



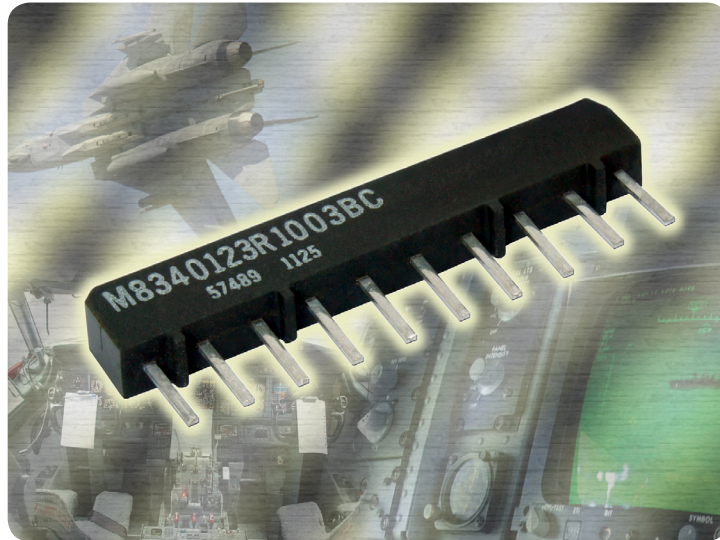
# THIN FILM RESISTOR NETWORKS

## M83401, C83401



Resistors - MIL-PRF-83401 Qualified Networks

### Thin Film Through-Hole Single-in-Line Low-Profile Resistor Network Qualified to MIL-PRF-83401



#### KEY BENEFITS

- Qualified to MIL-PRF-83401, through-hole resistor network
- Small size, low profile, seated height 0.2 inch max.
- Available in 6 pin, 8 pin, and 10 pin sizes
- Tolerances to 0.05 % ratio

#### APPLICATIONS

- Military

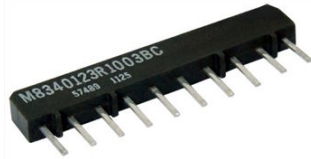
#### RESOURCES

- Datasheet: M83401, C83401 - [www.vishay.com/doc?60116](http://www.vishay.com/doc?60116)
- For technical questions, contact: [thinfilm@vishay.com](mailto:thinfilm@vishay.com)

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## Thin Film Through-Hole Single-in-Line Low-Profile Resistor Network Qualified to MIL-PRF-83401

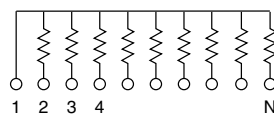


Qualified to meet MIL-PRF-83401 characteristic "R", "V", and "H"

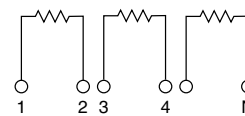
These resistor networks are available in 6 pins, 8 pins, and 10 pins in schematic C and G styles. Custom circuits are not available. Schematic C and G only. They incorporate Vishay Dale Thin Film's patented passivated nichrome film to give superior performance on temperature coefficient of resistance, thermal stability, noise, voltage coefficient, power handling and resistance stability. The leads are attached to the metallized alumina substrates by Thermo-Compression bonding. The body is molded thermoset plastic with gold plated copper alloy leads. This product will outperform all of the requirements of characteristic "R", "V", and "H" of MIL-PRF-83401.

### SCHEMATIC

C Schematic (Pin 1 Common)



G Schematic (Isolated)



### FEATURES

- MIL-PRF-83401 qualified (cage code 57489)
- Low Profile 0.195" (4.95 mm seated height)
- Characteristics R ( $\pm 25$  ppm), H, V, K, and M
- Hot fused tin/lead 60/40 solder dipped
- Rugged molded low profile construction with standoff
- 100 % screened to groups A MIL-PRF-83410 testing
- Tolerances to 0.1 %
- Isolated and bussed (schematic C and G)

### TYPICAL PERFORMANCE

TCR	ABSOLUTE	TRACKING
	25	5
TOL.	ABSOLUTE	RATIO
	0.1	0.1 to 0.05

### STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	6, 8, 10	-
Resistance Range	100 $\Omega$ to 200 k $\Omega$ per resistor	Tolerance dependent <sup>(2)</sup>
TCR: Absolute	$\pm 25$ ppm/ $^{\circ}$ C to 300 ppm/ $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C <sup>(1)</sup>
TCR: Tracking	$\pm 5$ ppm/ $^{\circ}$ C	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
Tolerance: Absolute	$\pm 0.1$ % to $\pm 5.0$ %	+ 25 $^{\circ}$ C
Tolerance: Ratio	$\pm 0.05$ % to R <sub>1</sub>	+ 25 $^{\circ}$ C
Power Rating: Resistor	0.06 mW to 0.120 mW (per element typical at + 25 $^{\circ}$ C) <sup>(1)</sup>	Maximum at + 70 $^{\circ}$ C
Power Rating: Package	0.18 W to 1.08 W <sup>(1)</sup>	Maximum at + 70 $^{\circ}$ C
Stability: Absolute	$\Delta R \pm 0.05$ %	2000 h at + 70 $^{\circ}$ C
Stability: Ratio	$\Delta R \pm 0.015$ %	2000 h at + 70 $^{\circ}$ C
Voltage Coefficient	< 0.1 ppm/V	-
Working Voltage	100 V	-
Operating Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	-
Storage Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C	-
Noise	< - 30 dB	-
Thermal EMF	< 0.08 $\mu$ V/ $^{\circ}$ C	-
Shelf Life Stability: Absolute	$\Delta R \pm 0.01$ %	1 year at + 25 $^{\circ}$ C
Shelf Life Stability: Ratio	$\Delta R \pm 0.002$ %	1 year at + 25 $^{\circ}$ C

#### Notes

<sup>(1)</sup> Consult MIL-PRF-83401

- <sup>(2)</sup> "H" characteristic 100  $\Omega$  to 100 k $\Omega$  resistance range at 0.1% best  
 "R" characteristic 250  $\Omega$  to 100 k $\Omega$  resistance range at 0.1% best  
 "R" characteristic 250  $\Omega$  to 200 k $\Omega$  resistance range at 1% best

Revision: 25-Nov-11