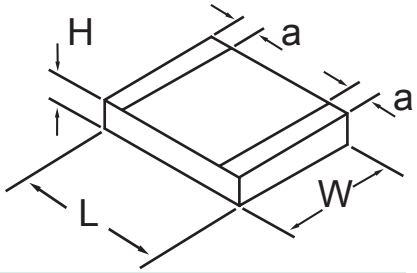
ENHANCED POWER THICK FILM CHIP RESISTOR (WITH ANTI-SURGE & PULSE WITHSTANDING OPTION)

RMCP

LEADFREE
RoHS Compliant

FEATURES

- Resistances from 1Ω to 10MΩ
- 1% and 5% tolerances
- Automotive AEC-Q200
- RoHS compliant / lead-free
- Operating Temperature: -55°C to +155°C



MECHANICAL SPECIFICATIONS

Type	L Body Length	W Body Width	H Body Height	a Termination	Units
RMCP10 (0402)	1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.20 ± 0.10	mm
RMCP18 (0603)	1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	mm
RMCP14 (0805)	2.00 ± 0.15	1.20 ± 0.15	0.50 ± 0.10	0.40 ± 0.20	mm
RMCP13 (1206)	3.10 ± 0.15	1.60 ± 0.15	0.55 ± 0.15	0.50 ± 0.25	mm
RMCP12 (1206)	3.10 ± 0.15	1.60 ± 0.15	0.55 ± 0.15	0.50 ± 0.25	mm
RMCP34 (1210)	3.10 ± 0.15	2.60 ± 0.15	0.55 ± 0.15	0.50 ± 0.25	mm
RMCP01 (2010)	5.00 ± 0.20	2.50 ± 0.20	0.60 ± 0.15	0.60 ± 0.25	mm
RMCP02 (2512)	6.35 ± 0.20	3.10 ± 0.20	0.60 ± 0.15	0.60 ± 0.25	mm

PART NUMBERING SYSTEM

RMCP 02 — 100 J T AP

Type
RMCP

Code	Wattage
10	1/10W
18	1/8W
14	1/4W
13	1/3W
12	1/2W
34	1/2W
01	1W
02	2W

Resistance Tolerance	
D	0.5%
F	1%
J	5%

Packaging	
Code	Description
T	Tape & Reel

Anti-Surge & Pulse Withstanding Option	
Nil	Regular
AP	Anti-Surge & Pulse Withstanding
AS	Anti-Sulfur

3 DIGIT CODE (5% Tolerance)							
Resistance Value							
Code	1R0	100	101	102	103	104	105
Values	1Ω	10Ω	100Ω	1KΩ	10K	100K	1M

5% Tolerance: First two digits are significant figures and third digit is number of zeros.
Letter "R" indicates decimal values under 100 ohms.

4 DIGIT CODE (1% Tolerance)						
Resistance Value						
Code	10R0	1000	1001	1002	1003	1004
Values	10Ω	100Ω	1K	10K	100K	1M

1% Tolerance: First three digits are significant figures and fourth digit is number of zeros.
Letter "R" indicates decimal values under 100 ohms.

ELECTRICAL SPECIFICATIONS

Type	Package Type	Power Rating (Watts) @ 70°C	Maximum Working Voltage*	Maximum Overload Voltage	Tolerance, Ohmic Range and Temperature Coefficient		
					0.5%	1%	5%
RMCP10	0402	1/10W	50V	100V	1Ω - 9.76Ω ±200PPM 10Ω - 1MΩ ±100PPM	1Ω - 9.76Ω ±200PPM 10Ω - 1MΩ ±100PPM	1Ω - 10MΩ ±200PPM
RMCP18	0603	1/8W	50V	100V			
RMCP14	0805	1/4W	150V	300V			
RMCP13	1206	1/3W	200V	400V			
RMCP12	1206	1/2W	200V	400V			
RMCP34	1210	1/2W	200V	500V			
RMCP01	2010	1W	200V	400V			
RMCP02	2512	2W	300V	600V			

Jumper: 0603 maximum resistance Rmax ≤ 20mΩ and rated current Ir ≤2A
0805, 1206 maximum resistance Rmax ≤ 20mΩ and rated current Ir ≤4A
2010, 2512 maximum resistance Rmax ≤ 20mΩ and rated current Ir ≤6A

SPECIFICATIONS AND TEST METHODS

Item	Specification	Test Method
DC Resistance	J: ±5%, F: ±1%	IEC 60115-1 4.5 / JIS C 5202 5.1 Measure the resistance value
Short time overload	J: ΔR ≤ ±(2% + 0.1Ω) F: ΔR ≤ ±(1% + 0.05Ω)	IEC 60115-1 4.13 / JIS C 5202 5.5 5 x rated voltage or max. overload voltage for 5 sec. measure resistance after 30 minutes
Solderability	Over 95% of termination must be covered with solder	IEC 60115-1 4.17 / JIS C 5202 6.5 After immersing flux, dip in the 245 ± 2°C molten solder bath for 3 ± 0.5 sec
Resistance to solder heat	J: ΔR ≤ ±(1% + 0.1Ω) F: ΔR ≤ ±(0.5% + 0.05Ω) No mechanical damage	IEC 60115 4.18 / JIS C 5202 6.4 With 260 ± 5°C for 10 ± 1 sec.
Temperature coefficient of resistance (TCR)	J: ±200ppm/°C F: ±100ppm/°C	IEC 60115-1 4.8.4.2 / JIS C 5202 C 5202 5.2 Test temperature: 25°C(T1) -> -55°C(T2) 25°C(T1) -> 155°C(T2) $TCR(ppm/°C) = \frac{R2 - R1}{R1} \times \frac{1}{T2-T1} \times 10^6$ T1: 25°C T2: Test Temperature R1: Resistance at referance temperature (T1) R2: Resistance at referance temperature (T2)
Load life humidity	J: ΔR ≤ ±(3% + 0.1Ω) F: ΔR ≤ ±(1% + 0.05Ω)	IEC 60115-1 4.24.2 / JIS C 5202 7.9 Maintain the temperature at the resistor at 40 ± 2°C and 90-95% R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/-0 hours. After 1~4 hour, measure the resistance value
Load life	J: ΔR ≤ ±(3% + 0.1Ω) F: ΔR ≤ ±(1% + 0.05Ω)	IEC 60115-1 4.25.1 / JIS C 5202 7.10 Permanent resistance change after 1000+48/-0 hours 1.5 hours ON, 0.5 hours OFF at RCWV or max. Keep the resistor at 70 ± 2°C ambient.
Temperature cycle	J: ΔR ≤ ±(1% + 0.1Ω) F: ΔR ≤ ±(0.5% + 0.05Ω) No mechanical damage	IEC 60115-1 4.25.1 /JIS C 5202 7.4 Repeat 5 cycles as follow: -55°C(30 min.) ~ +25°C(2~3 min.) +155°C(30 min) ~ +25°C(2 ~ 3 min.)
Insulation resistance	Between termination and coating must be over 1000MΩ	IEC 60115-1 4.6.1.1 / JIS C 5202 5.6 Test voltage: 100 ± 15V
Bending strength	J: ΔR ≤ ±(1% + 0.1Ω) F: ΔR ≤ ±(0.5% + 0.05Ω) No mechanical damage	IEC 60115-1 4.33 Resistance change after bended on the 90mm PCB. Bend: 3mm for 0603, 0805 2mm for 1206, 2010, 2512