

# DATA SHEET

CURRENT SENSOR-LOW TCR

**PF-High power series**

5%,1%

size 1206

RoHS Compliant



**Phi**comp

Product specification



## SCOPE

This specification describes PF1206 chip resistors with lead-free terminations.

## APPLICATIONS

- Power supplies
- Consumer(Mobile 、 PNDs 、 ...)
- Laptop
- HDDs

## FEATURES

- Products with lead free terminations meet RoHS requirements.
- High component and equipment reliability with high power rating (1/2W).
- Low resistance (10mΩ or under)and narrow tolerance (±1%) can suitable for current detection.

## ORDERING INFORMATION - GLOBAL PART NUMBER

Part number is identified by the series name, size, tolerance, packaging type, temperature coefficient of resistance, taping reel, resistance value.

PF1206   X   X   X   X   X   XXXX   L  
 (1) (2) (3) (4) (5) (6) (7)

### (1) TOLERANCE

F = ±1%

J = ±5%

### (2) PACKAGING TYPE

R = Paper taping reel

### (3)TEMPERATURE COEFFICIENT OF RESISTANCE

M=±75ppm/°C

F=±100ppm/°C

### (4) TAPING REEL

7 = 7 inch dia. Reel

### (5) POWER RATING

W = 2 x standard power

### (6) RESISTANCE VALUE

PF1206: 0R005/ 0R01/ 0R015/ 0R02/ 0R025/ 0R03 / 0R04  
 ( For other resistance value is on request)

### (7) Default Code

Letter L is system default code for order only.

(NOTE)

## ORDERING EXAMPLE

The ordering code of a PF1206 0.5W chip resistor, value 0.01 Ω with ±1% tolerance, supplied in 7-inch tape reel is: PF1206FRF7W0R01L.

## 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

PF1206



Fig.1

Value=10mΩ

3 digits

The “R” is used as a decimal point; the other 2 digits are significant.

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

## CONSTRUCTION

The resistors are constructed out of a high-grade ceramic body. Internal metal electrodes are added at each end and connected by a resistive paste. The composition of the paste is adjusted to give the approximate required resistance and laser cutting of this resistive layer that achieves tolerance trims the value. The resistive layer is covered with a protective coat and printed with the resistance value. Finally, the two external terminations (matte tin) are added. See fig. 2.

## OUTLINES

For dimension see Table 1

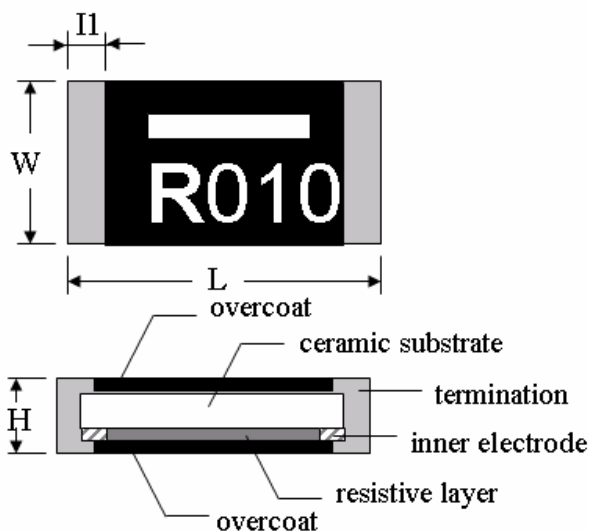


Fig.2 Chip resistor outlines

TYPE	PF1206
L (mm)	3.20±0.25
W (mm)	1.60±0.25
H (mm)	0.60±0.25
H1 (mm)	0.50±0.25
H2 (mm)	0.65±0.25

## ELECTRICAL CHARACTERISTICS

Table 2

CHARACTERISTICS	PF1206 1/2W
Operating Temperature Range	-55°C to +155°C
Maximum Working Voltage	$\sqrt{(P * R)}$
Resistance Range	PF1206 : 5/10/15/20/25/30/4 0mΩ
Temperature Coefficient	M=±75ppm/°C F=±100ppm/°C

## FOOTPRINT AND SOLDERING PROFILES

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

## PACKING STYLE AND PACKAGING QUANTITY

Table 3

PRODUCT TYPE	PACKING STYLE	REEL DIMENSION	QUANTITY PER REEL
PF1206	Paper taping reel	7" (178 mm)	4,000 Units

## FUNCTIONAL DESCRIPTION

### POWER RATING

PF1206 rated power at 70°C is 1/2W

### RATED VOLTAGE

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

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

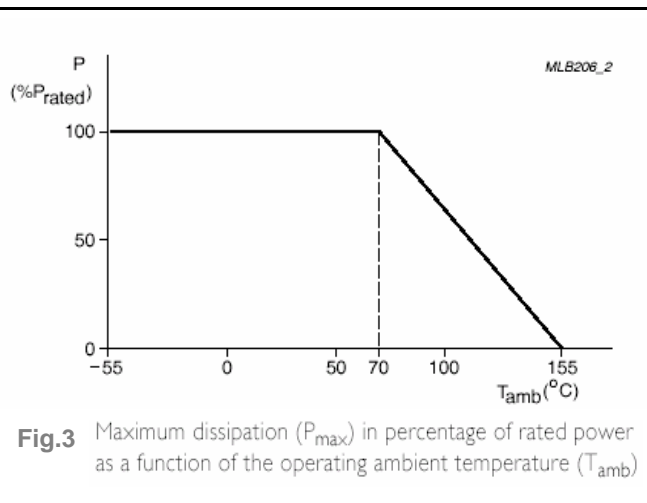
Where

V=Continuous rated DC

or AC (rms) working voltage (v)

P=Rated power

R=Resistance value (Ω)



## TAPING REEL

Table 4

DIMENSION	1206
Tape Width(mm)	8
ØA (mm)	180.0+0/-3
ØN (mm)	60.0+1/-0
ØC (mm)	13.0±0.2
ØD (mm)	21.0±0.8
W1 (mm)	9.0±0.2
W2 (mm)	12.0±0.2

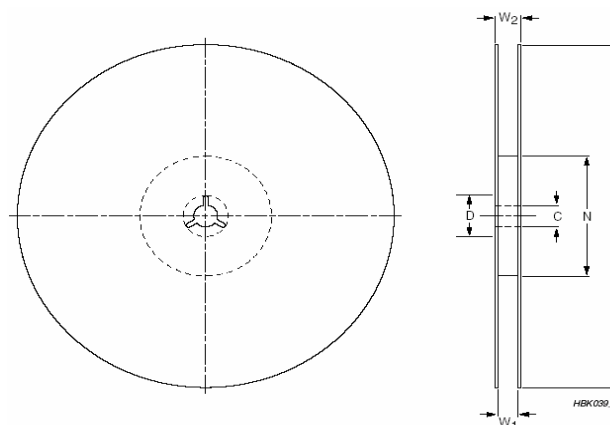


Fig.4 Reel

## PAPER/PE TAPE SPECIFICATION

Table 5

DIMENSION	1206
A0 (mm)	1.9±0.1
B0 (mm)	3.5±0.1
W (mm)	8.0±0.2
E (mm)	1.75±0.1
F (mm)	3.5±0.05
P0 (mm)	4.0±0.05
P1 (mm)	4.0±0.1
P2 (mm)	2.0±0.05
ØD0 (mm)	1.5+0.1/-0
T (mm)	0.85±0.1

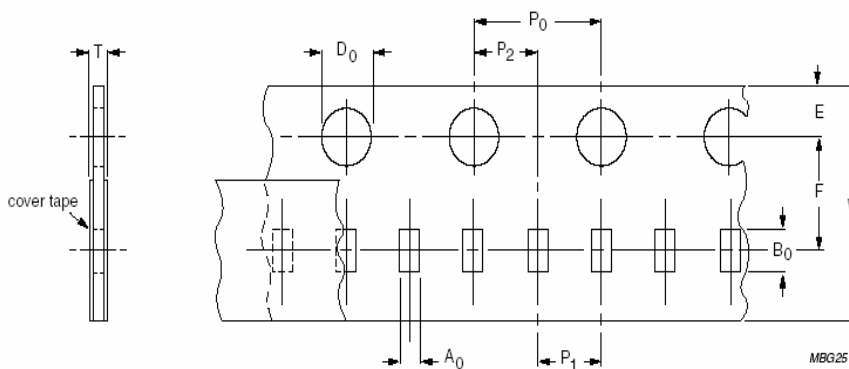


Fig.5 Paper tape

## PACKING METHOD

### LEADER/TRAILER TAPE SPECIFICATION

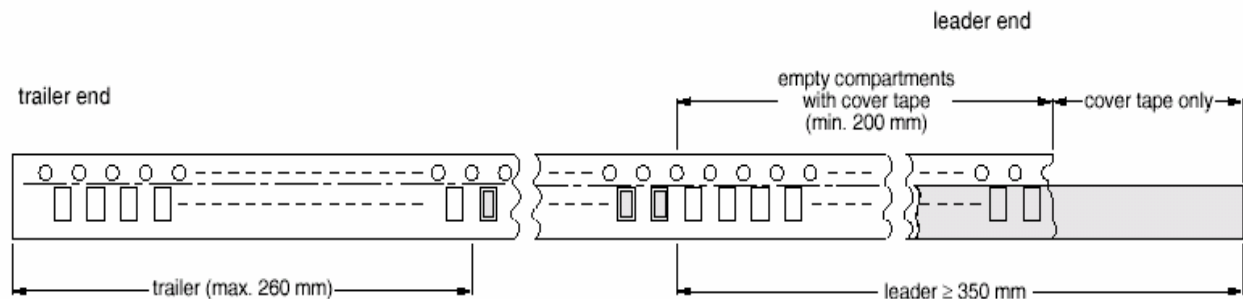


Fig.6 Leader/trailer tape

**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	Applied 5 times of rated power for 5 sec at room temperature	± (0.5% + 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	2009-03-13		- First issue of this specification