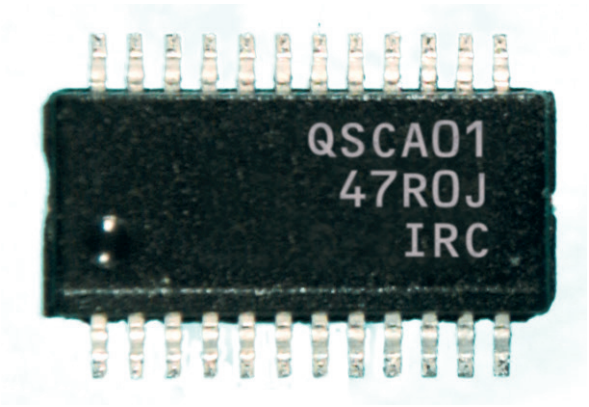
Resistors

Surface Mount QSOP Resistor Networks

OBSOLETE



QSOP Series

- Reliable, no internal cavity
- High resistor density - .025” lead spacing
- Standard JEDEC 16, 20, and 24 pin packages
- Ultra-stable TaNSil® resistors on silicon substrate
- RoHS compliant and Sn/Pb terminations available

All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

IRC’s TaNSil® QSOP resistor networks are the perfect solution for high volume applications that demand a small wiring board footprint. The 0.025" lead spacing provides higher lead density, increased component count, lower resistor cost, and high reliability.

The tantalum nitride film system on silicon provides precision tolerance, exceptional TCR tracking, low cost and miniature package. Excellent performance in harsh, humid environments is a trademark of IRC’s self-passivating TaNSil® resistor film.

The QSOP series is ideally suited for the latest surface mount assembly techniques and each lead can be 100% visually inspected. The compliant gull wing leads relieve thermal expansion and contraction stresses created by soldering and temperature excursions.

For applications requiring high performance resistor networks in a low cost, surface mount package, specify IRC QSOP resistor networks.

Electrical Data

Resistance Range	10 to 250KΩ
Absolute Tolerance	To ±0.1%
Ratio Tolerance to R1	To ±0.05%
Absolute TCR	To ±25ppm/°C
Tracking TCR	To ±5ppm/°C
Element Power Rating @ 70°C **Isolated Schematic** **Bussed Schematic**	 100mW 50mW
Package Power Rating @ 70°C	16-Pin 750mW 20-Pin 1.0W 24-Pin 1.0W
Rated Operating Voltage (not to exceed $\sqrt{P \times R}$)	100 Volts
Operating Temperature	-55°C to +125°C
Noise	<-30dB

Environmental Data

Test Per MIL-PRF-83401	Typical Delta R	Max Delta R
Thermal Shock	±0.02%	±0.1%
Power Conditioning	±0.03%	±0.1%
High Temperature Exposure	±0.03%	±0.05%
Short-time Overload	±0.02%	±0.05%
Low Temperature Storage	±0.03%	±0.05%
Life	±0.05%	±0.1%

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

BI Technologies IRC Welwyn

www.ttelectronics.com/resistors

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Manufacturing Capability Data

Absolute TCR (ppm/°C)	ISOLATED SCHEMATIC A				BUSSED SCHEMATIC B			
	Ohmic Range (Ω)	Available Tolerances	Available Ratio Tolerances	Best Tracking (±ppm/°C)	Ohmic Range (Ω)	Available Tolerances	Available Ratio Tolerances	Best Tracking (±ppm/°C)
250	10-25	F G J	F G	100	10-25	F G J	F G	200
	26-50	D F G J	C D F G	50	26-50	F G J	D F G	100
	51-200	C D F G J	C D F G	10	51-100	D F G J	C D F G	50
	201-250K	B C D F G J	A B C D F G	5	101-200	D F G J	B C D F G	25
					201-500	B C D F G J	B C D F G	20
					501-100K	B C D F G J	A B C D F G	5
100	26-50	D F G J	C D F G	50	26-50	F G J	D F G	100
	51-200	C D F G J	C D F G	5	51-100	D F G J	C D F G	50
	201-250K	B C D F G J	A B C D F G	5	101-200	D F G J	B C D F G	25
					201-500	B C D F G J	B C D F G	20
					501-100K	B C D F G J	A B C D F G	5
50	26-50	D F G J	C D F G	50	51-100	D F G J	C D F G	50
	51-200	C D F G J	C D F G	10	101-200	D F G J	B C D F G	25
	201-250K	B C D F G J	A B C D F G	5	201-500	B C D F G J	B C D F G	20
					501-100K	B C D F G J	A B C D F G	5
25	51-200	C D F G J	C D F G	10	201-500	B C D F G J	B C D F G	20
	201-250K	B C D F G J	A B C D F G	5	501-100K	B C D F G J	A B C D F G	5

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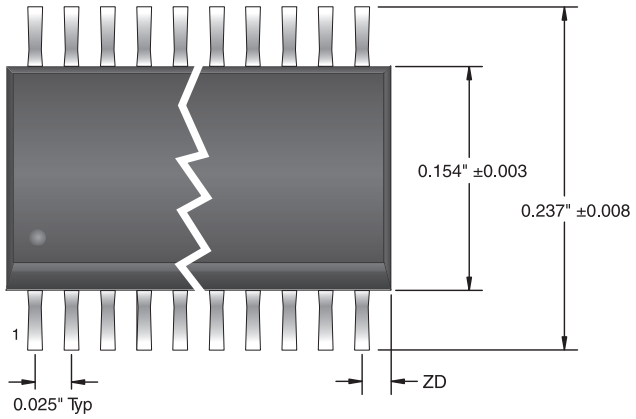
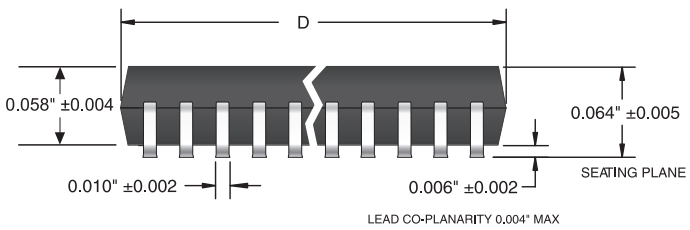
Physical Data

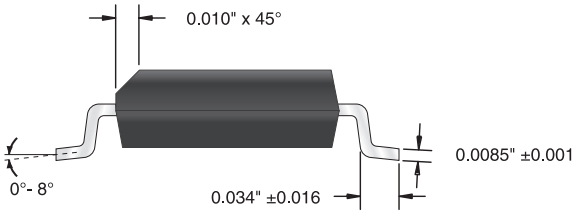


# OF PINS	DIMENSION "D"	ZD REF
16	0.193″ ±0.004	0.009″
20	0.341″ ±0.004	0.058″
24	0.341″ ±0.004	0.033″

Note: N = number of pins (16, 20, 24)

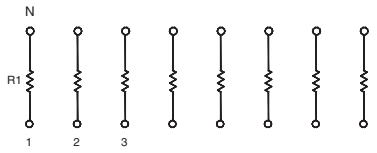


Note: All dimesions exclude mold flash and end flash which shall not exceed 0.006" per side. Drawing proportions not to scale.

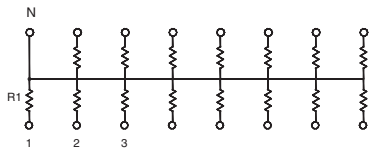


Note: Lead Coplanarity 0.004" Max.

Schematic Data



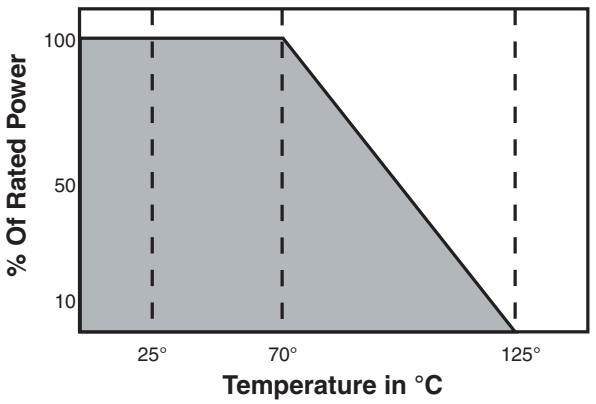
Schematic A
Isolated



Schematic B
Bussed

Note: N = number of pins (16, 20, 24)

Power Derating Curve



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Ordering Data

Prefix

Style, Schematic and Termination
QS8A = 16-pin, 8 Isolated Resistors, with standard Sn/Pb terminations
QS8ALF = 16-pin, 8 Isolated Resistors, with 100% matte tin, Pb-free terminations
QS8B = 16-pin, 15 Bussed Resistors, with standard Sn/Pb terminations
QS8BLF = 16-pin, 15 Bussed Resistors, with 100% matte tin, Pb-free terminations

QS0A = 20-pin, 10 Isolated Resistors, with standard Sn/Pb terminations
QS0ALF = 20-pin, 10 Isolated Resistors, with 100% matte tin, Pb-free terminations
QS0B = 20-pin, 19 Bussed Resistors, with standard Sn/Pb terminations
QS0BLF = 20-pin, 19 Bussed Resistors, with 100% matte tin, Pb-free terminations

QSCA = 24-pin, 12 Isolated Resistors, with standard Sn/Pb terminations
QSCALF = 24-pin, 12 Isolated Resistors, with 100% matte tin, Pb-free terminations
QSCB = 24-pin, 23 Bussed Resistors, with standard Sn/Pb terminations
QSCBLF = 24-pin, 23 Bussed Resistors, with 100% matte tin, Pb-free terminations

Absolute TCR Code
00 = ±250 ppm/°C; 01 = ±100 ppm/°C; 02 = ±50 ppm/°C; 03 = ±25 ppm/°C

Resistance Code
4-Digit Resistance Code
Ex: 1002 = 10KΩ, 50R1 = 50.1Ω

Absolute Tolerance Code
J = ±5%; G = ±2%; F = ±1%; D = ±0.5%; C = ±0.25%; B = ±0.1%

Ratio Tolerance Code (optional)
G = ±2%; F = ±1%; D = ±0.5%; C = ±0.25%; B = ±0.1%; A = ±0.05%

Packaging
Specify tubes or tape & reel.

For additional information or to discuss your specific requirements, please contact our Applications Team using the contact details below.