

**DATA SHEET**

**Current Sensing Chip Resistor**

**PR2512**  
**(RoHS Compliant)**

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## SCOPE

This specification describes PR2512 series chip resistors with lead-free terminations and RoHS compliant.

## ORDERING INFORMATION

Part number is identified by the series, size, tolerance, packing style, temperature coefficient, taping reel, resistance value.

## FEATURES

- Products with lead free terminations meet RoHS requirements.
- High component and equipment reliability
- Ultra-low resistance and narrow tolerance can suitable for current detection.

PR2512 X X X XX XXXXX L **MARKING**  
 (1) (2) (3) (4) (5) (6)

### (1) TOLERANCE

F = ±1%  
 G = ±2%  
 J = ±5%

PR2512



Value=5mΩ

With a top bar : 5 mΩ

The R is used as decimal point; the other 3digits are significant.

### (2) PACKAGING STYLE

K = Embossed taping reel

### (3) TEMPERATURE COEFFICIENT OF RESISTANCE

G=±200ppm/°C  
 F=±100ppm/°C

### (4) TAPING REEL

07 = 7" dia. Reel

### (5) RESISTANCE VALUE

1/2/3/4/5mΩ

### (6) Default Code

Letter L is system default code for order only (NOTE)

### ORDERING EXAMPLE

The ordering code for a PR2512 chip resistor, 1W, TC100, value 0.005 Ω with ±1% tolerance, supplied in 7-inch tape reel is: PR2512FKF070R005L

### NOTE

1. All our RSMD products meet RoHS compliant and Halogen Free. "LFP" of the internal 2D reel label mentions "Lead Free Process".
2. On customized label, "LFP" or specific symbol can be printed.



## MARKING

PR2512



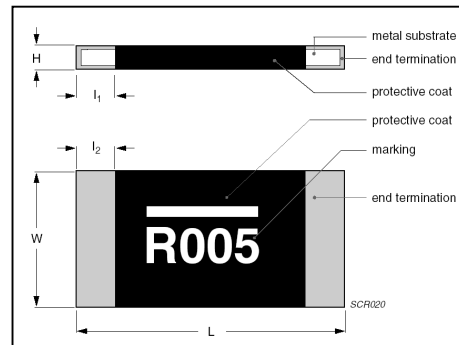
The R is used as decimal point; the other 3 digits are significant.

For marking codes, please see EIA-marking code rules in data sheet “Chip resistors marking”.

## DIMENSION

Table 1

PR2512	1/2/3/4/5 mΩ
L (mm)	6.30±0.20
W (mm)	3.20±0.20
H (mm)	0.55±0.15
I1 (mm)	0.60±0.20
I2 (mm)	0.60±0.20



## ELECTRICAL CHARACTERISTICS

Table 2

CHARACTERISTICS	PR2512 1W
Operating Temperature Range	-55°C to +155°C
Maximum Working Voltage	$\sqrt{(P * R)}$
Tolerance	±1% / ±2% / ±5%
Resistance Range	1~5mΩ
Temperature Coefficient	1~2mΩ ±200ppm/°C
	3~5mΩ ±100ppm/°C

## FOOTPRINT AND SOLDERING PROFILES

For recommended footprint and soldering profiles, please see the special data sheet “Chip resistors mounting”.

## ENVIRONMENTAL DATA

For material declaration information (IMDS-data) of the products, please see the separated info “Environmental data” conformed to EU RoHS.

Table 3 Packing style and packaging quantity.

PACKING STYLE	REEL	DIMENSION	2512
Embossed Taping Reel (K)	7"	(178 mm)	4,000

Note :

1. For embossed tape and reel specification/dimensions, please see the special data sheet “Packing” document.

## FUNCTIONAL DESCRIPTION

### POWER RATING

**PR2512 rated power at 70°C is 1 W**

### RATED VOLTAGE

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

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

Where

V=Continuous rated DC or AC (rms) working voltage (V)

P=Rated power (W)

R=Resistance value (Ω)

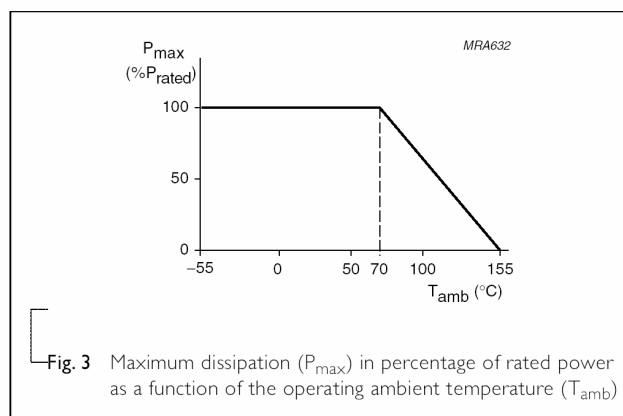


Fig. 3 Maximum dissipation (P<sub>max</sub>) in percentage of rated power as a function of the operating ambient temperature (T<sub>amb</sub>)

**TESTS AND REQUIREMENTS**

TEST	TEST METHOD	PROCEDURE	REQUIREMENT
Life/ Endurance	IEC 60115-1 4.25.1	1,000 hours at 70±5 °C applied RCWV 1.5 hours on, 0.5 hour off, still air required	± (1.0 % + 0.0005 Ω)
High Temperature Exposure/ Endurance at upper category temperature	IEC 60068-2-2	1,000 hours at 155±5 °C,unpowered	± (1.0 % + 0.0005 Ω)
Moisture Resistance	MIL-STD-202 Method 106G	Each temperature / humidity cycle is defined at 8 hours (Method 106G), 3 cycles / 24 hours for 10d. with 25 °C / 65 °C 95% R.H, without steps 7a & 7b, un-powered Parts mounted on test-boards, without condensation on parts Measurement at 24±2 hours after test conclusion.	± (0.5% + 0.0005 Ω)
Thermal Shock	MIL-STD-202G Method 107G	-55/+125 °C Note: Number of cycles required is 300. Devices unmounted Maximum transfer time is 20 seconds. Dwell time is 15 minutes. Air – Air	± (1.0% + 0.0005 Ω)
Short time overload	IEC 60115-1 4.13	2.5 times of rated voltage or maximum overload voltage whichever is less for 5 sec at room temperature	± (1.0% + 0.0005 Ω) No visible damage
Board Flex/ Bending	IEC 60068-2-21	Chips mounted on a 90mm glass epoxy resin PCB(FR4) 2 mm bending Bending time: 60±1 seconds	± (1.0 % + 0.0005 Ω)
Solderability - Wetting	IPC/JEDEC J-STD-002B test B	Electrical Test not required Magnification 50X SMD conditions: 1st step: Method B, aging 4 hours at 155 °C dry heat 2nd step: leadfree solder bath at 245±3 °C Dipping time: 3±0.5 seconds	Well timed (≥95% covered) No visible damage
- Leaching	IPC/JEDEC J-STD-002B test D	Leadfree solder, 260 °C, 30 seconds immersion time	No visible damage
- Resistance to Soldering Heat	IEC 60068-2-58	Condition B, no pre-heat of samples Leadfree solder, 260±5 °C, 10±1seconds immersion time Procedure 2 for SMD: devices fluxed and cleaned with isopropanol	± (0.5% + 0.0005 Ω) No visible damage



**REVISION HISTORY**

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	2008-10-14		- First issue of this specification