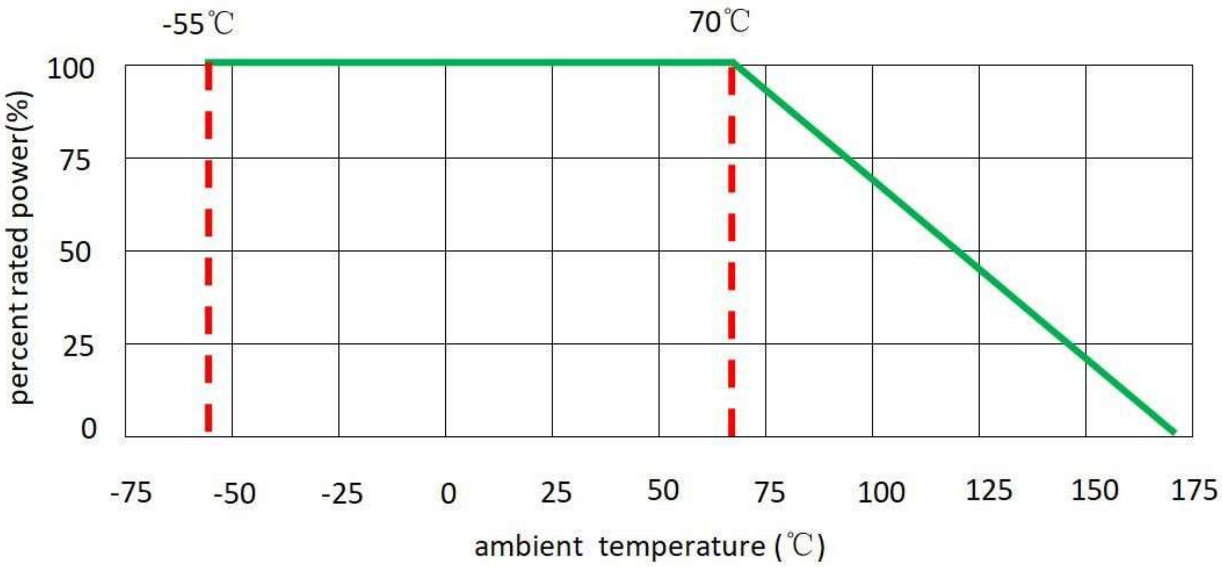
【1】【2】【3】【4】【5】【6】【7】

【1】Series Name: Vansemi Resistor
【2】Chip size:25:2512
【3】Material Code: M: Metal Type
【4】Power Code: 2:2W 3:3W
【5】Resistance Tolerance: F:±1% G:±2% J: ±5%
【6】Resistance Code:R010=10mΩ
【7】Packaging Code: T: Tape& Reel

Dimensions

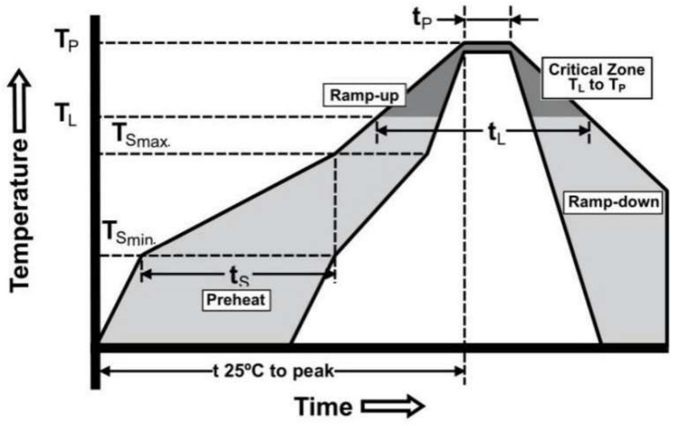


Type	Resistance Range(mΩ)	L (mm)	W (mm)	t (mm)	C (mm)
2512	1~500	6.40±3.2	1.60±0.2	0.6±0.2	0.90±0.2



Recommended Solder Curve

1. Infrared Reflow
Temperature:260℃
Time:5sec Max.
Recommend Reflow profile:



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (Ts_{max} to Tp)	3℃/sec Max.
Preheat Temperature Min(Ts_{min}) Temperature Max(Ts_{max}) Time(Ts_{min} to Ts_{max})	150℃ 200℃ 60sec~120sec
Peak Temperature(Tp)	260℃
Time within 5℃ of actual Peak Temperature(Tp)	5sec
Melting tin time(T_L)	20sec~30sec
Ramp-Down Rate	6℃/sec Max.
Time 25℃ to Peak Temperature	8min Max.

2. Wave soldering
Reservoir Temperature：260℃
Time in Reservoir： 10sec Max.

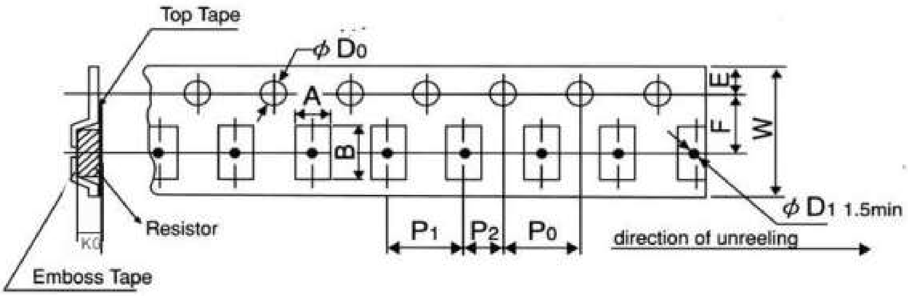
3. Hand Soldering
Temperature：350℃
Time：5sec Max.

Product Characteristics

Item	Test condition/ Methods	Performance	Standard
Short Time Overload	0.5W:5X rated power for 5 sec 1.0W:5X rated power for 5 sec	|ΔR|≤ ±1%	IEC60115-1 4.13
Temperature Coefficient of Resistance (T.C.R.)	TCR =(R-R_0)/R_0(T2-T1)* 10^6 T1 T2 Test temperature：25℃~125℃	Refer to VanSemi Spec	IEC60115-1 4.8
Load Life	1000 hours at rated power, 70℃± 2℃, 1.5hours “ON”, 0.5hours “OFF”	|ΔR|≤±1%	IEC60115-1 4.25
Bias Humidity	40℃±2℃, 93% ±3% RH, 1000 hours at rated power, 1.5 hours “ON”, 0.5 hours “OFF”	|ΔR|≤±1%	IEC60115-1 4.24
Thermal Shock	-55℃(30min)/+125℃ (30min), 100 cycles	|ΔR|≤±1%	IEC60115-1 4.19
Solder ability	245℃± 5℃，3sec ± 0.3sec	95%coverage Min.	IEC60115-1 4.17
Resistance to Soldering Heat	270℃± 5℃，10sec ±1.0sec	|ΔR|≤±1%	IEC60115-1 4.18
High temperature Exposure	170℃± 2℃ for 1000 hours	|ΔR|≤±1%	IEC60115-1 4.23
Bending test	Epoxy thickness1.6mm, Fulcrums distance 90mm,Bending width 5mm（0805）, Bending width 4mm（1206）.	|ΔR|≤±1%	IEC60115-1 4.33

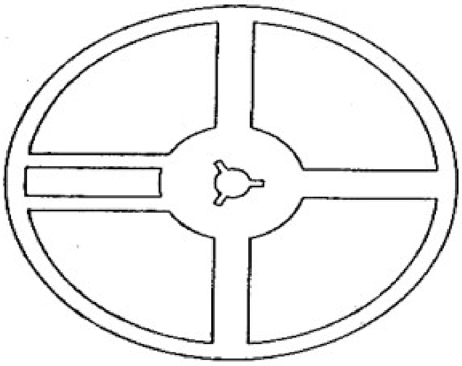
Packaging

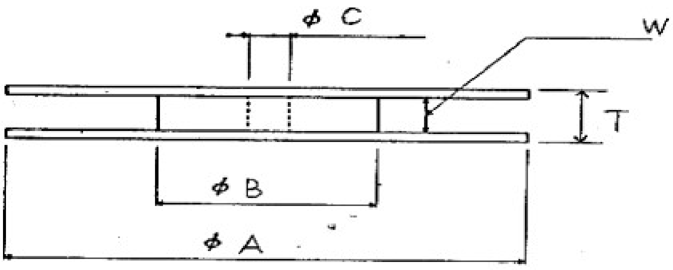
1. Paper Tape Dimensions



A	B	W	F	E	P_1	P_2	P_0	D_0	K0
3.5±0.1	6.8±0.1	12.±0.1	5.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	1.5 +0.1	1.0±0.1

2. Reel Dimensions



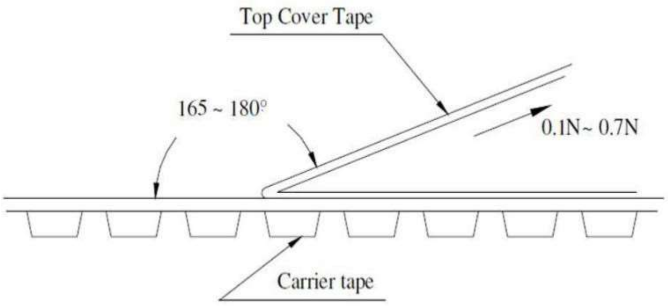


Type	ψ A	ψ B	ψ C	W	T
2512	178±2.0	60±1.0	13.0±1.0	9.0±1.0	15.4±2.0

3. Quantity of Package

Type	**2512**
Quantity(PCS）	4000

4. Peeling Test



Storage

- The ambient temperature shall between 5℃~30℃.
- The relative humidity recommended for storage is between 25%RH~60%RH.
- Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use.
- The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.