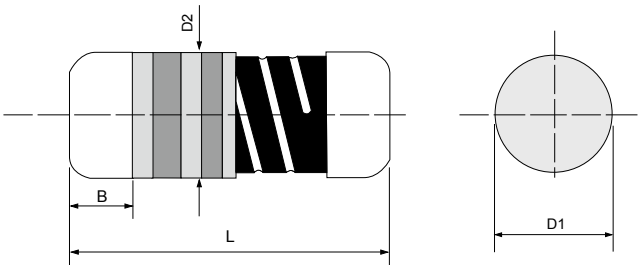
ALTERNATION HISTORY RECORDS 变更记录

Date 日期	Version 版本	Mark 标记	Page 页码	Description 描述	Drafter 制定者	Approver 审批者
2019-4-25	A	/	5	首次发行	常斯琴	彭旭

RCM Series

Carbon Film MELF Resistor



1.Specifications Per

- IEC 60115-1
- MIL-R-226848

2. Features

- SMD enabled structure
- Excellent solderability termination
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

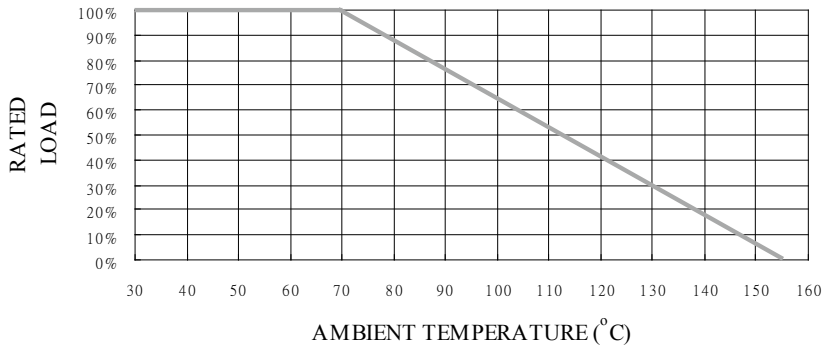
Type	Body Length (L, mm)	Cap Diameter (D1, mm)	Body Diameter (D2, mm)	Soldering Spot (B, mm)	Net Weight Per 1000 pcs
RCM204	3.52 ± 0.15	1.35 ± 0.1	D1+0.02/ -0.15	0.6 Min.	17 grams
RCM207	5.90 ± 0.20	2.20 ± 0.1	D1+0.02/ -0.2	1.0 Min.	66 grams
RCM52	5.90 ± 0.20	2.20 ± 0.1	D1+0.02/ -0.2	1.0 Min.	66 grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
RCM204	1/4W	200V	300V	0, 0.51Ω	1MΩ	±5%	E-24
RCM207	1/3W	300V	600V	0, 0.51Ω	10MΩ	±5%	E-24
RCM52	1/2W	350V	600V	0, 0.51Ω	10MΩ	±5%	E-24

For 10m~510mΩ please RCSM series.
Special sizes, values, and specifications not listed available on special order.

POWER DERATING CURVE



RCM Series
Carbon Film MELF Resistor

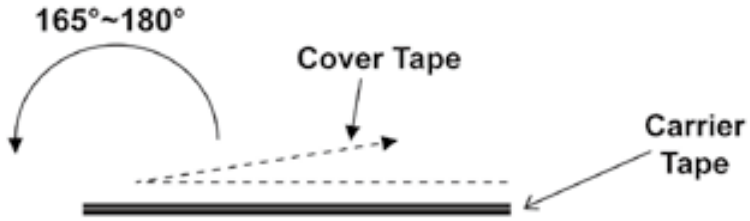
TECHNICAL SUMMARY

Characteristics	Limits			
Dielectric Withstanding Voltage, VAC or DC	RCM204: 200, RCM207,RCM52: 500			
Temperature Coefficient, PPM / °C	RCM204		RCM207 & RCM52	
	1Ω~33K	±300	1Ω~33K	±300
	33K~330K	- 500	33K~330K	- 500
	330K~470K	- 700	330K~470K	- 700
	470K~910K	-1000	470K-1M	-1000
	Over 910K	-1500	Over 1M	-1500
Operating Temperature Range, °C	-55 ~ +155			
Insulation Resistance, MΩ	$>10^4$			
Tin Whisker (JESD201 Temperature Cycling & High Temp. /Humidity Storage), μm	<5			

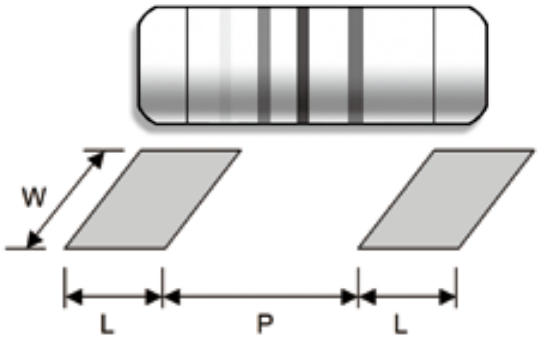
COVER TAPE PEELING SPECIFICATION

Recommended peeling force:

RCM204, RCM207, RCM52: 50±5gf



SUGGESTED PAD LAYOUT



Type	Soldering Mode	Pad Length (L, mm, Min.)	Pad Spacing (P, mm)	Pad Width (W, mm, Min.)
RCM204	Reflow	1.3	1.6 ± 0.1	1.6
	Wave	1.5	1.5 ± 0.1	1.8
RCM207	Reflow	2.0	3.0 ± 0.1	3.0
	Wave	2.5	3.0 ± 0.1	3.0
RCM52	Reflow	2.0	3.0 ± 0.1	3.0
	Wave	2.5	3.0 ± 0.1	3.0

For better heat dissipation / lower heat resistance, increase W & L.

RCM Series
Carbon Film MELF Resistor

PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Overload	**IEC 60115-1 4.13** 5 seconds 2.5x rated voltage (not over max. overload voltage)	± 1%
Load Life In Humidity	**IEC 60115-1 4.24** 56 days rated load (not over max. working voltage) at (40±2)°C and (93±3)% relative humidity	± 5%
Load Life	**IEC 60115-1 4.25.1** Rated load (not over max. working voltage) 1,000 hours with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	± 3%
Periodic Electric Overload	**IEC 60115-1 4.39** 3.9x rated voltage (not over max. overload voltage) with 0.1s ON, 2.5s OFF for 1,000 cycles	± 2%
Resistance To Soldering Heat	**IEC 60115-1 4.18.2** Dip the resistor into a solder bath measured (260±5)°C and hold it for 10±1 seconds	± 1%
Solderability	**IEC 60115-1 4.17.2** Solder area covered after (230±3)°C/(2±0.2) seconds with flux applied	95% min. coverage
Vibration	**IEC 60115-1 4.22** Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 1.52mm and 10 to 2,000 Hz.	± 1%
Thermal Endurance	**IEC 60115-1 4.25.3** 1000 hours at 155°C without load	± 1%
Thermal Shock	**IEC 60115-1 4.19** -55°C 30minutes, +155°C 30minutes, 5 cycles	± 1%
Single pulse high voltage overload	**IEC 60115-1 4.27** 10 pulses of 10/700μs at 10x rated voltage (not over max. overload voltage) with interval of 60 sec.	± 2%
Electrostatic discharge (Human body model)	**IEC 60115-1 4.38** 3 positive & 3 negative discharges with 2KV for CM16, CM204 or 4KV for CM207, CM52 (For continu ous surge application please see Surge Performance paragraph)	± 5%
Climatic test	**IEC 60115-1 4.23** 4.23.2 - dry heat: 16 hours 155°C 4.23.3 - damp heat: 24 hours 55°C with 95% relative humidity 4.23.4 - cold: 2 hours -55°C 4.23.5 - negative air pressure: 2 hour 8.5KPa at (25±10)°C 4.23.6 - damp heat cyclic: 5 days 55°C with 95% relative humidity 4.23.7 - DC load: rated voltage at -55°C and 155°C each 1 Min.	± 2%
Bending test	**IEC 60115-1 4.33** Pressing depth 2mm, 3 times	± 0.25%
Flammability	**IEC 60115-1 4.35** Needle flame test 10s	No burning after 30s

RCM Series
Carbon Film MELF Resistor

PART NUMBER

Example: **RCM2041/4W22RK300ppmNIL**

RCM204	1/4W	22R	K	300ppm	NIL
Type	**Power**	Resistance	Tolerance	TCR	Packaging
	1/4W	22R=22Ω 22K=22KΩ 1M=1MΩ R = 1 K = 10^3 M = 10^6 G = 10^9	J (5%) K (10%) M (20%)	**3-7-character code** **TYL=Typical** TCR=±300ppm=300ppm	Nil = Bulk **T/R = Tape and Reel** **T/B = Tape and Box**