

Metal thin film resistor networks

■ RM series

AEC-Q200 Compliant

Features

- Ultra accuracy: relative resistance tolerance $\pm 0.01\%$, relative TCR $\pm 1\text{ppm}/^{\circ}\text{C}$
- Ultra reliability: 10,000 hours of $85^{\circ}\text{C}/85\text{RH}$ test or 10,000 of 155°C high temperature exposure test causes less than $\pm 0.1\%$ resistance drift

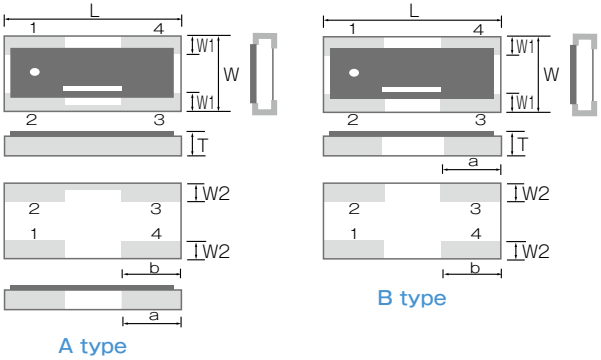
Applications

- Applications that require a precise relative resistance ratio such as voltage dividers, and gain-setting circuits for amplifiers.

Specifications

*All products are made to order.

Dimensions



Dimension (inch)	RM2012 (0805)	RM3216 (1206)
L	2.00 ± 0.20	3.20 ± 0.20
W	1.25 ± 0.20	1.60 ± 0.20
W1	0.40 ± 0.20	0.40 ± 0.25
W2	0.35 ± 0.20	0.40 ± 0.20
a	0.50 ± 0.20	1.00 ± 0.25
b	0.60 ± 0.20	1.00 ± 0.20
T	0.40 ± 0.10	0.40 ± 0.10

(unit : mm)

Electrical characteristics

Series name	RM2012		RM3216	
Rated power	High power application		0.05W/Element, 0.1WPackage	
Resistance range (Ω)	100 ~ < 300	300 ~ 100kΩ	100 ~ < 300	300 ~ 330kΩ
Resistance tolerance (%)	± 0.05 (w)	—	—	—
	± 0.1 (B)	○	○	○
	± 0.5 (D)	○	○	○
Relative resistance tolerance (%)	± 0.01 (L)	Resistance ratio=1		Resistance ratio=1
	± 0.02 (P)	Resistance ratio ≤ 10		Resistance ratio ≤ 10
	± 0.05 (W)	Resistance ratio ≤ 100		Resistance ratio ≤ 100
Temperature coefficient of resistance (ppm/°C)	± 10 (N)	—	—	—
	± 25 (P)	○	○	○
Relative TCR (ppm/°C)	± 1 (X)	Resistance ratio=1		Resistance ratio=1
	± 2 (W)	1 < Resistance ratio ≤ 3		1 < Resistance ratio ≤ 3
	± 5 (V)	Resistance ratio > 3		Resistance ratio > 3
Maximum voltage / element	25V		50V	
Operating temperature	$-55^{\circ}\text{C} \sim 155^{\circ}\text{C}$		$-55^{\circ}\text{C} \sim 155^{\circ}\text{C}$	
Packaging	1,000pcs	Code10	1,000pcs	Code10
	5,000pcs	Code50	5,000pcs	Code50

* Relative resistance tolerance is defined as the ratio of the actual R2/R1 against the specified R2/R1 as expressed:

$$\left[\frac{\text{actual R2/R1}}{\text{specified R2/R1}} - 1 \right] \times 100$$

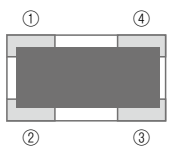
* Relative TCR is defined as : (TCR of R2)-(TCR of R1)

Standard resistance value pairings

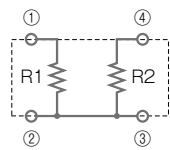
Ratio	R1 (Ω)	R2 (Ω)	Ratio	R1 (Ω)	R2 (Ω)	Ratio	R1 (Ω)	R2 (Ω)	Ratio	R1 (Ω)	R2 (Ω)	Ratio	R1 (Ω)	R2 (Ω)	Ratio	R1 (Ω)	R2 (Ω)
1 : 1	1k	1k	1 : 3	1k	3k	1 : 5	1k	5k	1 : 9	1k	9k	1 : 20	1k	20k	1 : 50	1K	50k
	10k	10k		10k	30k		2k	10k		10k	90k		2k	40k		2K	100k
	100k	100k		100k	300k		10k	50k		1k	10k		5k	100k		1K	100k
1 : 2	1k	2k	1 : 4	1k	4k	1 : 6	1k	6k	1 : 10	2k	20k	1 : 25	1k	25k	1 : 100	2K	200k
	10k	20k		10k	40k		10k	60k		10k	100k		2k	50k			
	100k	200k															

Standard circuits

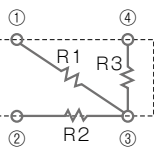
2012/3216Size



Outside appearance

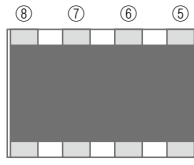


Circuit diagram : A type

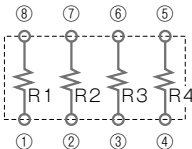


Circuit diagram : B type

3216Size 4 element type (array, network with different resistance values)

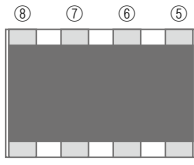


Outside appearance

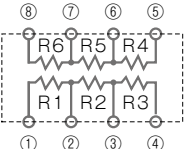


Circuit diagram

3216Size 6 element type



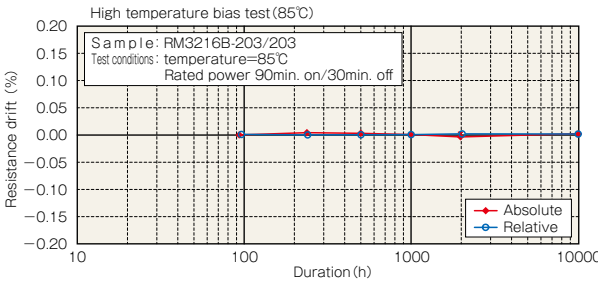
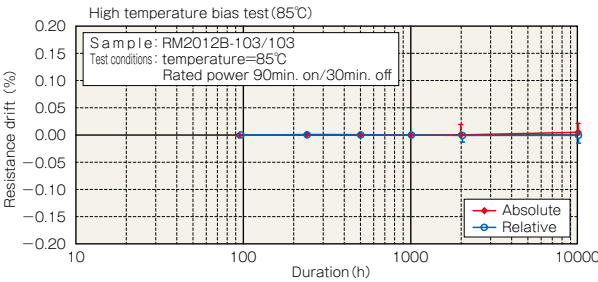
Outside appearance



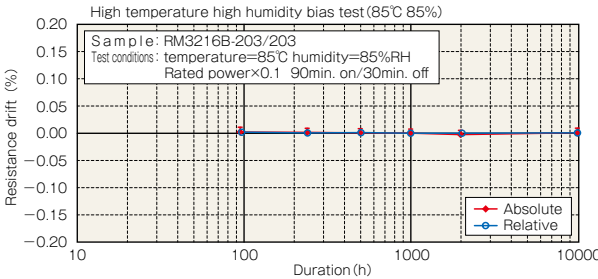
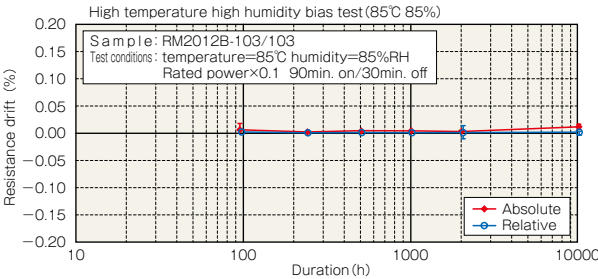
Circuit diagram

10000 hour reliability test data

Life test



High temperature high humidity bias test



Part numbering system

RM 2012 A - * / *** - P W X L 10** — Packaging:10(1000pcs) 50(5000pcs)

Series code circuits Size Relative resistance tolerance Relative TCR Absolute resistance tolerance Absolute TCR Resistance value (R1/R2)

Please contact us for specific custom requirements for resistance values, resistance ratios, number of elements, circuitry and any others.