

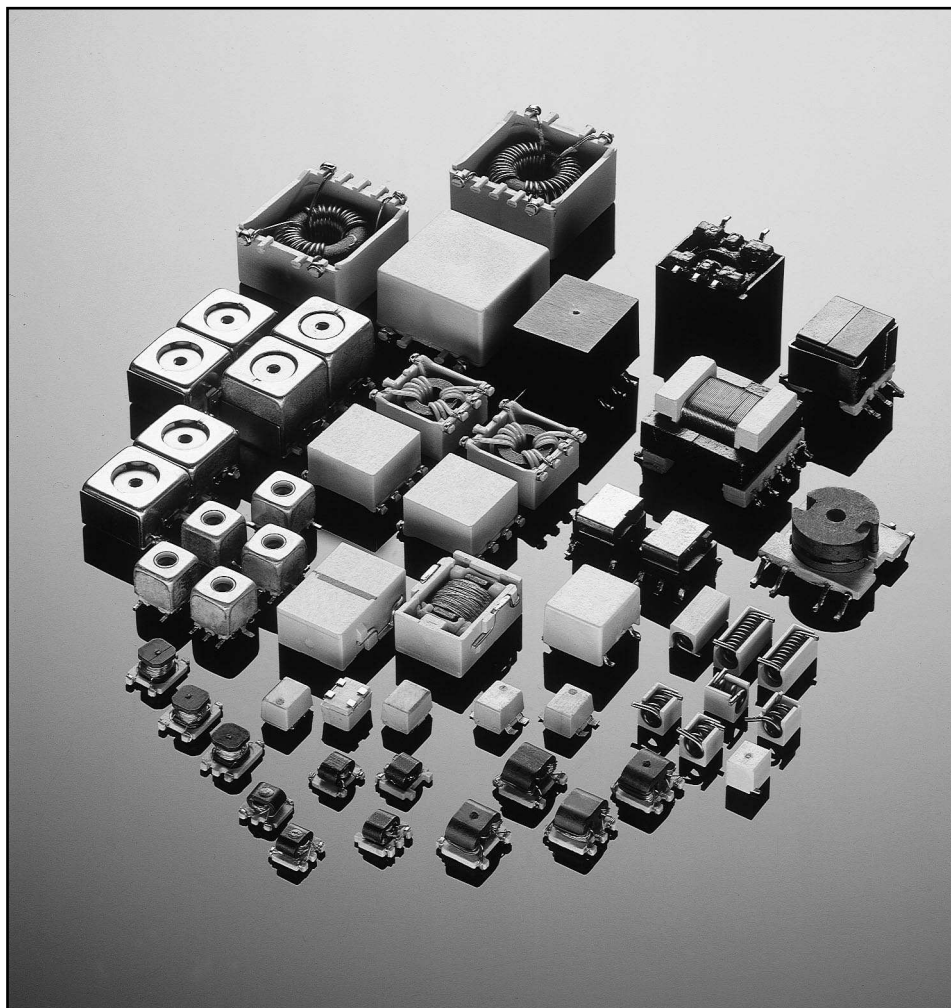
# Sprague-Goodman

ENGINEERING BULLETIN

**SG-890A**

Supercedes SG-890.1

## **SURFCOIL<sup>®</sup> SMT INDUCTORS AND TRANSFORMERS (PROFESSIONAL GRADE)**



**Sprague-Goodman Electronics, Inc.**

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# SMD TUNABLE RF COIL

## 5.0 x 5.0 x 5.1 mm — GLSV & GLSA SERIES

### APPLICATIONS

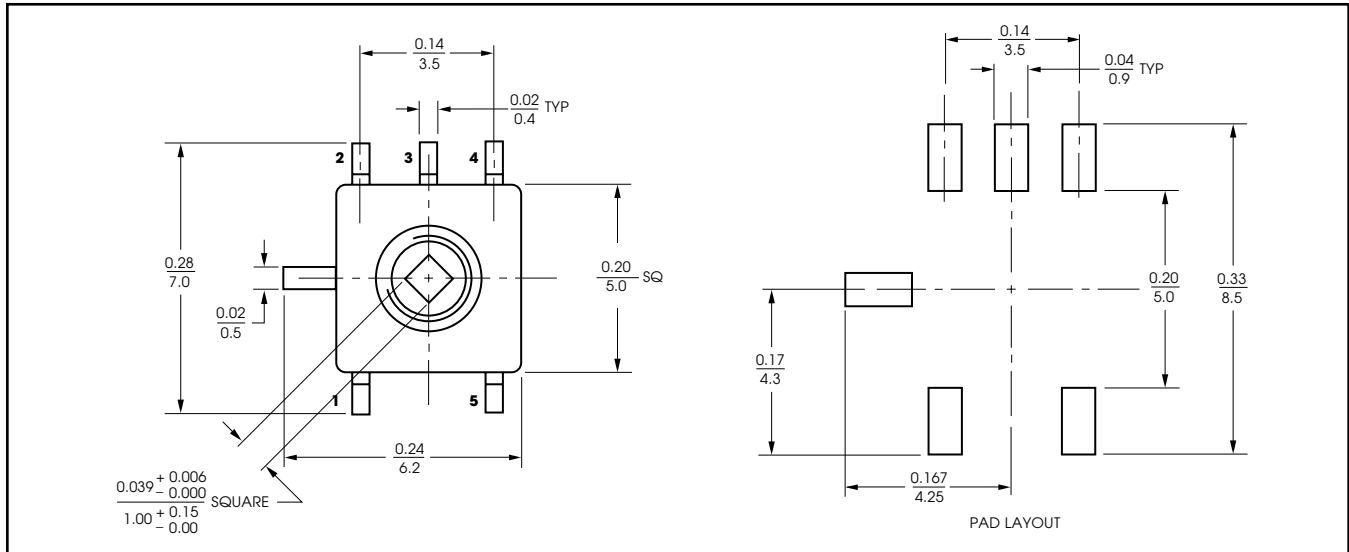
- RF circuits
- Telecommunications
- Mobile radio

### FEATURES

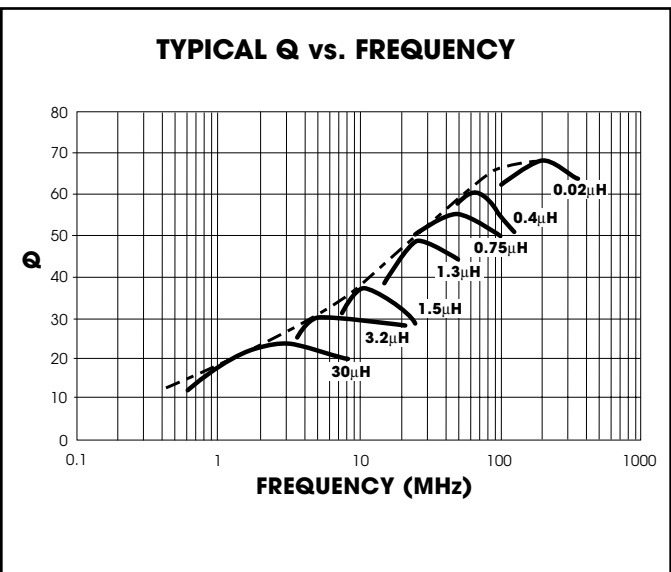
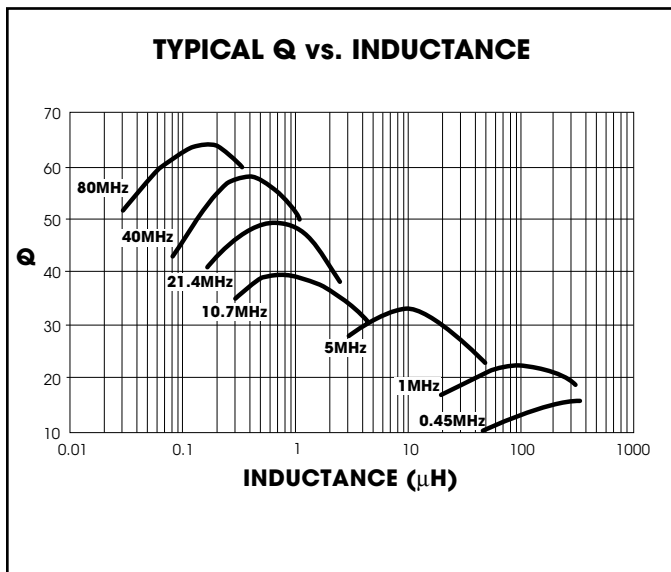
- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Wide frequency range
- Max 5 connections

### SPECIFICATIONS

Operating Temperature Range: -40°C to +85°C  
 Power Loss at 40°C: approx. 100 mW max  
 Soldering Heat Resistance: 260°C, 5 s  
 Inductance Range: 14 nH - 680 μH  
 Frequency Range: 0.5 - 300 MHz

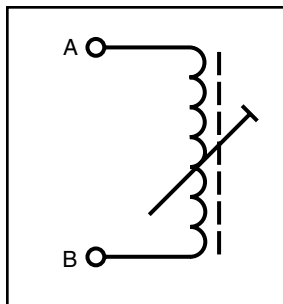


All dimensions are in / mm.  
 Unless otherwise specified, the tolerance on dimensions is ± 0.004/0.1.



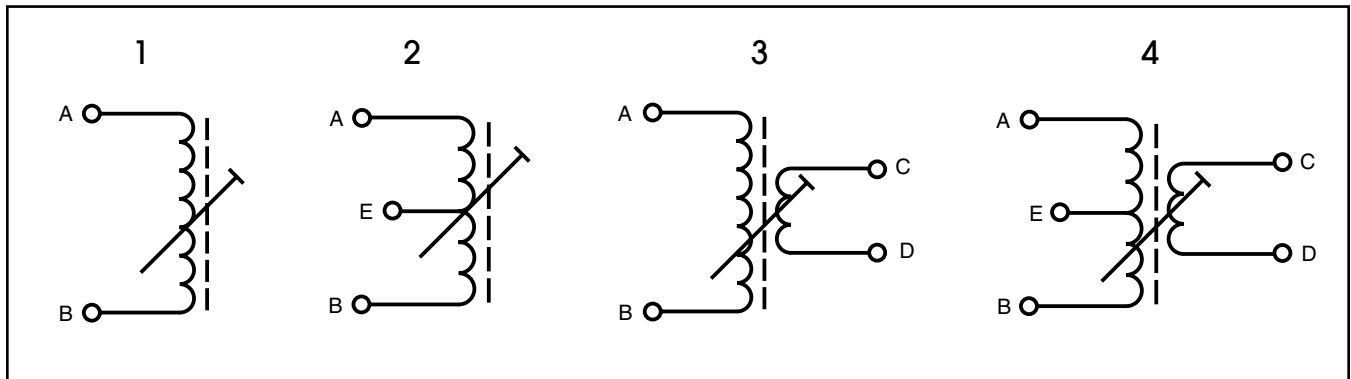
**STANDARD VALUES** (1 Winding)

| Inductance<br>( $\mu$ H) | Inductance<br>Test Freq.<br>(MHz) | Frequency<br>Range<br>(MHz) | Adjustment<br>Range | Q<br>min | Q Test<br>Frequency<br>(MHz) | Pin Connection |   | Turns  | Model<br>Number |
|--------------------------|-----------------------------------|-----------------------------|---------------------|----------|------------------------------|----------------|---|--------|-----------------|
|                          |                                   |                             |                     |          |                              | A              | B |        |                 |
| 0.047                    | 10                                | 50 - 200                    | $\pm 3.0\%$         | 38       | 150                          | 4              | 2 | 3 1/4  | GLSV47N00       |
| 0.056                    | 10                                | 50 - 200                    | -6.0%               | 40       | 150                          | 2              | 4 | 3 3/4  | GLSV56N00       |
| 0.068                    | 10                                | 50 - 200                    | $\pm 3.0\%$         | 45       | 150                          | 2              | 4 | 3 3/4  | GLSV68N00       |
| 0.082                    | 10                                | 50 - 200                    | $\pm 3.5\%$         | 38       | 150                          | 2              | 4 | 4 3/4  | GLSV82N00       |
| 0.10                     | 10                                | 50 - 200                    | $\pm 4.0\%$         | 48       | 100                          | 2              | 4 | 4 3/4  | GLSVR1000       |
| 0.12                     | 10                                | 50 - 200                    | $\pm 5.0\%$         | 32       | 100                          | 2              | 4 | 5 3/4  | GLSVR1200       |
| 0.15                     | 10                                | 50 - 200                    | $\pm 5.0\%$         | 42       | 100                          | 2              | 4 | 5 3/4  | GLSVR1500       |
| 0.18                     | 10                                | 50 - 200                    | $\pm 5.0\%$         | 40       | 100                          | 4              | 2 | 6 1/4  | GLSVR1800       |
| 0.22                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 45       | 70                           | 4              | 2 | 7 1/4  | GLSVR2200       |
| 0.27                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 35       | 70                           | 2              | 4 | 7 3/4  | GLSVR2700       |
| 0.33                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 35       | 70                           | 2              | 4 | 8 3/4  | GLSVR3300       |
| 0.39                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 40       | 70                           | 2              | 4 | 9 3/4  | GLSVR3900       |
| 0.47                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 45       | 70                           | 4              | 2 | 11 1/4 | GLSVR4700       |
| 0.56                     | 10                                | 20 - 150                    | $\pm 7.5\%$         | 42       | 70                           | 2              | 4 | 12 3/4 | GLSVR5600       |
| 0.68                     | 10                                | 10 - 100                    | $\pm 7.5\%$         | 45       | 50                           | 4              | 2 | 14 1/4 | GLSVR6800       |
| 0.82                     | 10                                | 10 - 100                    | $\pm 7.5\%$         | 42       | 50                           | 2              | 4 | 15 3/4 | GLSVR8200       |
| 1.0                      | 10                                | 2 - 40                      | $\pm 7.5\%$         | 42       | 50                           | 4              | 2 | 17 1/4 | GLSV1R000       |
| 1.2                      | 10                                | 2 - 40                      | $\pm 7.5\%$         | 45       | 20                           | 4              | 2 | 19 1/4 | GLSV1R200       |
| 1.5                      | 10                                | 2 - 40                      | $\pm 7.5\%$         | 45       | 20                           | 4              | 2 | 21 1/4 | GLSV1R500       |
| 1.8                      | 10                                | 2 - 40                      | $\pm 7.5\%$         | 45       | 20                           | 2              | 4 | 23 3/4 | GLSV1R800       |
| 2.2                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 45       | 20                           | 2              | 4 | 27 3/4 | GLSV2R200       |
| 2.7                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 40       | 20                           | 4              | 2 | 30 1/4 | GLSV2R700       |
| 3.3                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 35       | 20                           | 4              | 2 | 34 1/4 | GLSV3R300       |
| 3.9                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 35       | 10                           | 2              | 4 | 34 3/4 | GLSV3R900       |
| 4.7                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 35       | 10                           | 2              | 4 | 38 3/4 | GLSV4R700       |
| 5.6                      | 1                                 | 2 - 40                      | $\pm 5.0\%$         | 35       | 10                           | 2              | 4 | 41 3/4 | GLSV5R600       |
| 6.8                      | 1                                 | 1 - 10                      | $\pm 5.0\%$         | 30       | 5                            | 4              | 2 | 44 1/4 | GLSV6R800       |
| 8.2                      | 1                                 | 1 - 10                      | $\pm 5.0\%$         | 23       | 5                            | 4              | 2 | 48 1/4 | GLSV8R200       |
| 10.0                     | 1                                 | 1 - 10                      | $\pm 5.0\%$         | 23       | 5                            | 4              | 2 | 55 1/4 | GLSV10000       |
| 12.0                     | 1                                 | 1 - 10                      | $\pm 5.0\%$         | 23       | 5                            | 4              | 2 | 61 1/4 | GLSV12000       |
| 15.0                     | 0.5                               | 1 - 10                      | $\pm 5.0\%$         | 25       | 5                            | 4              | 2 | 67 1/4 | GLSV15000       |



**SPECIAL VALUES**

| Inductance (μH) | Induct. Freq. (MHz) | Freq. Range (MHz) | Adjustment Range | Q min | Q Test Freq. (MHz) | Pin Connection |   |   |   |   | Turns   |        | Turns A-E | Fig. | Model Number |
|-----------------|---------------------|-------------------|------------------|-------|--------------------|----------------|---|---|---|---|---------|--------|-----------|------|--------------|
|                 |                     |                   |                  |       |                    | A              | B | C | D | E | 1       | 2      |           |      |              |
| 0.014           | 10.0                | 100-200           | ±3%              | 65    | 200                | 4              | 2 | — | — | — | 1 1/4   | —      | —         | 1    | GLSA14N00    |
| 0.092           | 10.0                | 50-200            | ±5%              | 40    | 100                | 4              | 2 | — | — | — | 4 1/4   | —      | —         | 1    | GLSA92N00    |
| 0.117           | 1.0                 | 20-200            | ±4%              | 40    | 100                | 2              | 4 | — | — | — | 4 3/4   | —      | —         | 1    | GLSAR1170    |
| 0.137           | 10.0                | 20-150            | ±5%              | 35    | 100                | 4              | 2 | — | — | — | 5 1/4   | —      | —         | 1    | GLSAR1370    |
| 0.17            | 1.0                 | 20-150            | ±5%              | 25    | 70                 | 2              | 5 | 4 | 3 | 1 | 4 1/2   | 6 3/4  | 2 1/4     | 4    | GLSAR1700    |
| 0.24            | 1.0                 | 20-150            | ±5%              | 30    | 70                 | 1              | 5 | 4 | 2 | — | 7 1/4   | 5 1/4  | —         | 3    | GLSAR2400    |
| 0.24            | 1.0                 | 20-150            | +7/-4%           | 30    | 70                 | 1              | 5 | 4 | 2 | — | 7 1/4   | 3 1/4  | —         | 3    | GLSAR2401    |
| 0.24            | 13.0                | 20-150            | ±5%              | 30    | 35                 | 1              | 5 | — | — | — | 7 1/4   | —      | —         | 1    | GLSAR2402    |
| 0.75            | 10.0                | 20-150            | ±5%              | 25    | 30                 | 1              | 2 | 5 | 4 | — | 14 3/4  | 15 1/4 | —         | 3    | GLSAR7500    |
| 0.85            | 1.0                 | 20-150            | ±7.5%            | 45    | 45                 | 2              | 5 | 4 | 3 | 1 | 16 1/2  | 2 3/4  | 8 1/4     | 4    | GLSAR8500    |
| 0.97            | 13.0                | 10-100            | ±5%              | 40    | 35                 | 4              | 2 | 1 | 5 | — | 16      | 2      | —         | 3    | GLSAR9700    |
| 1.0             | 1.0                 | 10-100            | -7.5%            | 25    | 45                 | 2              | 5 | — | — | 1 | 18 1/2  | —      | 9 1/4     | 2    | GLSA1R000    |
| 1.18            | 2.0                 | 10-100            | ±5%              | 22    | 40                 | 2              | 4 | 5 | 1 | 3 | 18 3/4  | 3 3/4  | 14 1/4    | 4    | GLSA1R180    |
| 1.2             | 1.0                 | 10-100            | +16%             | 38    | 20                 | 4              | 2 | 1 | 5 | — | 20 1/4  | 4 1/4  | —         | 3    | GLSA1R200    |
| 1.3             | 1.0                 | 10-100            | ±7.5%            | 30    | 10                 | 5              | 1 | — | — | — | 19 3/4  | —      | —         | 1    | GLSA1R300    |
| 1.35            | 0.3                 | 10-100            | ±5%              | 20    | 26                 | 2              | 4 | 5 | 1 | 3 | 18 3/4  | 9 3/4  | 9 1/2     | 4    | GLSA1R350    |
| 1.79            | 1.0                 | 1 - 15            | +3/-11%          | 25    | 12                 | 2              | 4 | 5 | 1 | — | 22 3/4  | 4 3/4  | —         | 3    | GLSA1R790    |
| 2.0             | 0.2                 | 5 - 50            | ±5%              | 35    | 21                 | 4              | 2 | — | — | — | 25 1/4  | —      | —         | 1    | GLSA2R000    |
| 2.15            | 13.0                | 5 - 40            | ±7.5%            | 45    | 35                 | 1              | 5 | — | — | — | 26      | —      | —         | 1    | GLSA2R150    |
| 2.5             | 13.0                | 5 - 40            | ±7.5%            | 40    | 35                 | 1              | 5 | — | — | — | 29      | —      | —         | 1    | GLSA2R500    |
| 3.0             | 0.2                 | 5 - 40            | ±5%              | 30    | 21                 | 2              | 4 | — | — | 3 | 30 3/4  | —      | 9 1/2     | 2    | GLSA3R000    |
| 3.1             | 0.2                 | 5 - 40            | ±5%              | 32    | 21                 | 4              | 2 | — | — | — | 32      | —      | —         | 1    | GLSA3R100    |
| 9.0             | 0.1                 | 1 - 10            | +21/-3%          | 18    | 1.6                | 2              | 4 | 5 | 1 | — | 55 3/4  | 11 3/4 | —         | 3    | GLSA9R000    |
| 19.6            | 0.1                 | 1 - 10            | +10/-1%          | 24    | 5.0                | 4              | 2 | — | — | — | 78 1/4  | —      | —         | 1    | GLSA19R60    |
| 28.0            | 0.1                 | 1 - 10            | +4/-16%          | 18    | 1.8                | 2              | 4 | 5 | 1 | — | 92 3/4  | 18 3/4 | —         | 3    | GLSA28000    |
| 32.0            | 1.0                 | 1 - 10            | +20%             | 14    | 1.0                | 1              | 5 | 4 | 2 | — | 108 1/4 | 36 1/4 | —         | 3    | GLSA32000    |
| 125.0           | 0.1                 | 0.5 - 2           | ±7.5%            | 18    | 1.0                | 4              | 2 | — | — | — | 208     | —      | —         | 1    | GLSA12100    |
| 150.0           | 0.03                | 0.5 - 2           | +10/-1.5%        | 16    | 1.0                | 5              | 1 | 4 | 2 | — | 217 3/4 | 85 1/4 | —         | 3    | GLSA15100    |
| 390.0           | 0.1                 | 0.5 - 2           | ±7.5%            | 20    | 1.0                | 1              | 5 | — | — | — | 365     | —      | —         | 1    | GLSA39100    |
| 500.0           | 0.1                 | 0.5 - 2           | ±7.5%            | 12    | 0.5                | 4              | 2 | — | — | — | 426     | —      | —         | 1    | GLSA50100    |
| 680.0           | 0.05                | 0.5 - 2           | ±7.5%            | 12    | 0.45               | 4              | 2 | — | — | — | 490     | —      | —         | 1    | GLSA68100    |



# SURFACE MOUNT TRANSFORMER

## 4.5 x 3.4 x 3.1 mm — GLSZ SERIES

### APPLICATIONS

- RF circuits
- Telecommunications
- Mobile radio

### FEATURES

- Compact design
- Suitable for automatic insertion
- Suitable for all soldering methods
- Wide frequency range

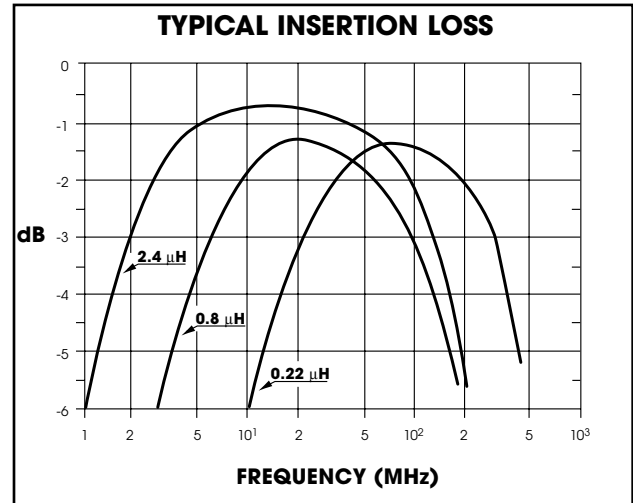
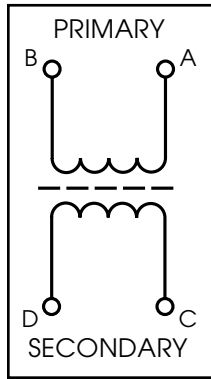
### SPECIFICATIONS

Frequency Range: 25 kHz - 1 GHz

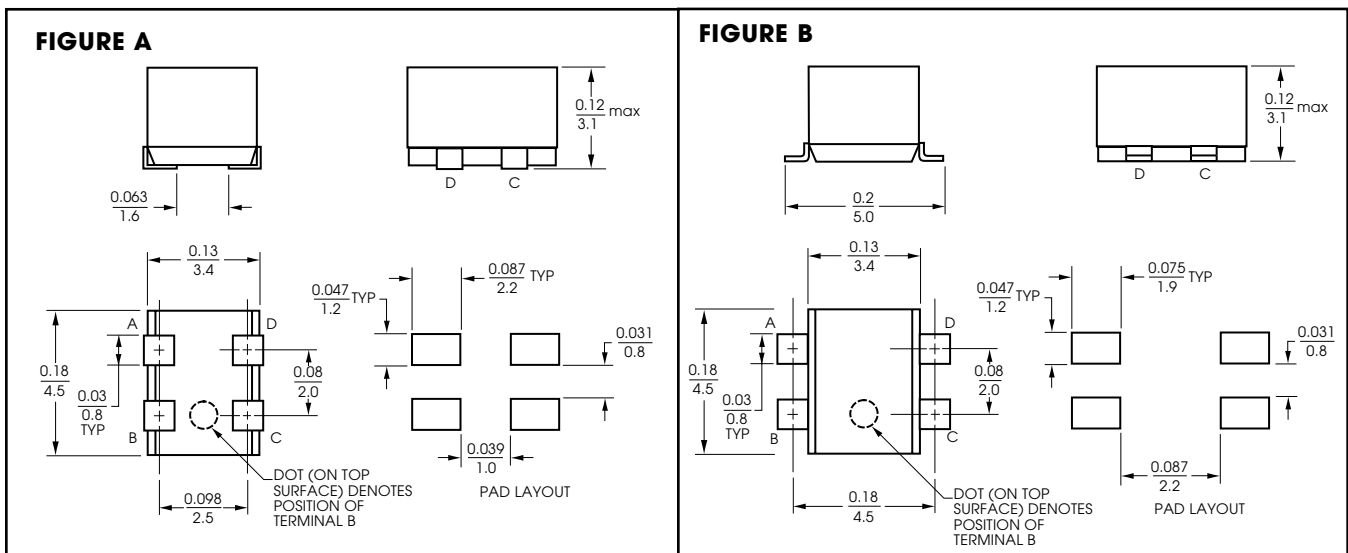
Operating Temperature Range:  
-40°C to +125°C

Power Loss at 40°C: 100 mW max.

Soldering Heat Resistance: 230°C, 8 s



| Impedance (Ω) | Turns Ratio | Insertion Loss (dB) | 3 dB Band Limits |       | Inductance Primary (μH) | Inductance Secondary (μH) | Figure | Model Number |
|---------------|-------------|---------------------|------------------|-------|-------------------------|---------------------------|--------|--------------|
|               |             |                     | (MHz)            | (MHz) |                         |                           |        |              |
| 50 : 1100     | 1 : 4.7     | 1.1                 | 15               | 65    | 0.24                    | 4.7                       | B      | GLSZ112L4R7  |
| 50 : 140      | 1 : 1.66    | 1.6                 | 0.2              | 5     | 32.7                    | 79.0                      | B      | GLSZ141L790  |
| 50 : 1.25     | 6.33 : 1    | 4.3                 | 4                | 60    | 0.9                     | 0.034                     | B      | GLSZ1R3LR03  |
| 50 : 2000     | 1 : 6.33    | 2.7                 | 100              | 340   | 0.036                   | 0.98                      | B      | GLSZ202LR98  |
| 50 : 2.2      | 4.7 : 1     | 2.0                 | 1                | 20    | 5.1                     | 0.255                     | B      | GLSZ2R2LR26  |
| 50 : 370      | 1 : 2.71    | 1.6                 | 30               | 400   | 0.15                    | 0.9                       | B      | GLSZ371LR90  |
| 50 : 450      | 1 : 3       | 0.9                 | 30               | 380   | 0.14                    | 1.1                       | A      | GLSZ451L1R1  |
| 50 : 50       | 1 : 1       | 1.5                 | 0.1              | 5     | 54.0                    | 48.0                      | B      | GLSZ500L480  |
| 50 : 50       | 1 : 1       | 1.4                 | 15               | 450   | 0.22                    | 0.22                      | A      | GLSZ500LR22  |
| 50 : 500      | 1 : 3.15    | 1.5                 | 0.7              | 28    | 6.5                     | 55.0                      | A      | GLSZ501L550  |
| 50 : 50       | 1 : 1       | 3.1                 | 40               | 580   | 0.08                    | 0.08                      | A      | GLSZ500LR08  |
| 50 : 50       | 1 : 1       | 1.5                 | 4                | 160   | 0.98                    | 0.925                     | B      | GLSZ500LR93  |
| 50 : 5.6      | 3 : 1       | 2.5                 | 4                | 60    | 1.1                     | 0.14                      | A      | GLSZ5R6LR14  |
| 50 : 6.8      | 2.71 : 1    | 3.2                 | 4                | 75    | 0.9                     | 0.15                      | B      | GLSZ6R8LR15  |
| 50 : 800      | 1 : 4       | 1.5                 | 20               | 150   | 0.23                    | 3.3                       | A      | GLSZ801L3R3  |



All dimensions are in / mm.  
Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.

# WIDEBAND TRANSFORMERS - 4.5 x 4.5 x 2.8 mm

## APPLICATIONS

- RF circuits
- Mobile radio
- Satellite TV
- Cordless phones

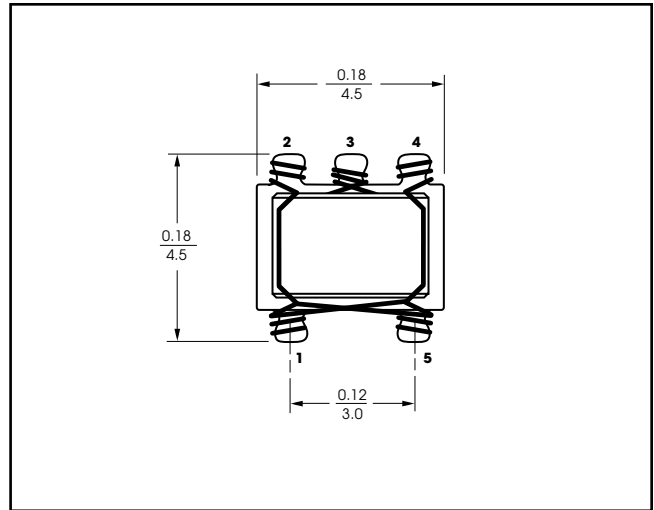
## FEATURES

- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Ceramic base
- Terminals are formed from the ends of the coil windings, eliminating solder joints between the coil and the terminals which could open from the heat of circuit assembly.

## SPECIFICATIONS

Operating Temperature Range: -40°C to +125°C

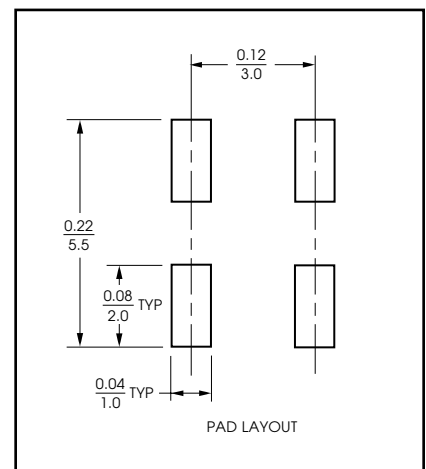
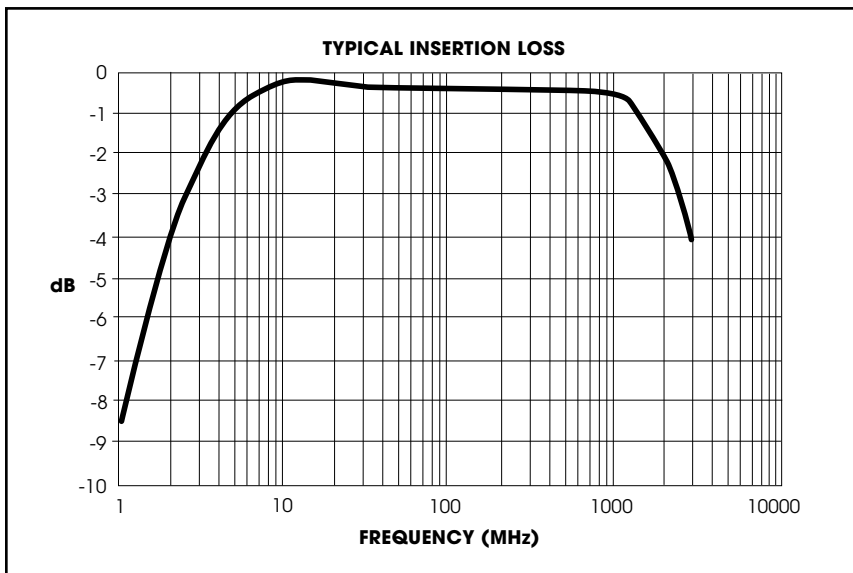
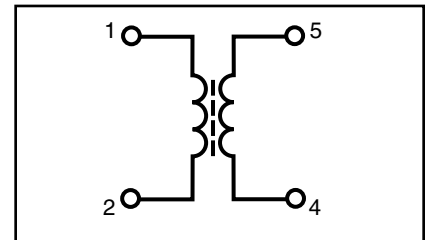
Soldering Heat Resistance: 230°C, 5 s



CONFIGURATION FOR BALUN TRANSFORMER (PAGE 7)

## TRANSFORMER WITH 2 WINDINGS

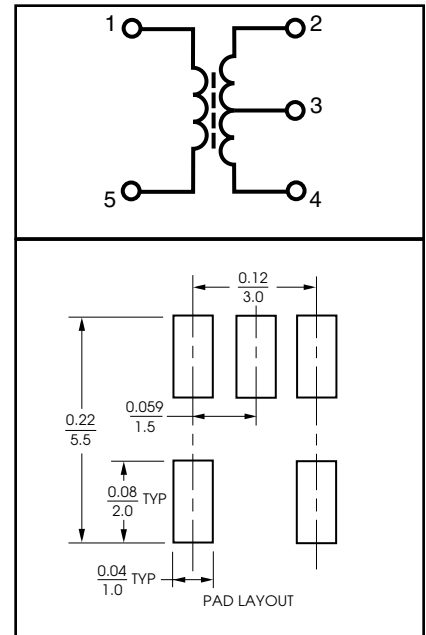
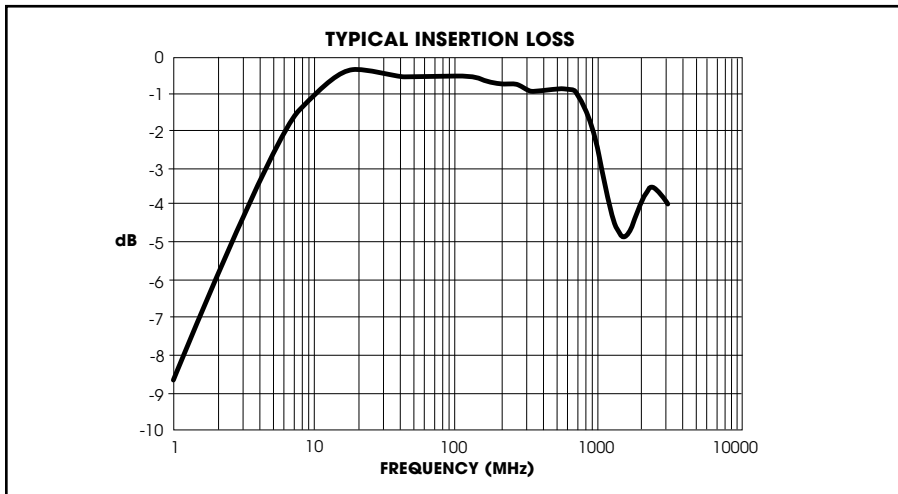
| Impedance (Ω) | Turns Ratio | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|---------------|-------------|------------------------|-------------------------|--------------|
| 50 : 50       | 1 : 1       | 4 - 2000               | 0.5                     | GLSW4M202    |



All dimensions are in / mm.  
 Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.

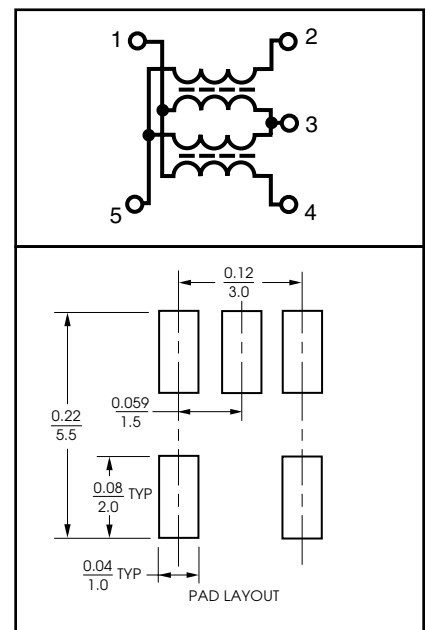
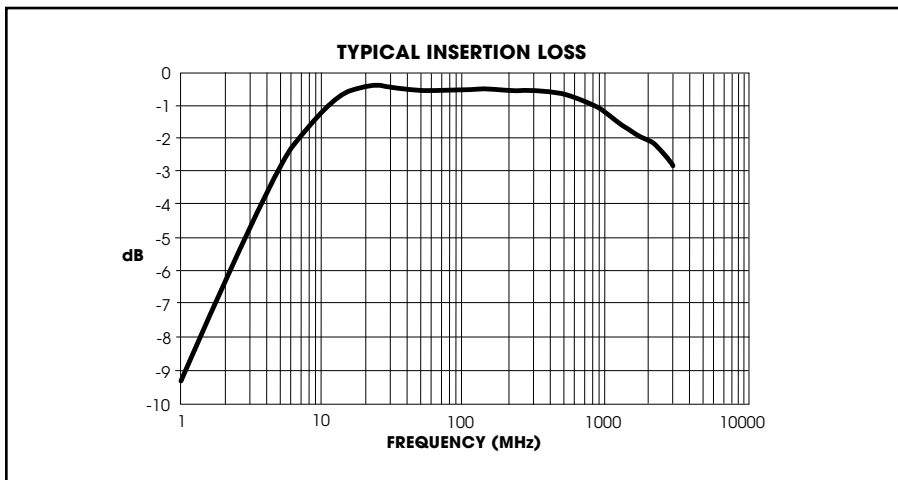
**TRANSFORMER WITH 2 WINDINGS AND CENTER TAP**

| Turns Ratio | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|-------------|------------------------|-------------------------|--------------|
| 1 : 1 : 1   | 4.5 - 1000             | 0.7                     | GLSB4R5M102  |



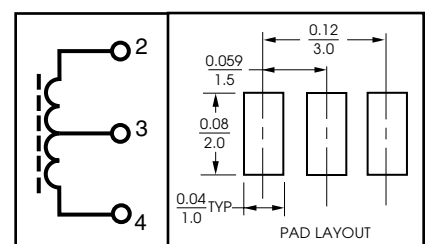
**BALUN TRANSFORMER**

| Impedance ( $\Omega$ ) | Turns Ratio | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|------------------------|-------------|------------------------|-------------------------|--------------|
| 50 : 200               | 1 : 2       | 10 - 1200              | 0.5                     | GLSU10M122   |



**POWER SPLITTER**

| Number of Turns | Inductance (2 to 3) ( $\mu$ H) | Inductance (2 to 4) ( $\mu$ H) | Model Number   |
|-----------------|--------------------------------|--------------------------------|----------------|
| 2 x 2           | 0.42 $\pm$ 25%                 | 1.68 $\pm$ 25%                 | GLSD02/02H1R68 |



All dimensions are in / mm.  
 Unless otherwise specified, the tolerance on dimensions is  $\pm$  0.004 / 0.1.

# SMD WIDEBAND TRANSFORMER

## 6.5 x 5.7 x 4.0 mm — GLSJ SERIES

### APPLICATIONS

- RF circuits
- Mobile Radio
- Satellite TV

### SPECIFICATIONS

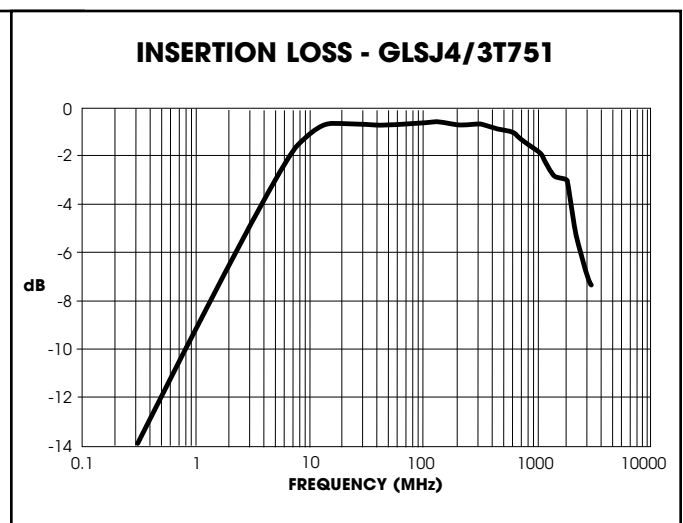
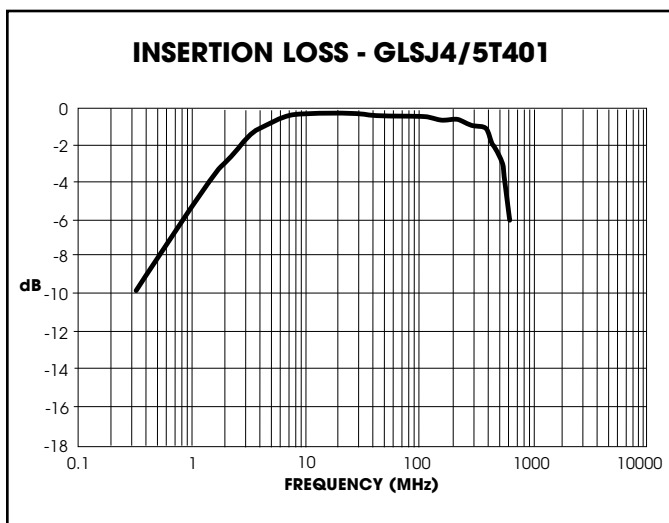
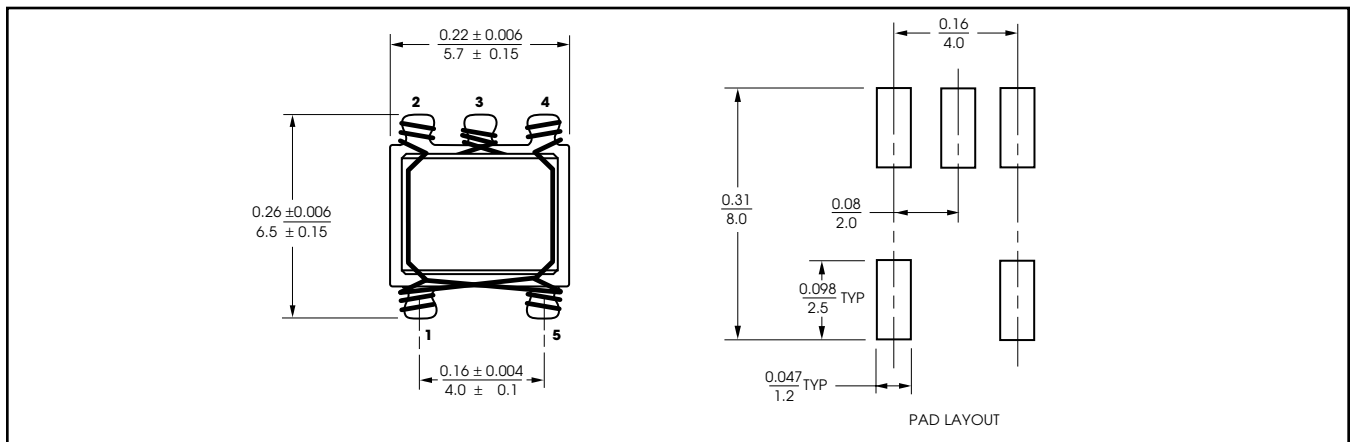
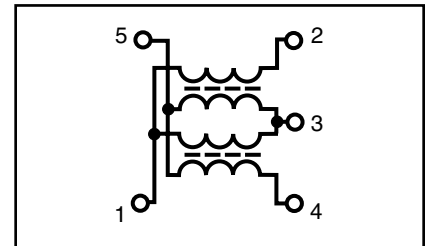
Operating Temperature Range: -40°C to +125°C

Soldering Heat Resistance: 230°C, 5 s

### FEATURES

- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Ceramic base
- Terminals are formed from the ends of the coil windings, eliminating solder joints between the coil and the terminals which could open from the heat of circuit assembly.

| No. of Turns | 1 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|--------------|------------------------|-------------------------|--------------|
| 4 x 4.5      | 20 - 400               | 0.8                     | GLSJ4/5T401  |
| 4 x 2.5      | 20 - 750               | 0.8                     | GLSJ4/3T751  |



All dimensions are in / mm.  
 Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.



# SMD DIRECTIONAL COUPLER

## 5.7 x 5.7 x 4.0 mm — GLSN SERIES

### APPLICATIONS

- RF circuits
- Mobile Radio
- Satellite TV

### SPECIFICATIONS

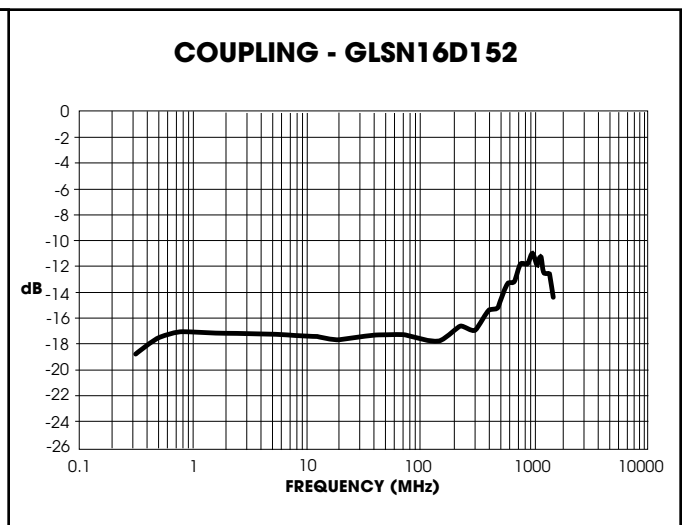
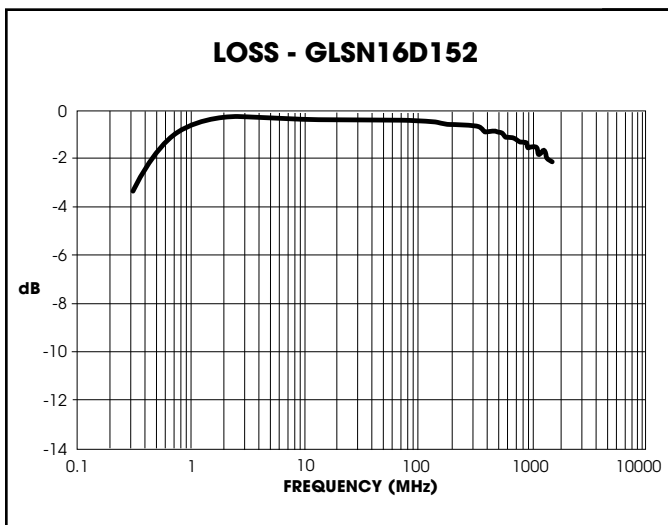
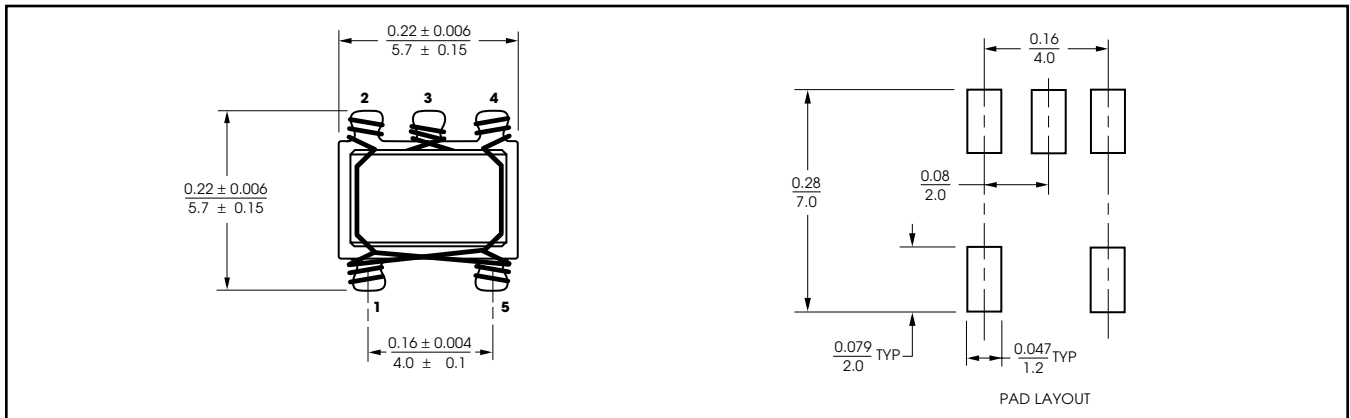
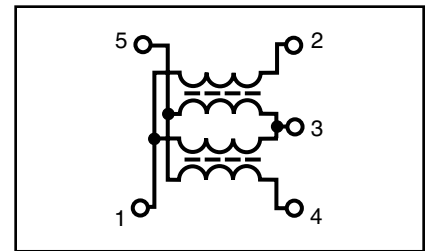
Operating Temperature Range: -40°C to +125°C

Soldering Heat Resistance: 230°C, 5 s

### FEATURES

- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Ceramic base
- Terminals are formed from the ends of the coil windings, eliminating solder joints between the coil and the terminals which could open from the heat of circuit assembly.

| Coupling (dB) | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|---------------|------------------------|-------------------------|--------------|
| 6             | 0.8 - 1100             | 2.8                     | GLSN2/6D112  |
| 8             | 0.8 - 1200             | 2.0                     | GLSN1/8D122  |
| 10            | 0.5 - 900              | 1.2                     | GLSN10D901   |
| 16            | 0.5 - 1500             | 0.6                     | GLSN16D152   |



All dimensions are in / mm.  
 Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.

# SMD DIRECTIONAL COUPLER

## 4.5 x 4.5 x 2.8 mm — GLSL SERIES

### APPLICATIONS

- RF circuits
- Mobile Radio
- Satellite TV

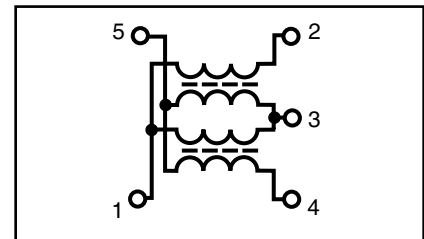
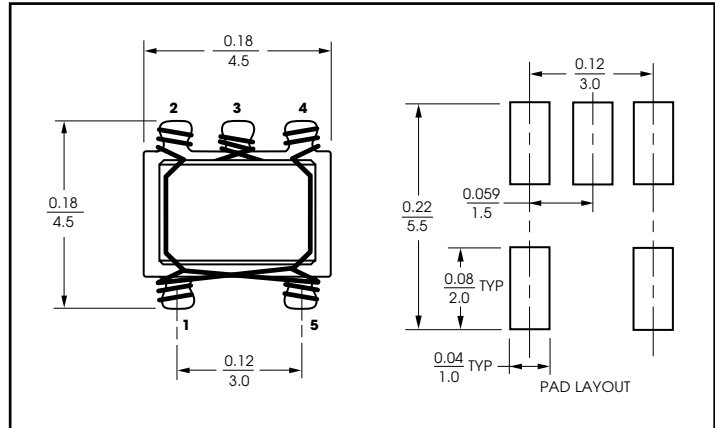
### FEATURES

- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Ceramic base
- Terminals are formed from the ends of the coil windings, eliminating solder joints between the coil and the terminals which could open from the heat of circuit assembly.

### SPECIFICATIONS

Operating Temperature Range: -40°C to +125°C

Soldering Heat Resistance: 230°C, 5 s



| Coupling (db) | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|---------------|------------------------|-------------------------|--------------|
| 20            | 0.6 - 1700             | 0.2                     | GLSL20D102   |

# SMD DIRECTIONAL COUPLER

## 6.5 x 5.7 x 4.0 mm — GLSY SERIES

### APPLICATIONS

- RF circuits
- Mobile Radio
- Satellite TV

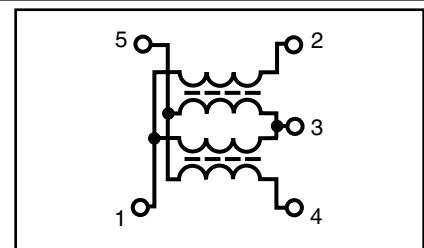
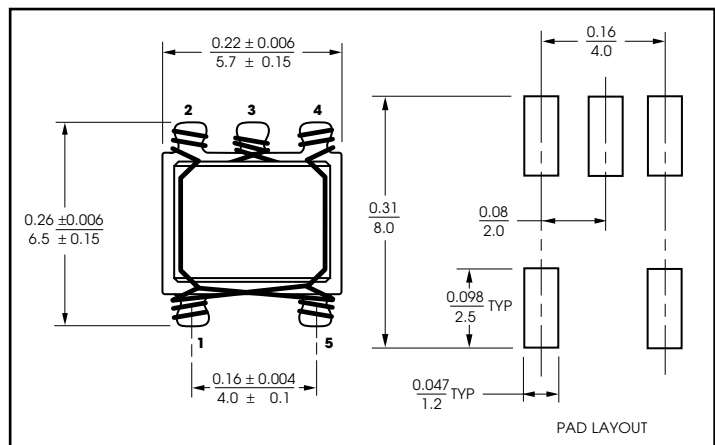
### FEATURES

- Compact design
- Suitable for automatic insertion
- For reflow and vapor phase soldering
- Ceramic base
- Terminals are formed from the ends of the coil windings, eliminating solder joints between the coil and the terminals which could open from the heat of circuit assembly.

### SPECIFICATIONS

Operating Temperature Range: -40°C to +125°C

Soldering Heat Resistance: 230°C, 5 s

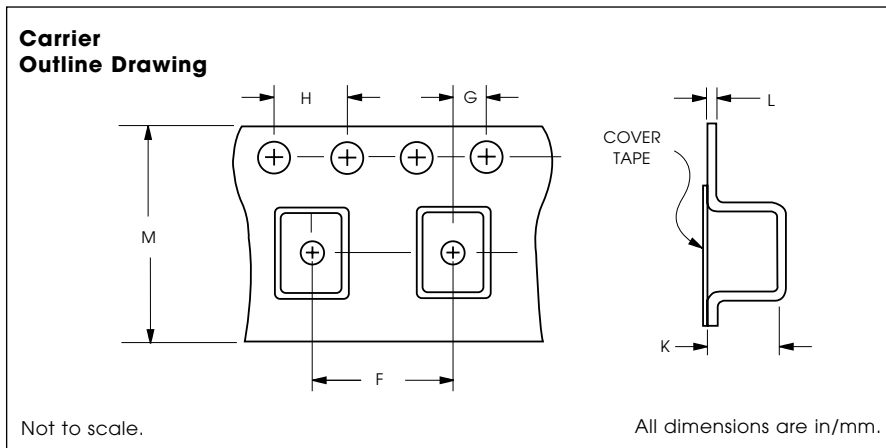


| Coupling (db) | 3 dB Band Limits (MHz) | Loss at 20 MHz (dB) max | Model Number |
|---------------|------------------------|-------------------------|--------------|
| 10            | 0.5 - 900              | 1.2                     | GLSY10D901   |
| 20            | 0.5 - 1500             | 0.4                     | GLSY20D152   |

All dimensions are in / mm.  
Unless otherwise specified, the tolerance on dimensions is ± 0.004 / 0.1.

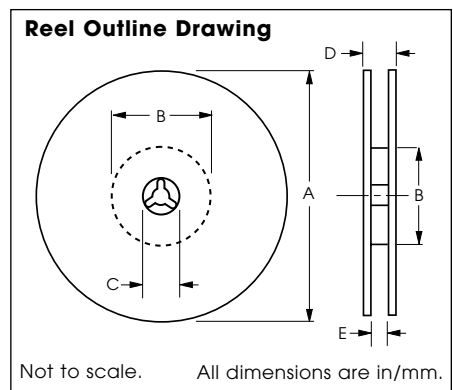
**CARRIER SPECIFICATIONS**

| Model Series \ Dimension  | F                   | G                  | H                  | K                  | L                   | M                   |
|---------------------------|---------------------|--------------------|--------------------|--------------------|---------------------|---------------------|
| GLSA, GLSV                | $\frac{0.47}{12.0}$ | $\frac{0.08}{2.0}$ | $\frac{0.16}{4.0}$ | $\frac{0.22}{5.6}$ | $\frac{0.012}{0.3}$ | $\frac{0.63}{16.0}$ |
| GLSZ                      | $\frac{0.31}{8.0}$  | $\frac{0.08}{2.0}$ | $\frac{0.16}{4.0}$ | $\frac{0.13}{3.2}$ | $\frac{0.012}{0.3}$ | $\frac{0.47}{12.0}$ |
| GLSB, GLSD,<br>GLSU, GLSW | $\frac{0.31}{8.0}$  | $\frac{0.08}{2.0}$ | $\frac{0.16}{4.0}$ | $\frac{0.12}{3.1}$ | $\frac{0.012}{0.3}$ | $\frac{0.47}{12.0}$ |
| GLSJ, GLSY                | $\frac{0.31}{8.0}$  | $\frac{0.08}{2.0}$ | $\frac{0.16}{4.0}$ | $\frac{0.17}{4.4}$ | $\frac{0.012}{0.3}$ | $\frac{0.63}{16.0}$ |



**REEL SPECIFICATIONS**

| Model Series \ Dimension  | A               | B                   | C                   | D                    | E                    | Qty. Per Reel |
|---------------------------|-----------------|---------------------|---------------------|----------------------|----------------------|---------------|
| GLSA, GLSV                | $\frac{7}{180}$ | $\frac{2.36}{60.0}$ | $\frac{0.51}{13.0}$ | $\frac{0.724}{18.4}$ | $\frac{0.488}{12.4}$ | 1000          |
| GLSZ                      | $\frac{7}{180}$ | $\frac{2.36}{60.0}$ | $\frac{0.51}{13.0}$ | $\frac{0.724}{18.4}$ | $\frac{0.488}{12.4}$ | 2000          |
| GLSB, GLSD,<br>GLSU, GLSW | $\frac{7}{180}$ | $\frac{2.36}{60.0}$ | $\frac{0.51}{13.0}$ | $\frac{0.724}{18.4}$ | $\frac{0.488}{12.4}$ | 2000          |
| GLSJ, GLSY                | $\frac{7}{180}$ | $\frac{2.36}{60.0}$ | $\frac{0.51}{13.0}$ | $\frac{0.882}{22.4}$ | $\frac{0.646}{16.4}$ | 1000          |





Engineering Bulletin SG-890 describes a wide range of fixed and variable surface mount inductors, coils, transformers and filters. Parts are wound as air coils, or on a selection of ferrite cores, and can be used up to the GHz frequency range.

The SURFCOIL® models operate over the professional grade temperature of  $-40^{\circ}$  to  $+125^{\circ}\text{C}$ . (Sprague Goodman's selection of SURFCOIL SMT chip inductors, which operate over the temperature range of  $-25^{\circ}$  to  $+85^{\circ}\text{C}$ , are described in Engineering Bulletin SG-800.)

Our products are used in telecommunications and electronic engineering as frequency-selective components consisting of individual or coupled

resonant circuits. Non-tunable tapped coils and coils with multiple windings are also required for applications such as DC isolation, voltage and current transformations and impedance matching (between amplifier stages, for example).

Fixed inductors are used in all areas of telecommunications, video and medical electronic equipment. They are ideal in radio interference suppression devices, filters, and decoupling of oscillator and amplifier stages.

If the component you need for your design is not shown in this bulletin, let us know—the design you need may already be in our design file, or we will design a special to your specifications.



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