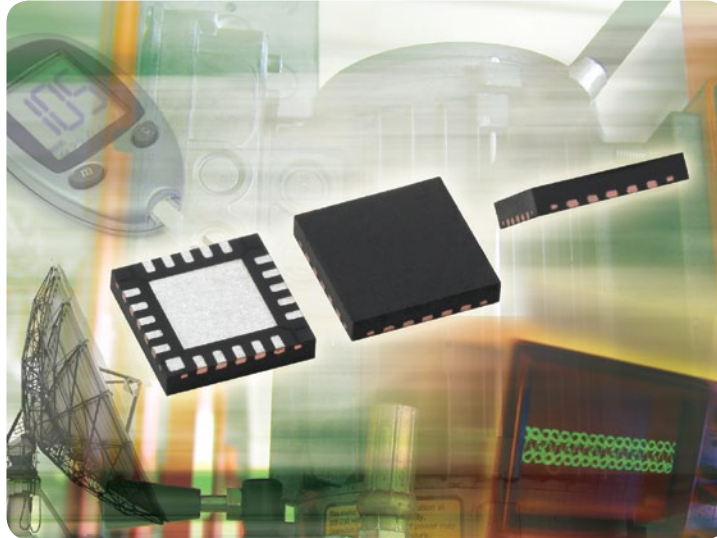


Quad Flat No-Lead Precision Thin Film Resistor SMD Network



KEY BENEFITS

- Custom schematics available
- Resistor range: 100 Ω to 500 k Ω total per package
- Ratio tolerance to ± 0.05 %
- Small size: 5 mm x 5 mm
- Low profile: 1 mm max.
- 0.65 mm terminal pitch
- Stable film and performance characteristics: 500 ppm at 70 $^{\circ}\text{C}$, 2000 h
- Lead (Pb)-free terminations
- Compliant to RoHS directive 2002/95/EC

APPLICATIONS

- Industrial
- Instrumentation
- Telecommunications
- Medical

RESOURCES

- Datasheet: QFN- Series - <http://www.vishay.com/doc?60015>
- For technical questions contact thinfilm@vishay.com



Quad Flat No-Lead Precision Thin Film Resistor SMD Network



The QFN- series features a standard 20 pins quad flat no lead 5 mm x 5 mm 0.65 mm pitch package. The quad flat no lead package saves board space over traditional SOIC packages. Additional pin counts available, consult factory.

FEATURES

- 0.65 mm lead pitch
- MSL level 1 per J-STD-020
- Low profile 1 mm seated height
- Small size 5 mm x 5 mm
- Low TCR ± 25 ppm, TCR tracking to ± 5 ppm
- Compliant to RoHS directive 2002/95/EC

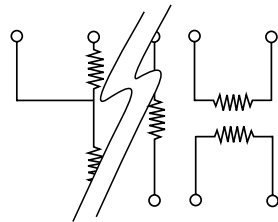


RoHS
COMPLIANT

TYPICAL PERFORMANCE

●	ABSOLUTE	TRACKING
	TCR	25
●	ABSOLUTE	RATIO
	TOL.	0.1

SCHEMATIC



Custom schematics available
Please consult factory

STANDARD ELECTRICAL SPECIFICATIONS

TEST	SPECIFICATIONS	CONDITIONS
Material	Passivated nichrome	-
Pin/Lead Number	20	-
Resistance Range	100 Ω (resistor) to 500 k Ω (total)	-
TCR: Absolute	± 25 ppm/ $^{\circ}$ C to ± 100 ppm/ $^{\circ}$ C	-55 $^{\circ}$ C to +125 $^{\circ}$ C
TCR: Tracking	± 5 ppm/ $^{\circ}$ C (typical)	-55 $^{\circ}$ C to +125 $^{\circ}$ C
Tolerance: Absolute	± 0.1 % to ± 1.0 %	+25 $^{\circ}$ C
Tolerance: Ratio	± 0.05 % to ± 0.1 %	+25 $^{\circ}$ C
Power Rating: Resistor	100 mW (per element)	Maximum at +70 $^{\circ}$ C
Power Rating: Package	500 mW	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 max. not to exceed $\sqrt{P \times R}$	-
Operating Temperature Range	-55 $^{\circ}$ C to +125 $^{\circ}$ C	-
Storage Temperature Range	-55 $^{\circ}$ C to +150 $^{\circ}$ C	-
Noise	< -30 dB	-
Thermal EMF	0.08 μ 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

MECHANICAL SPECIFICATIONS

Resistive Element	Passivated nichrome
Substrate Material	Silicon
Body	Molded epoxy
Terminals	Copper alloy
Plating	100 % matte tin
Marking Resistance to Solvents	Per MIL-PRF-914

Revision 25-Jan-10

Resistors - Leadless Precision Quad TF Network