Innovative Service Around the Globe YAGEO

DATA SHEET

GENERAL PURPOSE CHIP RESISTORS

RC0805

5%, 1%, 0.5%, 0.1%

RoHS Compliant & Halogen Free

YAGEO Phicomp

Product specification - July 26, 2016 V0

SCOPE

This specification describes RC0805 series chip resistors with lead-free terminal made by thick film process.

ORDERING INFORMATION

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

RC0805 X R — XX XXX L

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

(1) TOLERANCE

B = ±0.1%

F = ±0.5%

F = ±1%

J = ±5% (for jumper ordering use code of J)

(2) PACKAGING TYPE

R = Paper taping reel

(3) TEMPERATURE COEFFICIENT OF RESISTANCE

— = base on spec.

(4) TAPING REEL

07 = 7 inch dia. Reel

(5) RESISTANCE VALUE

1Ω to 100MΩ

(6) Default Code

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

MARKING

RC0805

103

Fig.1 Value = 10kΩ

5% E-24 series: 3 digits

First two digits for significant figure and 3rd digit for number of zeros.

1002

Fig.2 Value = 10KΩ

Both 1% E-24 and E-96 series: 4 digits

First three digits for significant figure and 4th digit for number of zeros.

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 material. The composition of the resistive material 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 are added. See fig.3

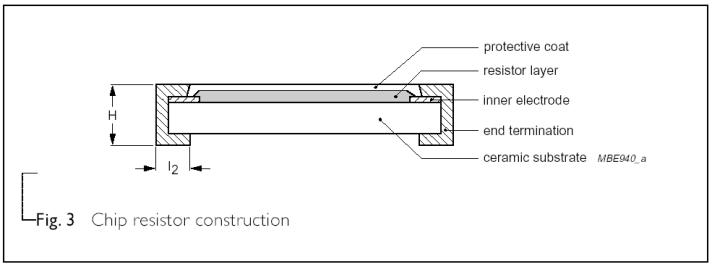


Fig. 3 Chip resistor construction

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**

DIMENSION

Table 1

TYPE	RC0805
L (mm)	2.00±0.10
W (mm)	1.25±0.10
H (mm)	0.50±0.10
I1 (mm)	0.35±0.20
I2 (mm)	0.35±0.20

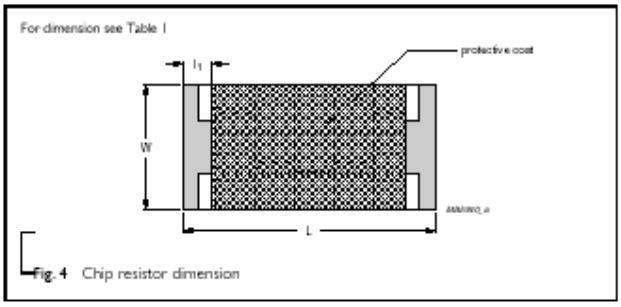


Fig. 4 Chip resistor dimension

POWER RATING

RATED POWER AT 70°C,

RC0805 0.25W

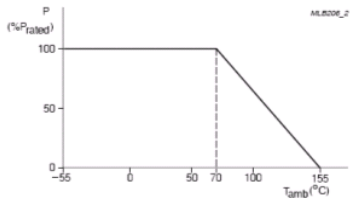


Fig. 5 Maximum dissipation (P) in percentage of rated power as a function of the operating ambient temperature (T_{amb})

ELECTRICAL CHARACTERISTICS

Table 2

CHARACTERISTICS	RC0805 0.25 W	
Operating Temperature Range	–55°C to +155°C	
Maximum Working Voltage	150V	
Maximum Overload Voltage	300V	
Dielectric Withstanding Voltage	300V	
Resistance Range	±5% (E24) 1Ω to 100MΩ	
	±1% (E24/E96) 1Ω to 10MΩ	
	±0.1%, 0.5% (E24/E96) 10Ω to 1MΩ	
	Jumper <50mΩ	
Temperature Coefficient	1Ω≤ R ≤10Ω	±200ppm/℃
	10Ω< R ≤10MΩ	±100ppm/℃
	10MΩ< R ≤22MΩ	±200ppm/℃
	24MΩ< R ≤100MΩ	±300ppm/℃
Jumper Criteria	Rated Current	2A
	Maximum Current	5A

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

P=Rated power

R=Resistance value

TAPING REEL

Table 3

DIMENSION	RC0805
Tape Width(mm)	8
ØA (mm)	180+0/–3
ØB (mm)	60+1/–0
ØC (mm)	13.0±0.2
W (mm)	9.0±0.3
T (mm)	11.4±1

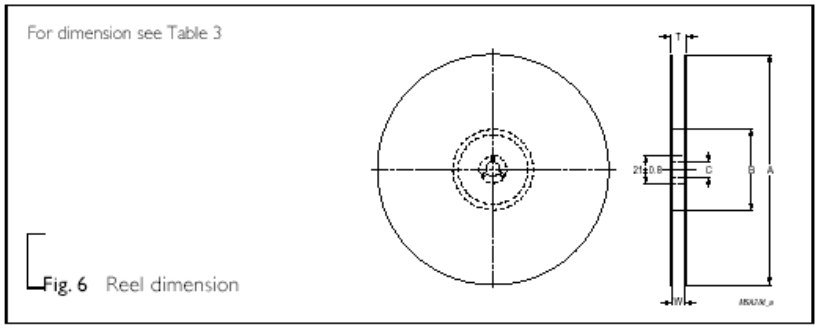
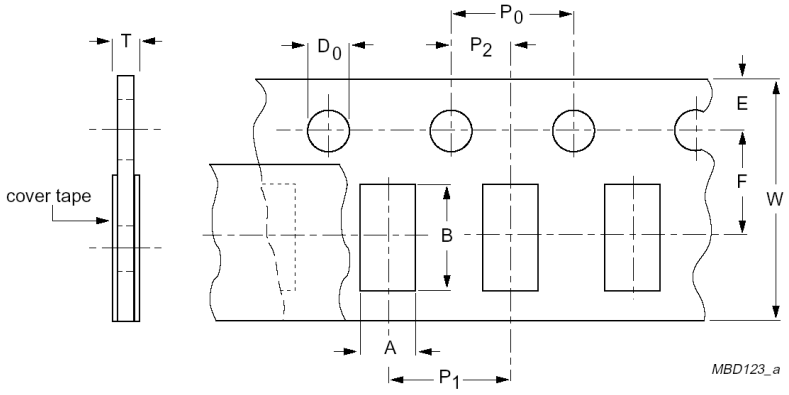


Fig. 6 Reel dimension

PAPER TAPE SPECIFICATION

Table 4

DIMENSION	RC0805
A (mm)	1.9±0.1
B (mm)	3.5±0.1
W (mm)	8.0±0.2
E (mm)	1.75±0.1
F (mm)	3.5±0.05
P_0 (mm)	4.0±0.05
P_1 (mm)	4.0±0.1
P_2 (mm)	2.0±0.05
$ØD_0$ (mm)	1.5+0.1/–0
T (mm)	0.85±0.1



PACKING METHOD

LEADER/TRAILER TAPE SPECIFICATION

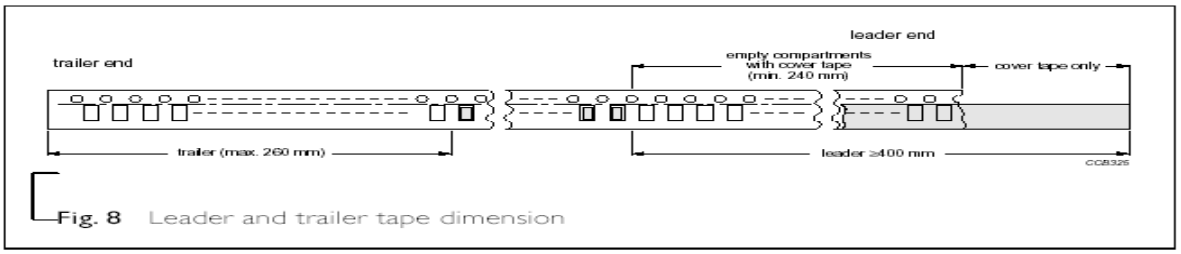


Fig. 8 Leader and trailer tape dimension

Table 5 Packing style and packaging quantity.

PACKING STYLE	REEL	DIMENSION	RC0805
Paper taping reel	7" (178 mm)		5,000

TESTS AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	REQUIREMENT
Life/ Endurance	MIL-STD 202 Method 108 IEC 60115-1 4.25.1	At 70±2℃ for 1,000 hours; RCWV applied for 1.5 hours on and 0.5 hour off, still air required	±(1%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(3%+0.05Ω) for 5% tol. <100mΩ for jumper
High Temperature Exposure	MIL-STD 202 Method 108 IEC 60068-2-2	1,000 hours at maximum operating temperature depending on specification, unpowered	±(1%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(2%+0.05Ω) for 5% tol. <50mΩ for jumper
Moisture Resistance	MIL-STD-202 Method 106	Each temperature / humidity cycle is defined at 8 hours (method 106), 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	±(0.5%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(2%+0.05Ω) for 5% tol. <100mΩ for jumper
Thermal Shock	MIL-STD-202 Method 107	-55/+125℃ Note Number of cycles required is 300 Devices mounted Maximum transfer time is 20 seconds Dwell time is 15 minutes. Air - Air	±(0.5%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(1%+0.05Ω) for 5% tol. <50mΩ for jumper
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	±(1%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(2%+0.05Ω) for 5% tol. <50mΩ for jumper No visible damage
Board Flex/ Bending	IEC 60115-1 4.33	Device mounted or as described only 1 board bending required 3 mm bending time: 60±5 seconds	±(1%+0.05Ω) <50mΩ for jumper No visible damage
Solderability - Wetting	J-STD-002 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	J-STD-002 test D	Leadfree solder ,260°C, 30 seconds immersion time	No visible damage
-Resistance to Soldering Heat	MIL-STD 202 Method 210 IEC 60115-1 4.18	Condition B, no pre-heat of samples Leadfree solder, 260 °C ±5℃, 10 ±1 seconds immersion time Procedure 2 for SMD: devices fluxed and cleaned with isopropanol	±(0.5%+0.05Ω) for 0.1%/ 0.5%/ 1% tol. ±(1%+0.05Ω) for 5% tol. <50mΩ for jumper

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	2016-07-26		- First issue of this specification