

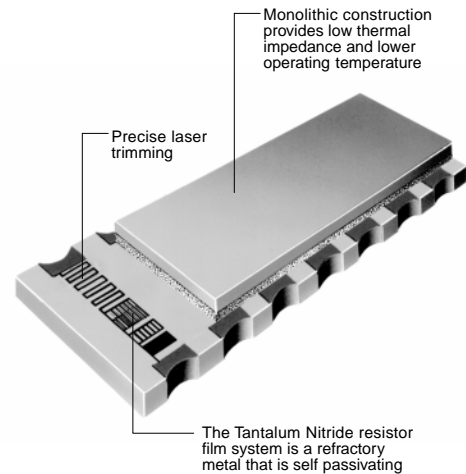
# TANFILM® Precision Resistor Array

ISO-9001 Registered



## SON SERIES

- Available in 0.210" and 0.150" widths
- Superior temperature performance
- Absolute TC to  $\pm 15$  ppm/ $^{\circ}$ C
- Tracking to  $\pm 2$  ppm/ $^{\circ}$ C
- Military screening available
- Absolute tolerance to  $\pm 0.05\%$
- Ratios to  $\pm 0.01\%$
- Compatible with standard SOIC footprints



IRC's TaNFilm® Small Outline Leadless Resistor Networks is ideally suited for applications requiring precision, long term reliability and stability in a small area. Its monolithic construction eliminates vulnerable terminations such as solder connections. The SON package is ideal for the all surface mount production reflow techniques. The TaNFilm® SON Network provides all the unique qualities of our other TaNFilm® package configuration. Testing has demonstrated performance exceeding MIL-PRF-83401 characteristic H.

Precise laser trimming enables us to achieve extremely close tolerance and tight ratios. Our in-house CAD system and photo-etch process makes custom circuit configurations and multiple resistance values easily achievable. The tantalum nitride resistor film system is a refractory metal that is self passivating providing extreme temperature capabilities and superior environmental characteristics that surpass military requirements. For surface mounted resistor network applications requiring reliability, stability, accuracy and low noise characteristics in the latest leadless configurations, specify the IRC SON resistor network.

**4 through 24 Terminals Available**

**Custom Circuits and Special Screening Available.**

### Specifications

<b>Resistance Ranges (ohms)</b>	Isolated: 50 to 100K Bussed: 50 to 50K Higher resistance values available
<b>Standard Resistance Tolerance (<math>\pm\%</math>)</b>	0.1, 0.5, 1, 2 (0.05 available)
<b>Temperature Coefficient (ppm/<math>^{\circ}</math>C)</b>	$\pm 15, \pm 25, \pm 50, \pm 100$
<b>TCR Tracking</b>	$\pm 5$ ppm/ $^{\circ}$ C standard $\pm 2$ ppm/ $^{\circ}$ C available reference to R1
<b>Temperature Range</b>	-55 $^{\circ}$ C to +150 $^{\circ}$ C
<b>Noise Level</b>	Less than -25 db
<b>Terminations</b>	Gold over nickel over copper (Solder coating available)
<b>Substrate Material</b>	99.5% pure alumina ceramic
<b>Construction</b>	Ceramic "sandwich" package LXXX Conformal coat epoxy NSXX

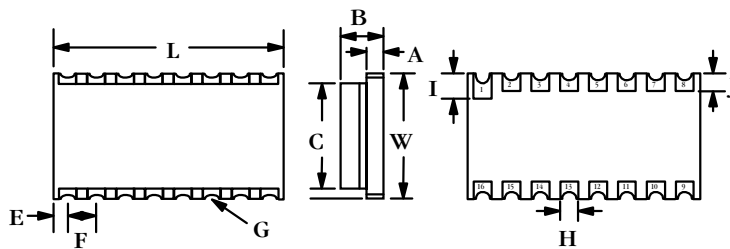
### Power Rating

	Model	Resistor	Network
<b>Power Rating @ 70<math>^{\circ}</math>C (watts)</b>	NS4X, L959 & L989	0.1	0.4
	NS7X, L987 & L989	0.1	0.7
	NS8X, L998 & L999	0.1	0.8

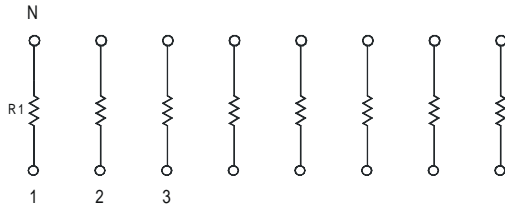
### SON SERIES DIMENSIONS (Inches)

Dimensions	0.150 Width			0.210 Width		
	NS4X 8 Pad	NS7X 14 Pad	NS8X 16 Pad	L95X 8 Pad	L98X 14 Pad	L99X 16 Pad
A	0.027	0.027	0.027	0.027	0.027	0.027
B	0.028	0.028	0.028	0.065	0.065	0.065
C	0.125	0.125	0.125	0.17	0.17	0.17
E	0.025	0.025	0.025	0.025	0.025	0.025
F	0.050	0.050	0.050	0.050	0.050	0.050
G	0.009R	0.009R	0.009R	0.010R	0.010R	0.010R
H	0.030	0.030	0.030	0.030	0.030	0.030
I	0.050	0.050	0.050	0.050	0.050	0.050
J	0.040	0.040	0.040	0.040	0.040	0.040
L	0.21±0.010	0.36	0.41	0.20	0.35	0.40
W	0.15	0.15	0.15	0.21	0.21	0.21

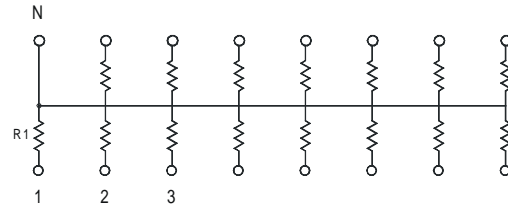
Tolerances Unless Otherwise  
Noted -  
.XXX is +.005  
.XX is .010



### SCHEMATICS:



Schematic A



Schematic B

### HOW TO ORDER:

Sample Part No.:

**SON - L989 - 03 - 1001 - B B**

Family

Model Number

- NS4A, L959: 4 resistor, Schematic A, 8 pad SON
- NS4B, L954: 7 resistor, Schematic B, 8 pad SON
- NS7A, L989: 7 resistor, Schematic A, 14 pad SON
- NS7B, L987: 13 resistor, Schematic B, 14 pad SON
- NS8A, L999: 8 resistor, Schematic A, 16 pad SON
- NS8B, L998: 15 resistor, Schematic B, 16 pad SON

Characteristic

Code	Classification	TCR (ppm/°C)
01	Commercial Grade	±100
02	Commercial Grade	±50
03	Commercial Grade	±25
04	Military Screening	±300
05	Military Screening	±100
06	Military Screening	±50
07	Military Screening	±25

Ratio Tolerance to R<sub>1</sub>  
(if specified)

Absolute Tolerance  
Standard MIL tolerance code

Absolute/Ratio Tolerance Code  
A=±0.05%; B=±0.1%; C=±0.25%;  
D=±0.5%; F=±1.0%; G=±2.0%;  
Q=±0.02%; T=0.01%

Resistance

Standard MIL resistance code.  
Example: 1001 = 1000 ohms