

# RM series, ultra-precision & ultra-reliability metal film chip network resistors



Tight tracking resistance tolerance of  $\pm 0.01\%$  and tracking temperature coefficient of resistance of  $\pm 1\text{ppm}/^\circ\text{C}$  are achieved. Under high temperature and humid condition of  $85^\circ\text{C}$  and  $85\%\text{RH}$ , and at  $155^\circ\text{C}$ (duration:10000 hours for both tests), superior reliability of only less than  $\pm 0.1\%$  of change in resistance value is realized.

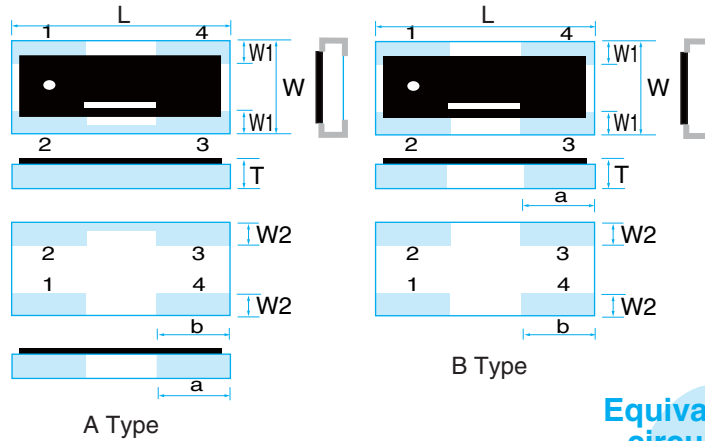
RoHS compliant

Completely lead free



## SPECIFICATIONS

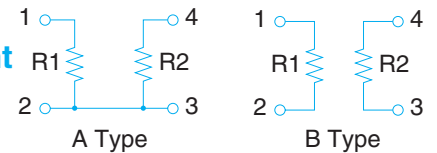
### Mechanical



Dimension (Inch Size)	RM2012 (0805)	RM3216 (1206)
L	$2.0 \pm 0.2$	$3.2 \pm 0.2$
W	$1.25 \pm 0.2$	$1.6 \pm 0.2$
W1	$0.4 \pm 0.2$	$0.4 \pm 0.25$
W2	$0.35 \pm 0.2$	$0.4 \pm 0.2$
a	$0.5 \pm 0.2$	$1.0 \pm 0.25$
b	$0.6 \pm 0.2$	$1.0 \pm 0.2$
T	$0.4 \pm 0.1$	$0.4 \pm 0.1$

(unit : mm)

### Equivalent circuits



### Electrical

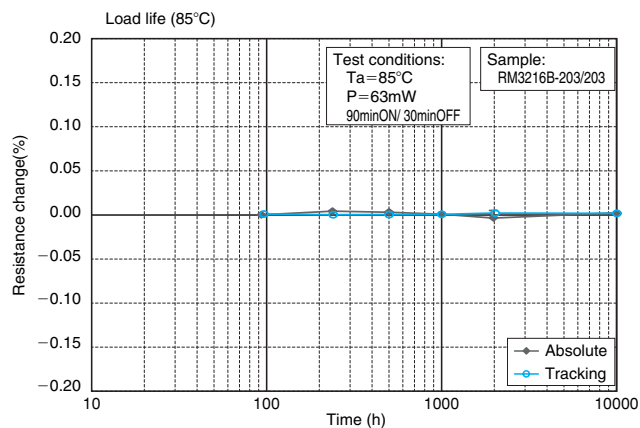
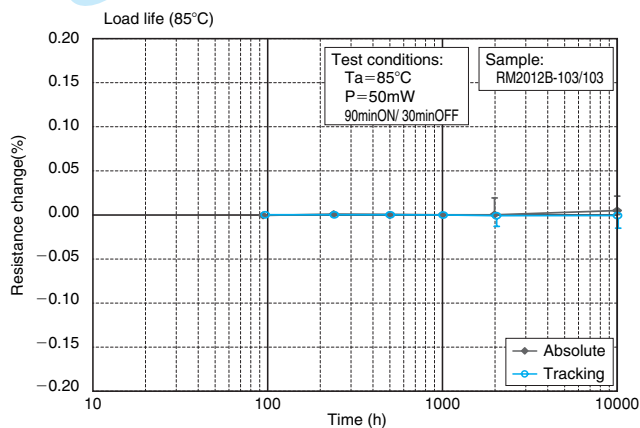
Type	RM 2012		RM 3216	
Power	0.05W/element,0.1W/package		0.063W/element,0.125W/package	
Resistance Range ( $\Omega$ )	100~100k $\Omega$		100~330k $\Omega$	
Absolute Tol. %(code)	$\pm 0.1(\text{B}), \pm 0.5(\text{D})$ ( $100 \leq R < 2\text{k}\Omega$ )	$\pm 0.05(\text{W}), 0.1(\text{B}), \pm 0.5(\text{D})$ ( $2\text{k}\Omega \leq R \leq 100\text{k}\Omega$ )	$\pm 0.1(\text{B}), \pm 0.5(\text{D})$ ( $100 \leq R < 2\text{k}\Omega$ )	$\pm 0.05(\text{W}), 0.1(\text{B}), \pm 0.5(\text{D})$ ( $2\text{k}\Omega \leq R \leq 330\text{k}\Omega$ )
Tracking Tol. %(code)	$\pm 0.01(\text{L}), \pm 0.02(\text{P}), \pm 0.05(\text{W})$ (ratio=1) $\pm 0.02(\text{P}), \pm 0.05(\text{W})$ ( $1 < \text{ratio} \leq 10$ ) $\pm 0.05(\text{W})$ ( $100 \geq \text{ratio} > 10$ )		$\pm 0.01(\text{L}), \pm 0.02(\text{P}), \pm 0.05(\text{W})$ (ratio=1) $\pm 0.02(\text{P}), \pm 0.05(\text{W})$ ( $1 < \text{ratio} \leq 10$ ) $\pm 0.05(\text{W})$ ( $100 \geq \text{ratio} > 10$ )	
Absolute TCR ppm/ $^\circ\text{C}$ (code)	$\pm 25(\text{P})$ ( $100 \leq R < 300\Omega$ )	$\pm 10(\text{N}), \pm 25(\text{P})$ ( $300 \leq R \leq 100\text{k}\Omega$ )	$\pm 25(\text{P})$ ( $100 \leq R < 300\Omega$ )	$\pm 10(\text{N}), \pm 25(\text{P})$ ( $300 \leq R \leq 330\text{k}\Omega$ )
Tracking TCR ppm/ $^\circ\text{C}$ (code)	$\pm 1(\text{X}), \pm 5(\text{V})$ (ratio=1) $\pm 2(\text{W}), \pm 5(\text{V})$ ( $1 < \text{ratio} \leq 3$ ) $\pm 5(\text{V})$ ( $100 \geq \text{ratio} > 3$ )		$\pm 1(\text{X}), \pm 5(\text{V})$ (ratio=1) $\pm 2(\text{W}), \pm 5(\text{V})$ ( $1 < \text{ratio} \leq 3$ ) $\pm 5(\text{V})$ ( $100 \geq \text{ratio} > 3$ )	
Max Operating Voltage	25V		50V	
Package	500pcs/reel(05), 1,000pcs/reel(10), 5,000pcs/reel(50)			

- Please contact us for TCR  $\pm 5\text{ppm}/^\circ\text{C}$  for  $300\Omega$  or more in RM2012, RM3216
- Please contact us for other variety than these sizes and customized specifications.

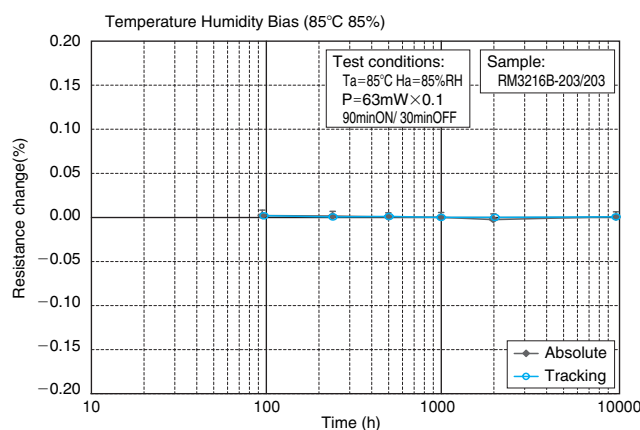
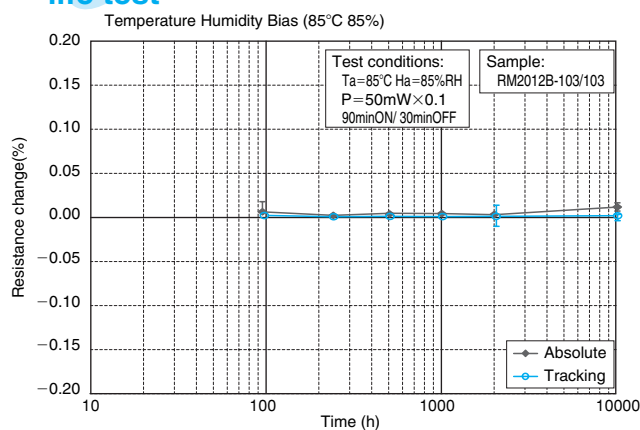
### <Standard combination of resistance values>

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

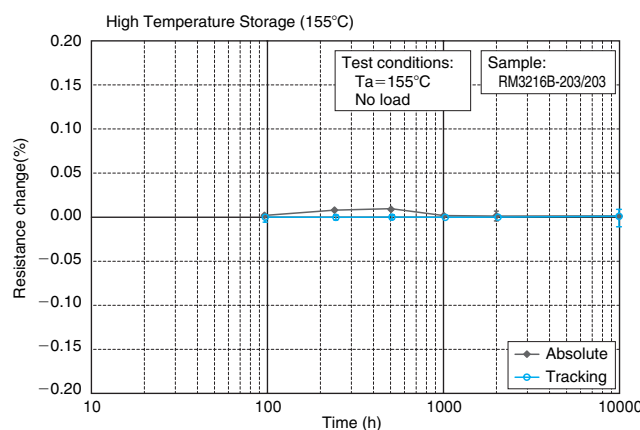
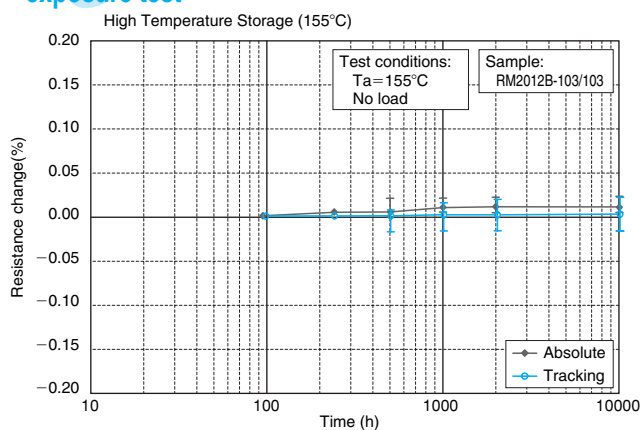
## Load life test



## Moisture and life test



## High temperature exposure test



## PART NUMBER

**RM 2012 A - \*\*\*/\*\* - P W X L 10**

- Package (05=500pcs, 10=1,000pcs, 50=5,000pcs)
- Tracking Resistance Tolerance
- Tracking Temperature Coefficient of Resistance
- Resistance Tolerance
- Temperature Coefficient of Resistance
- Resistance
- Circuit
- Dimensions
- Part Code