

DATA SHEET

Current Sensing Chip Resistor

PF2512
(RoHS Compliant)
2W

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SCOPE

This specification describes PF2512 series chip resistors with lead-free terminations.

ORDERING INFORMATION

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

PF2512 X X X X X XXXXX L

(1) (2) (3) (4) (5) (6) (7)

MARKING

(1) TOLERANCE

F = $\pm 1\%$

J = $\pm 5\%$

PF2512



Fig. 1 Value=10m Ω

(2) PACKAGING STYLE

K = Embossed taping reel

(3) TEMPERATURE COEFFICIENT OF RESISTANCE

M= $\pm 75\text{ppm}/^\circ\text{C}$

F= $\pm 100\text{ppm}/^\circ\text{C}$

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

For further marking information, please see special data sheet "Chip resistors marking".

(4) TAPING REEL

7 = 7 inch dia. Reel

ORDERING EXAMPLE

The ordering code for a PF2512 2W chip resistor, TC 100 value 10m Ω with $\pm 1\%$ tolerance, supplied in 7-inch tape reel with 4Kpcs quantify is: PF2512FKF7W0R01L.

(5) Power rating

W = 2 x standard power ^(a)

(6) RESISTANCE VALUE

6 m Ω / 7 m Ω / 10 m Ω / 15m Ω / 20 m Ω / 25 m Ω

33 m Ω / 50 m Ω

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.

(7) Default Code

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

DIMENSION

Table 1

PR2512	6 m Ω	7 m Ω /10 m Ω 15 m Ω	20 m Ω /25m Ω / 33 m Ω /50 m Ω
L (mm)	6.45 $\pm$ 0.25	6.45 $\pm$ 0.25	6.45 $\pm$ 0.25
W (mm)	3.25 $\pm$ 0.25	3.25 $\pm$ 0.25	3.25 $\pm$ 0.25
H (mm)	0.70 $\pm$ 0.25	0.70 $\pm$ 0.25	0.70 $\pm$ 0.25
l1 (mm)	0.75 $\pm$ 0.25	0.75 $\pm$ 0.25	0.75 $\pm$ 0.25
l2 (mm)	1.85 $\pm$ 0.25	1.55 $\pm$ 0.25	1.30 $\pm$ 0.25

For dimension see Table 1

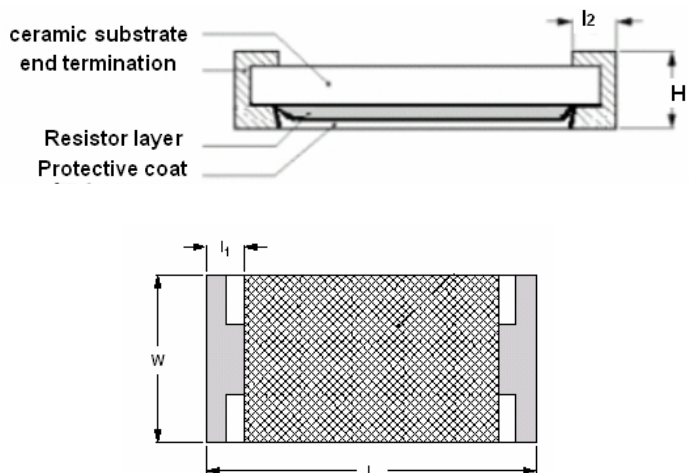


Fig. 2 Chip resistor outlines

ELECTRICAL CHARACTERISTICS

Table 2

CHARACTERISTICS	PF2512 2W
Operating Temperature Range	-55 $^{\circ}$ C to +155 $^{\circ}$ C
Maximum Working Voltage	$\sqrt{(P * R)}$
Resistance Range	6m Ω / 7m Ω / 10m Ω / 15m Ω / 20m Ω 25m Ω /33m Ω / 50m Ω
Temperature Coefficient	$\pm$ 75ppm/ $^{\circ}$ C $\pm$ 100ppm/ $^{\circ}$ C

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

PF2512 rated power at 70°C is 2W

RATED VOLTAGE

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

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

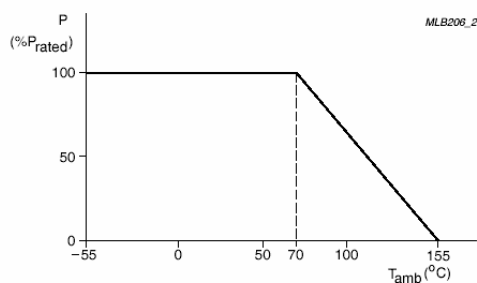
Where

V=Continuous rated DC

or AC (rms) working voltage (v)

P=Rated power

R=Resistance value (Ω)



Maximum dissipation (P) in percentage of rated power as a function of the operating ambient temperature (T_{amb})

Fig. 3

TESTS AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	REQUIREMENT
Life	IEC 60115-1 4.25.1	At 70±5°C for 1,000 hours; RCWV applied for 1.5 hours on and 0.5 hour off, still air required	±(1%+0.0005Ω)
High Temperature Exposure	IEC 60068-2-2	1,000 hours at 155±5 °C, unpowered	±(1%+0.0005Ω)
Moisture Resistance Heat	MIL-STD-202 Method 106G	Each temperature / humidity cycle is defined at 8 hours (method 106F), 3 cycles / 24 hours for 10d with 25 °C / 65 °C 95% R.H, without steps 7a & 7b, unpowered Parts mounted on test-boards, without condensation on parts Measurement at 24±2 hours after test conclusion	±(0.5%+0.0005Ω) No visible damage
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	±(0.5%+0.0005Ω)
Short Time Overload	IEC 60115-1 4.13	2.5 times RCWV or maximum overload voltage which is less for 5 seconds at room temperature	±(0.5%+0.0005Ω) No visible damage
Board Flex/ Bending	IEC 60068-2-21	Device mounted or as described only 1 board bending required 2 mm bending time: 60±5 seconds Ohmic value checked during bending	±(1%+0.0005Ω) No visible damage
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 tinned (≥95% covered) No visible damage
-Leaching	IPC/JEDEC J-STD-002B test D	Solder bath at 260±5°C Dipping time : 30±1 seconds	No visible damage
-Resistance to Soldering Heat	IEC 60068-2-58	Condition B, no pre-heat of samples Leadfree solder, 260 °C ±5°C, 10 ±1 seconds immersion time Procedure 2 for SMD: devices fluxed and cleaned with isopropanol	±(0.5%+0.0005Ω) No visible damage

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	2008/4/29		- First issue of this specification
Version 1	2009/3/31		- TCR Upgraded - Dimensions modified