

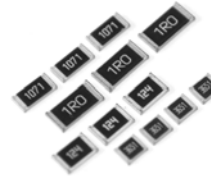
THICK FILM CHIP RESISTORS

(RMC SERIES)

On a high grade ceramic body(aluminium oxide) a metal glaze layer is screened. Depending on the composition of the metal glaze different resistance values can be obtained. On both ends a contact is made in such a way that optimum solderability is guaranteed. This is achieved by applying three layers. The resistive layer is covered with a protective coat.

Features

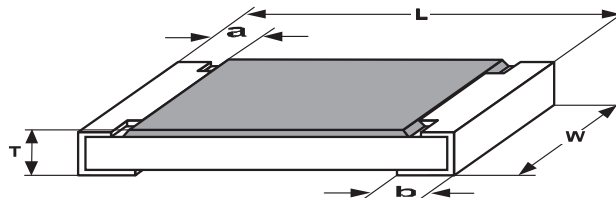
1. Miniature size can compact P.C. Board.
2. 8mm tape carrier packaging available for automatic surface mounting.
3. Excellent mechanical strength and electrical stability.
4. Reduce assembly costs.



Options

- Option 'AS' Anti-Sulfurate, suitable for Automotive industry, meet AEC - Q 200 test
Test condition H₂S 1000ppm 25°C
RH 90% 720 Hours
 $\Delta R \leq \pm 1\%$
- Option 'NM' Non-magnetic by copper plating on middle termination, suitable for medical equipment, MRI industry and Automotive industry
Non-magnetic chip resistors pass 3000 gauss magnetic detection

Dimensional Specifications



Style	Dimensions : mm				
	L	w	a	b	T
RMC-02 0201	0.60 ±0.08	0.30 ±0.03	0.13 ±0.08	0.15 ±0.05	0.23 ±0.05
RMC-04 0402	1.00 ±0.10	0.50 ±0.005	0.20 ±0.10	0.25 ±0.10	0.35 ±0.05
RMC-06 0603	1.60 ±0.10	0.80 ±0.10	0.30 ±0.20	0.30 ±0.20	0.45 ±0.10
RMC-10 0805	2.00 ±0.10	1.25 ±0.10	0.35 ±0.20	0.40 ±0.20	0.50 ±0.10
RMC-18 1206	3.10 ±0.20	1.55 ±0.10	0.50 ±0.25	0.50 ±0.25	0.55 ±0.10
RMC-20 1210	3.10 ±0.20	2.60 ±0.15	0.50 ±0.25	0.50 ±0.20	0.55 ±0.10
RMC-22 2010	5.00 ±0.20	2.50 ±0.15	0.60 ±0.25	0.50 ±0.20	0.55 ±0.10
RMC-24 2512	6.35 ±0.20	3.20 ±0.15	0.60 ±0.25	0.50 ±0.20	0.55 ±0.10
RMC-26 1812	4.50 ±0.10	3.00 ±0.10	0.55 ±0.10	0.80 ±0.10	0.55 ±0.10
RMC-28 1218	3.10 ±0.10	4.60 ±0.10	0.45 ±0.10	0.40 ±0.10	0.55 ±0.10



General Specification

style	RMC-02 0201	RMC-04 0402	RMC-06 0603	RMC-10 0805	RMC-18 1206	RMC-20 1210	RMC-22 2010	RMC-24 2512	RMC-26 1812	RMC-28 1218
Power Rating @70°C	1/20W	1/16W	1/10W	1/8W	1/4W	1/2W	3/4W	1W	0.5W	1W
Operating Temp. Range	-55°C to +155°C						0402-1218			
	-55°C to +125°C						0201			
Maximum Working Voltage	15V	50V	50V	150V	200V	200V	200V	200V	200V	200V
Maximum Overload Voltage	30V	100V	100V	300V	400V	400V	400V	400V	400V	400V
Resistance Range										
1%, E-96	1Ω~1MΩ	1Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ	10Ω~1MΩ
5%, E-24	10Ω~1MΩ	1Ω~10MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ	1Ω~1MΩ
Zero Ohm Jumper <0.05Ω			10.2M~100M	10.2M~100M	10.2M~100M					
±100ppm/°C							10Ω~1MΩ			
TCR ±200ppm/°C	1Ω~10MΩ						1Ω~10Ω>1MΩ~20MΩ			
TCR ±400ppm/°C							20.5MΩ~100MΩ			

*Resistances higher than 10M are available upon request

*10" and 13" reels are available upon request

Marking



RMC-06(0603)

RMC-10(0805)

RMC-18(1206)

5% marking

RMC-20(1210)

Value=10KΩ

RMC-22(2010)

RMC-24(2512)

RMC-26(1812)

RMC-28(1218)

1% marking

Value=12.4KΩ



RMC-06(0603)

EIA-96

marking



1% marking

Value=10KΩ



No Marking

RMC-10(0805)

RMC-18(1206)

RMC-20(1210)

RMC-22(2010)

RMC-24(2512)

RMC-26(1812)

RMC-28(1218)

RMC-04(0402)

RMC-02(0201)

- 5% tolerance: 3 digits

First two digits are significant figure,

Third digit is number of zeros, Letter R is decimal point.

- 1% tolerance: 4 digits, first three digits are significant figure, Letter R is decimal point.

- 0201 and 0402 no marking

- Standard packaging is 8mm tape reel per EIA481

- Paper tape 7" reel, RMC-02:10,000pcs or 15,000pcs, RMC-04:10,000pcs, RMC-06/18/ 20: 5,000pcs

- Plastic tape 7" reel, RMC-22/24/26/28:4K/reel

- 0603% : EIA-96 marking

EIA-96 Marking

code	R Value	code	R Value	code	R Value	code	R Value	code	R Value	code	R Value	code	R Value	code	R Value
01	100	13	133	25	178	37	237	49	316	61	422	73	562	85	750
02	102	14	137	26	182	38	243	50	324	62	432	74	576	86	768
03	105	15	140	27	187	39	249	51	332	63	442	75	590	87	787
04	107	16	143	28	191	40	255	52	340	64	453	76	604	88	806
05	110	17	147	29	196	41	261	53	348	65	464	77	619	89	825
06	113	18	150	30	200	42	267	54	357	66	475	78	634	90	845
07	115	19	154	31	205	43	274	55	365	67	487	79	649	91	866
08	118	20	158	32	210	44	280	56	374	68	499	80	665	92	887
09	121	21	162	33	215	45	287	57	383	69	511	81	681	93	909
10	124	22	165	34	221	46	294	58	392	70	523	82	698	94	931
11	127	23	169	35	226	47	301	59	402	71	536	83	715	95	953
12	130	24	174	36	232	48	309	60	412	72	549	84	732	96	976

This table shows the first two digits for the three-digit EIA-96 part marking scheme. The third character is a letter multiplier:

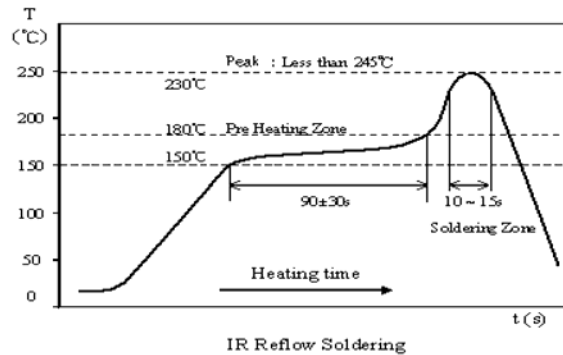
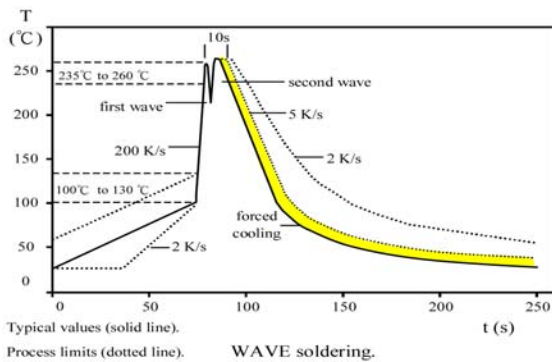
⁻² Y=10 ⁻¹ X=10 ⁰ A=10 ¹ B=10 ² C=10 ³ D=10 ⁴ E=10 ⁵ F=10



Characteristics

Performance test	test method	1%Tolerance	5%Tolerance
Thermal Shock	MIL-STD-202F, Method 107 5 cycles, -65°C to +155°C	$\pm(0.5\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$
Low Temperature Operation	MIL-R-55342D, Para.4.7.4 One hour at -65°C followed by 45 minutes RCWV	$\pm(0.5\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$
Short time Overload	MIL-R-55342D, Para.4.7.5 2.5 times RCWV for 5 seconds	$\pm(1.0\%+0.05\Omega)$	$\pm(2.0\%+0.05\Omega)$
High Temperature	MIL-R-55342D, Para.4.7.6 125°C to 100 hours	$\pm(1.0\%+0.05\Omega)$	$\pm(2.0\%+1\Omega)$
Resistance to Soldering Heat	MIL-R-55342D, Para.4.7.7 Soldered to test board at 260°C for 10 seconds	$\pm(0.5\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$
Moisture Resistance	MIL-STD-202F, Method 106 10 cycles. Total 240 hours	$\pm(0.5\%+0.05\Omega)$	$\pm(2.0\%+0.05\Omega)$
Life	MIL-STD-202F, Method 108A 1000 hours at 70°C RWV intermittent	$\pm(1.0\%+0.05\Omega)$	$\pm(3.0\%+0.1\Omega)$
Solderability	MIL-STD-202F, Method 208 230°C for 5 seconds	95%min. coverage	95%min. coverage
Bending Strength	Unit mounted in center 208 90mm board length, deflected for 5 seconds	$\pm(1.0\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$
Temperature Coefficient (by Type)	MIL-STD-202F, Method 304 -55°C to +125°C	$\pm 100 \text{ ppm}/^\circ\text{C}$, $\pm 200 \text{ ppm}/^\circ\text{C}$, $\pm 400 \text{ ppm}/^\circ\text{C}$	

Soldering Temp. Curve



Parts Number System

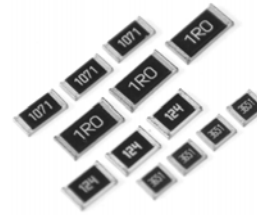
RMC-10		1002	F	R
Size		Resistance	Tolerance	Standard Packing
RMC-02(0201)	RMC-20(1210)	Please refer to marking explanation 000: Jumper 0 ohm	F= $\pm 1\%$	R=Paper tape reel
RMC-04(0402)	RMC-22(2010)		J= $\pm 5\%$	K=Embossed plastic tape reel
RMC-06(0603)	RMC-24(2512)		on request	B=Bulk bag
RMC-10(0805)	RMC-26(1812)			Please refer to packaging explanation
RMC-18(1206)	RMC-28(1218)			



Anti-Sulfurated Thick Film Chip Resistors - RAS Series

Features -

Special construction to prevent sulfuration under a sulfur containing environment



Applications -

- Automotive and Controller
- Medical Equipment
- Outdoor Electronic Applications

Special Test of Sulfur

Test Method - 3~5ppm H₂S, 50±2°C, 91~93% R.H. No load 1000hrs

Requirement- $\Delta R \leq \pm 0.5\%$

Dimensional Spec and characteristics are the same as RAS series
Resistance range 1 ohm - 10M 0.5, 1 and 5% tolerance available

Parts Number System

RAS-10	1002	FR		AS
Size	Resistance	Tolerance	Standard Packing	
RAS-04(0402)	Please refer to marking explanation 000=Jumper 0 ohm	F= ±1%	R=Paper tape reel	AS - Anti-Sulfurate NM - Non-Magnetic
RAS-06(0603)		J = ±5%	K=Embossed plastic tape reel	
RAS-10(0805)		on request	B=Bulk bag	
RAS-18(1206)			Please refer to packaging explanation	
RAS-20(1210)				
RAS-22(2010)				
RAS-24(2512)				

