NICHROME ON SILICON

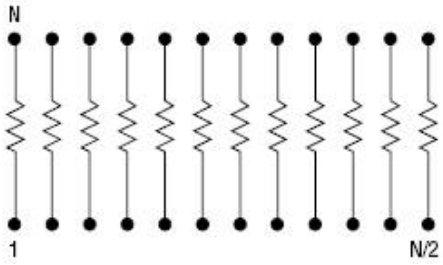
Isolated and Bussed Circuits
Thin Film
Resistor Networks
RoHS compliant available

FEATURES

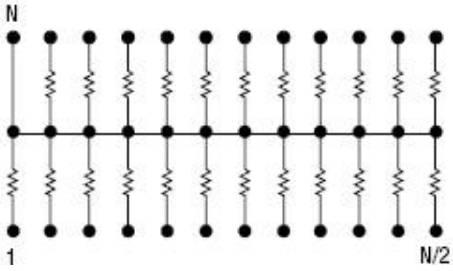
- Precision Nichrome Thin Film Resistor Networks
- Industry standard packaging
- Ratio tolerances of ±0.05%
- TCR tracking tolerances of 5 ppm/°C
- Exceptional Moisture Passivation

SCHEMATICS

Isolated Resistor Elements



Bussed Resistor Network



ELECTRICAL[1]

Standard Resistance Range, Ohms[2]	1K to 100K (Isolated) 1K to 30K (Bussed)
Operating Temperature Range	-55°C to +125°C
Interlead Capacitance	<2pF
Insulation Resistance	=10,000 Megohms
Maximum Operating Voltage	100Vdc or vPR
Noise, Maximum (MIL-STD-202, Method 308)	-25dB

[1] *Specifications subject to change without notice.*

[2] *E24 codes available.*

BI Technologies Corporation
4200 Bonita Place
Fullerton, CA 92835 USA
Website: www.bitechnologies.com

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ENVIRONMENTAL (MIL-R-83401)

Thermal Shock plus Power Conditioning	ΔR 0.1%
Short Time Overload	ΔR 0.1%
Terminal Strength	ΔR 0.1%
Moisture Resistance	ΔR 0.1%
Mechanical Shock	ΔR 0.1%
Vibration	ΔR 0.1%
Low Temperature Operation	ΔR 0.05%
High Temperature Exposure	ΔR 0.1%
Resistance to Solder Heat	ΔR 0.1%
Marking Permanency	Per MIL-STD-202, Method 215
Flammability	UL-94V-0 Rated
Storage Temperature Range	-55°C to +125°C

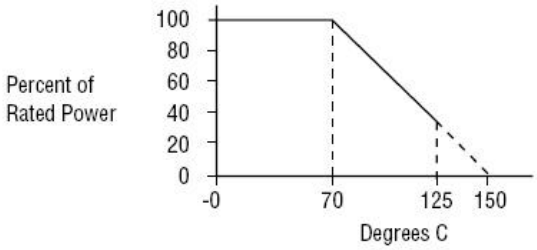
MECHANICAL

Lead Plating	80/20 Tin Lead (Standard) 100 matt Tin (RoHS Compliant)
Lead Material	Copper Alloy
Lead Configuration	Gull Wing
Lead Coplanarity	0.004" (0.102 mm)
Substrate Material	Silicon
Resistor Material	Passivated Nichrome
Body Material	Molded Epoxy

PACKAGE POWER, WATTS @ 70°C[3]

QSOP			SOIC (Narrow)			SOIC (Wide)			P-DIP		
16	20	24	8	14	16	16	20	24	8	14	16
0.75	1.0	1.0	0.4	0.7	0.8	1.0	1.2	1.2	0.4	0.6	0.8

POWER DERATING CURVE



[3] *Power per resistor @ 70°C, Maximum is 100 mW, not to exceed package power*

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ORDERING INFORMATION[4]

S QS 16 A XXXX F S LF 13

- Model Series: S = Passivated Nichrome on Silicon
- Package Type:
- Lead Count:
- Circuit Type: A=Isolated, B=Bussed
- Resistance Code
- Tolerance Code
- TCR Code
- Lead Finish: No Code=SnPb, LF=Lead Free
- Packaging Option: 7=7" Tape & Reel, 13 = 13" Tape & Reel, (No Code used for Tubes)

PACKAGE TYPES (CODES)

	Package Codes	Lead count	Mechanical Outline[5]
QSOP	QS	16,20, 24	MO-137
SOIC narrow body	SN	8, 14, 16	MS-012
SOIC wide body	SW	16	MS-013
P-DIP	PD	8, 14, 16	MS-001

RESISTANCE CODE[6]

First 3 digits are significant. Fourth digit denotes number of trailing zeros. For values less than 100, use "R" to denote a decimal point. Example, 51 and 10000 ohms is coded as 51R0 and 1002 respectively.

RESISTANCE TOLERANCES[5]

Accuracy Code at 25°C	A	B	D	F	G	J
Absolute Resistance Tolerances (%)	±0.1	±0.1	±0.5	±1.0	±2.0	±5.0
Ratio Tolerances (R1 Ref) (%)	±0.05	±0.1	±0.1	±1.0	N/A	N/A

TEMPERATURE COEFFICIENT OF RESISTANCE (TCR)[7]

TCR Code (-55°C to 125°C)	Q	P	S	L
Absolute (ppm/°C)	±25	±50	±100	±200
Tracking (R1 Ref) (ppm/°C)	±5	±5	N/A	N/A

[4] *Contact customer service for custom designs and features.*

[5] *JEDEC (Publication 95) Reference only.*

[6] *Consult factory for custom resistance values.*

[7] *Consult factory for custom tolerance values.*

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