

## SMD Molded, 50 Mil Pitch, Dual-In-Line Thin Film Resistor Networks



 Actual Size

### DESIGN SUPPORT TOOLS AVAILABLE



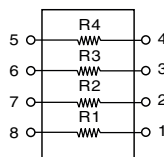
The RMKM series of small outline surface mount style molded package can accommodate resistor network to your particular application requirements in compact circuit integration. The resistor element is a special nickel chromium film formulation on oxidized silicon.

Utilizing those networks will enable you to take advantage of parametric performances which will introduce in your circuitry high thermal and load life stability (0.05 % absolute, 0.02 % ratio, 2000 h at +70 °C at P<sub>n</sub>) together with the added benefits of low noise and rapid rise time.

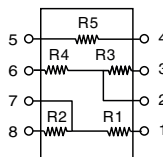
### SCHEMATIC

RMKM S408

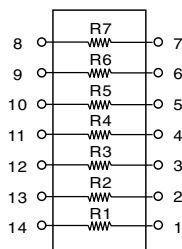
Case SO08



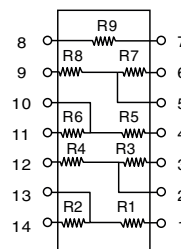
RMKM S508



RMKM S714

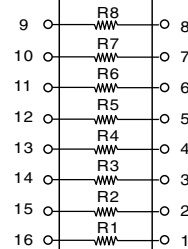


RMKM S914



RMKM S816

Case SO16



For other configurations, please consult factory.

### FEATURES

- Tight TCR tracking down to 5 ppm/°C
- Monolithic reliability
- Low noise < -35 dB
- SMD precision networks
- SO08, SO14, SO16 cases
- MSL 1 to JEDEC J-STD-020C specification



### TYPICAL PERFORMANCE

|      | ABSOLUTE  | TRACKING |
|------|-----------|----------|
| TCR  | 10 ppm/°C | 5 ppm/°C |
|      | ABSOLUTE  | RATIO    |
| TOL. | 0.1 %     | 0.05 %   |

### STANDARD ELECTRICAL SPECIFICATIONS

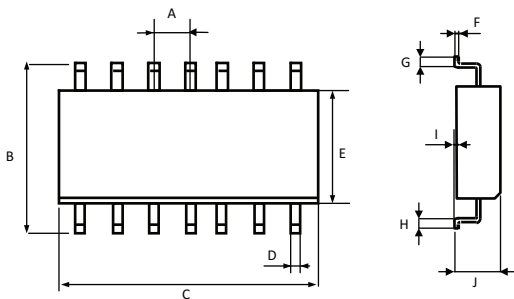
| MODEL | SIZE | RESISTANCE RANGE<br>Ω | POWER RATING PER RESISTOR<br>W | POWER RATING PER PACKAGE<br>P <sub>70 °C</sub><br>W | ABSOLUTE TOLERANCE<br>± % | RATIO TOLERANCE <sup>(2)</sup><br>± % | ABSOLUTE TCR <sup>(1)</sup><br>± ppm/°C | RATIO TCR<br>± ppm/°C |
|-------|------|-----------------------|--------------------------------|-----------------------------------------------------|---------------------------|---------------------------------------|-----------------------------------------|-----------------------|
| RMKMS | SO08 | 500 to 200K           | 0.050                          | 0.250                                               | 0.1, 0.5, 1               | 0.05, 0.1, 0.5                        | 10, 15                                  | 5                     |
| RMKMS | SO14 | 500 to 200K           | 0.050                          | 0.500                                               | 0.1, 0.5, 1               | 0.05, 0.1, 0.5                        | 10, 15                                  | 5                     |
| RMKMS | SO16 | 500 to 200K           | 0.050                          | 0.500                                               | 0.1, 0.5, 1               | 0.05, 0.1, 0.5                        | 10, 15                                  | 5                     |

#### Notes

- <sup>(1)</sup> ± 10 ppm/°C at 0 °C to +70 °C; ± 15 ppm/°C at -55 °C to ± 125 °C  
<sup>(2)</sup> 0.02 % upon request

### PERFORMANCES

| TEST                                    | SPECIFICATIONS             | CONDITION              |
|-----------------------------------------|----------------------------|------------------------|
| Stability: ΔR Absolute                  | 0.05 %                     | 2000 h at +70 °C at P  |
| Stability: ΔR Ratio                     | 0.02 %                     | 2000 h at +70 °C at P  |
| Voltage coefficient                     | < 0.1 ppm/V                |                        |
| Working voltage                         | 50 V <sub>DC</sub> maximum |                        |
| Operating temperature range             | -55 °C to +125 °C          |                        |
| Storage temperature range               | -55 °C to +155 °C          |                        |
| Noise                                   | -35 dB (typical)           | MIL-STD-202, meth. 308 |
| Thermal EMF                             | 0.1 μV/°C                  |                        |
| High temp. storage Shelf life stability | 0.075 %                    | 2000 h at +125 °C      |
|                                         | 0.025 %                    | 2000 h at +125 °C      |

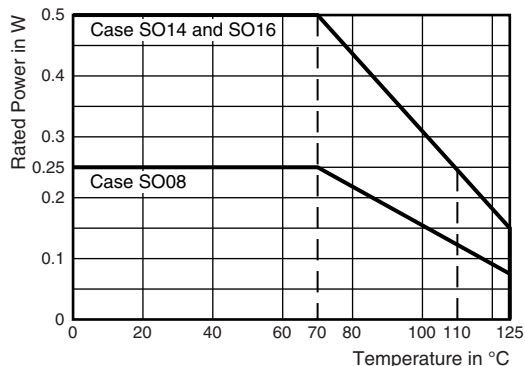
**DIMENSIONS AND IMPRINTING**

**Imprinting:**

VISHAY logo, series, ohmic value,  
tolerance, manufacturing date

| DIMENSION | INCHES      | MILLIMETERS |
|-----------|-------------|-------------|
| A         | Pitch 0.05  | Pitch 1.27  |
| B         | 0.230/0.244 | 5.84/6.2    |
| C (SO08)  | 0.189/0.196 | 4.80/4.98   |
| C (SO14)  | 0.337/0.344 | 8.56/8.74   |
| C (SO16)  | 0.386/0.393 | 9.80/9.98   |
| D         | 0.014/0.020 | 0.35/0.51   |
| E         | 0.150/0.157 | 3.81/3.99   |
| F         | 0.007/0.010 | 0.17/0.254  |
| G, H      | 0.016/0.035 | 0.40/0.89   |
| I         | 0.004/0.010 | 0.10/0.254  |
| J         | 0.061/0.068 | 1.55/1.73   |

| MECHANICAL SPECIFICATIONS |                       |         |
|---------------------------|-----------------------|---------|
| Mechanical protection     | Epoxy molded assembly |         |
| Terminal leads            | 100 % tin             |         |
| Resistive element         | Passivated nichrome   |         |
| Unit weight:              | Case SO08             | 0.070 g |
|                           | Cases SO14, SO16      | 0.146 g |

| MARKING          |       |       |       |                          |
|------------------|-------|-------|-------|--------------------------|
| TOLERANCE CODING |       |       |       |                          |
| A                | B     | D     | F     | X                        |
| 0.1 %            | 0.1 % | 0.5 % | 1 %   | 0.1 %                    |
| 0.05 %           | 0.1 % | 0.1 % | 0.5 % | 0.02 % (on request only) |

**DERATING CURVE**


| GLOBAL PART NUMBER INFORMATION                                              |   |                    |   |                                       |   |                                                    |   |                                         |   |                             |   |   |   |   |   |   |
|-----------------------------------------------------------------------------|---|--------------------|---|---------------------------------------|---|----------------------------------------------------|---|-----------------------------------------|---|-----------------------------|---|---|---|---|---|---|
| New Global Part Numbering: RMKMS408-10KFDT99 (preferred part number format) |   |                    |   |                                       |   |                                                    |   |                                         |   |                             |   |   |   |   |   |   |
| R                                                                           | M | K                  | M | S                                     | 4 | 0                                                  | 8 | -                                       | 1 | 0                           | K | F | D | T | 9 | 9 |
| GLOBAL MODEL                                                                |   | VALUE              |   | ABS. TOLERANCE                        |   | RATIO TOLERANCE                                    |   | PACKAGING                               |   | OPTION                      |   |   |   |   |   |   |
| RMKMS408<br>RMKMS508<br>RMKMS816<br>RMKMS714<br>RMKMS914                    |   | Decimal:<br>R or K |   | B = 0.1 %<br>D = 0.5 %<br>F = 1.0 %   |   | D = 0.5 %<br>B = 0.1 %<br>W = 0.05 %<br>P = 0.02 % |   | Blank = tube<br>T <sup>(1)</sup> = tape |   | Leave blank<br>if no option |   |   |   |   |   |   |
| Custom Design: CNM 1138                                                     |   |                    |   |                                       |   |                                                    |   |                                         |   |                             |   |   |   |   |   |   |
| CNM                                                                         |   | 1138               |   |                                       |   |                                                    |   |                                         |   |                             |   |   |   |   |   |   |
| GLOBAL MODEL                                                                |   | REFERENCE          |   |                                       |   |                                                    |   |                                         |   |                             |   |   |   |   |   |   |
| RMKMS 408                                                                   |   | 10K                |   | 1 % abs 0.5 % ratio                   |   | T                                                  |   | R0099                                   |   |                             |   |   |   |   |   |   |
| HISTORICAL MODEL                                                            |   | VALUE              |   | ABS. TOLERANCE AND<br>RATIO TOLERANCE |   | PACKAGING                                          |   | OPTION                                  |   |                             |   |   |   |   |   |   |
|                                                                             |   |                    |   |                                       |   | Blank = tube<br>T <sup>(1)</sup> = tape            |   | Leave blank<br>if no option             |   |                             |   |   |   |   |   |   |

**Note**

- For more information see "Codification of Packaging" table



| <b>CODIFICATION OF PACKAGING</b>                |                      |
|-------------------------------------------------|----------------------|
| <b>CODE 18</b>                                  | <b>PACKAGING</b>     |
| <b>PLASTIC TAPE (in standard for all sizes)</b> |                      |
| T                                               | 100 min., 1 mult     |
| TA                                              | 100 min., 100 mult   |
| TB                                              | 250 min., 250 mult   |
| TC                                              | 500 min., 500 mult   |
| TD                                              | 1000 min., 1000 mult |

**HISTORICAL PART NUMBER EXAMPLES**

- RMKMS816-10KBWT250 (tapes of 250 pieces)
- RMKMS816-1KDBT250 (tapes of 250 pieces)
- CNM1138T250 (tapes of 250 pieces)
- CNM1490T250 (tapes of 250 pieces)

Historical part numbers are not recommended, but can still be used for ordering.



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