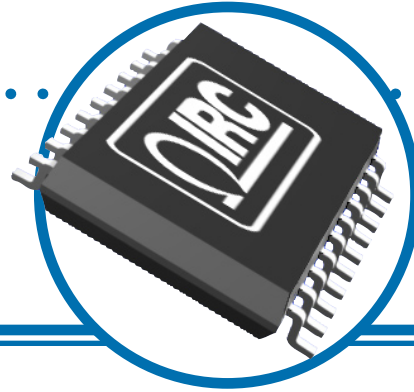


# Surface Mount TSSOP Resistor Networks

## TSSOP Series

- Absolute tolerances to  $\pm 0.1\%$
- Tight TC Tracking to  $\pm 5\text{ppm}/^\circ\text{C}$
- Ratio match tolerances to  $\pm 0.05\%$
- Ultra-stable tantalum nitride resistors
- Standard Sn/Pb and Pb-free terminations available



IRC's TaNSil® TSSOP resistor networks are ideally suited for high volume applications that demand a small, low-profile footprint. The small wire-bondable chip package provides higher component density, 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.

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

## Electrical Data

|                                                                        |                                                     |
|------------------------------------------------------------------------|-----------------------------------------------------|
| <b>Resistance Range</b>                                                | 10 $\Omega$ to 250K $\Omega$                        |
| <b>Absolute Tolerance</b>                                              | To $\pm 0.1\%$                                      |
| <b>Ratio Tolerance to R1</b>                                           | To $\pm 0.05\%$                                     |
| <b>Absolute TCR</b>                                                    | To $\pm 25\text{ppm}/^\circ\text{C}$                |
| <b>Tracking TCR</b>                                                    | To $\pm 5\text{ppm}/^\circ\text{C}$                 |
| <b>Element Power Rating @ 70°C</b>                                     |                                                     |
| <b>Isolated Schematic</b>                                              | 100mW                                               |
| <b>Bussed Schematic</b>                                                | 50mW                                                |
| <b>Package Power Rating @ 70°C</b>                                     | 16-Pin    800mW<br>20-Pin    1.0W<br>24-Pin    1.0W |
| <b>Rated Operating Voltage</b><br>(not to exceed $\sqrt{P \times R}$ ) | 100 Volts                                           |
| <b>Operating Temperature</b>                                           | -55°C to +125°C                                     |
| <b>Noise</b>                                                           | <-30dB                                              |

## Environmental Data

| <b>Test Per MIL-PRF-83401</b>    | <b>Typical Delta R</b> | <b>Max Delta R</b> |
|----------------------------------|------------------------|--------------------|
| <b>Thermal Shock</b>             | $\pm 0.02\%$           | $\pm 0.1\%$        |
| <b>Power Conditioning</b>        | $\pm 0.03\%$           | $\pm 0.1\%$        |
| <b>High Temperature Exposure</b> | $\pm 0.03\%$           | $\pm 0.5\%$        |
| <b>Short-time Overload</b>       | $\pm 0.02\%$           | $\pm 0.5\%$        |
| <b>Low Temperature Storage</b>   | $\pm 0.03\%$           | $\pm 0.5\%$        |
| <b>Life</b>                      | $\pm 0.05\%$           | $\pm 0.1\%$        |

### General Note

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

# Surface Mount TSSOP Resistor Networks

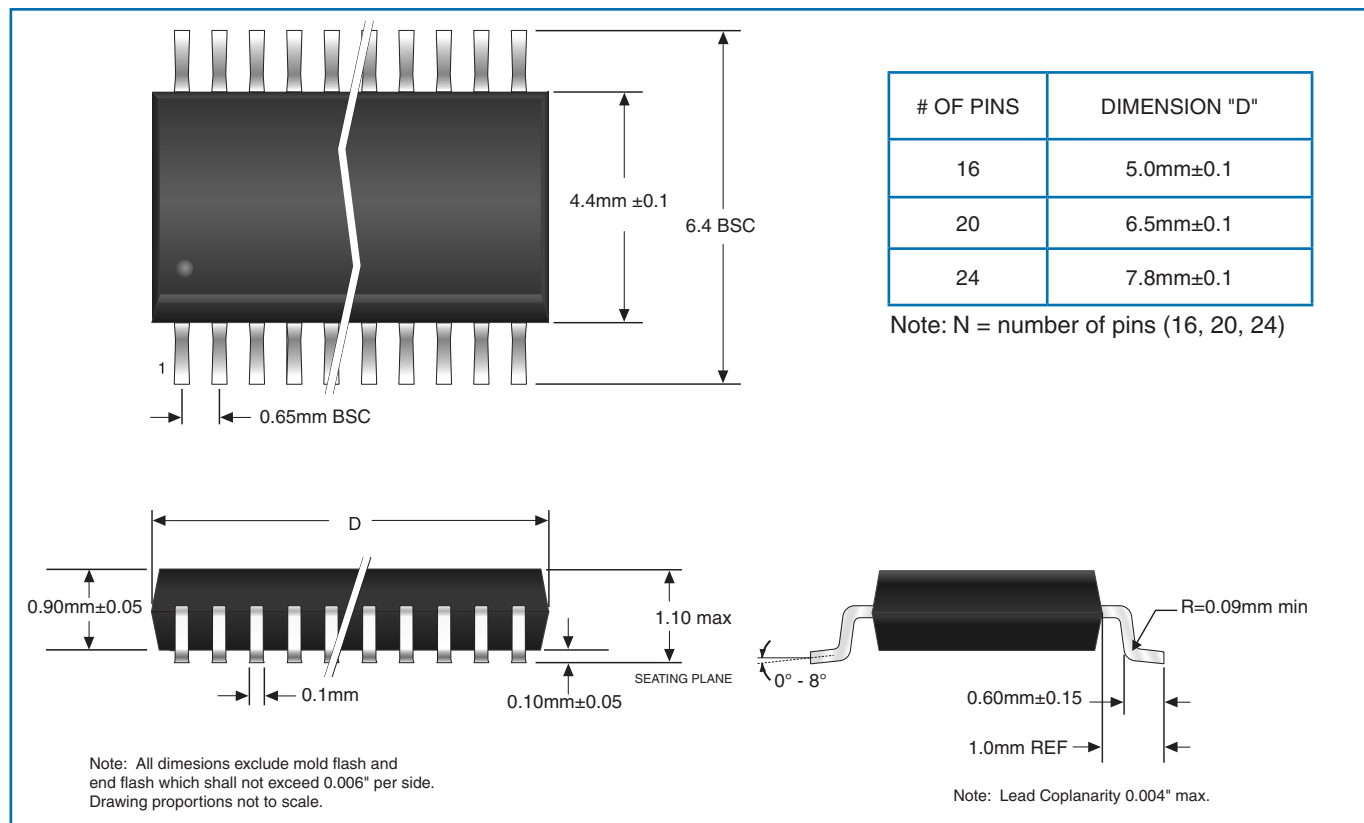


## Manufacturing Capabilities

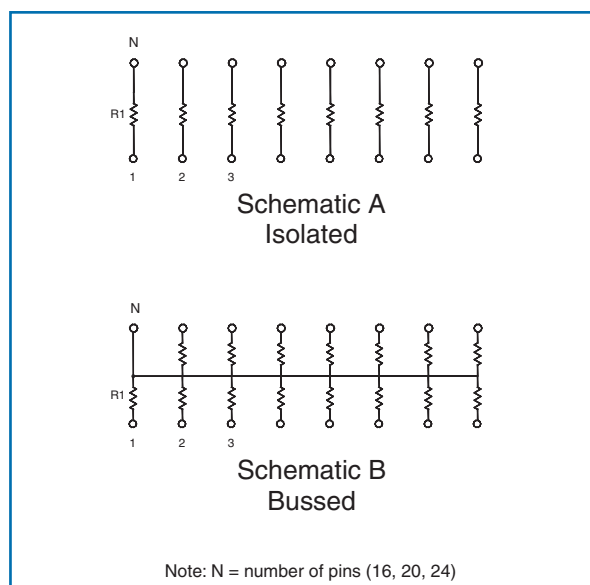
| Absolute<br>TCR<br>( $\pm$ ppm/ $^{\circ}$ C) | ISOLATED SCHEMATIC A           |                         |                                  |                                                | BUSSED SCHEMATIC B    |                         |                                  |                                                |
|-----------------------------------------------|--------------------------------|-------------------------|----------------------------------|------------------------------------------------|-----------------------|-------------------------|----------------------------------|------------------------------------------------|
|                                               | Ohmic<br>Range<br>( $\Omega$ ) | Available<br>Tolerances | Available<br>Ratio<br>Tolerances | Best<br>Tracking<br>( $\pm$ ppm/ $^{\circ}$ C) | Ohmic<br>Range<br>(W) | Available<br>Tolerances | Available<br>Ratio<br>Tolerances | Best<br>Tracking<br>( $\pm$ ppm/ $^{\circ}$ 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                          | 10                                             | 51 - 100              | D F G J                 | C D F G                          | 50                                             |
|                                               | 201 - 250K                     | B C D F G J             | A B 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 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 F G                          | 5                                              | 501 - 100K            | B C D F G J             | A B C D F G                      | 5                                              |

# Surface Mount TSSOP Resistor Networks

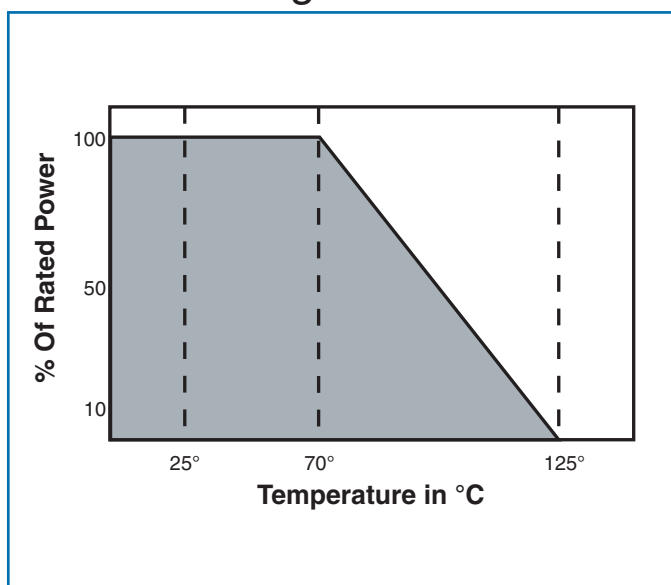
## Physical Data



## Schematic Data



## Power Derating Curve



# Surface Mount TSSOP Resistor Networks



## Ordering Data

Prefix ..... **GUS** - **TS8A** - **01** - **1002** - **F** **B**

### Style, Schematic and Termination .....

TS8A = 16-pin, 8 Isolated Resistors with standard Sn/Pb terminations  
TS8ALF = 16-pin, 8 Isolated Resistors with 100% matte tin, Pb-free terminations  
TS8B = 16-pin, 15 Bussed Resistors with standard Sn/Pb terminations  
TS8BLF = 16-pin, 15 Bussed Resistors with 100% matte tin, Pb-free terminations

TS0A = 20-pin, 10 Isolated Resistors with standard Sn/Pb terminations  
TS0ALF = 20-pin, 10 Isolated Resistors with 100% matte tin, Pb-free terminations  
TS0B = 20-pin, 19 Bussed Resistors with standard Sn/Pb terminations  
TS0BLF = 20-pin, 19 Bussed Resistors with 100% matte tin, Pb-free terminations

TSCA = 24-pin, 12 Isolated Resistors with standard Sn/Pb terminations  
TSCALF = 24-pin, 12 Isolated Resistors with 100% matte tin, Pb-free terminations  
TSCB = 24-pin, 23 Bussed Resistors with standard Sn/Pb terminations  
TSCBLF = 24-pin, 23 Bussed Resistors with 100% matte tin, Pb-free terminations

### Absolute TCR Code .....

00 =  $\pm 250$  ppm/ $^{\circ}$ C; 01 =  $\pm 100$  ppm/ $^{\circ}$ C; 02 =  $\pm 50$  ppm/ $^{\circ}$ C; 03 =  $\pm 25$  ppm/ $^{\circ}$ C

### Resistance Code .....

4-Digit Resistance Code  
Ex: 1002 = 10K $\Omega$ , 50R1 = 50.1 $\Omega$

### Absolute Tolerance Code .....

J =  $\pm 5\%$ ; G =  $\pm 2\%$ ; F =  $\pm 1\%$ ; D =  $\pm 0.5\%$ ; C =  $\pm 0.25\%$ ; B =  $\pm 0.1\%$

### Ratio Tolerance Code (optional) .....

G =  $\pm 2\%$ ; F =  $\pm 1\%$ ; D =  $\pm 0.5\%$ ; C =  $\pm 0.25\%$ ; B =  $\pm 0.1\%$ ; A =  $\pm 0.05\%$

### 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.