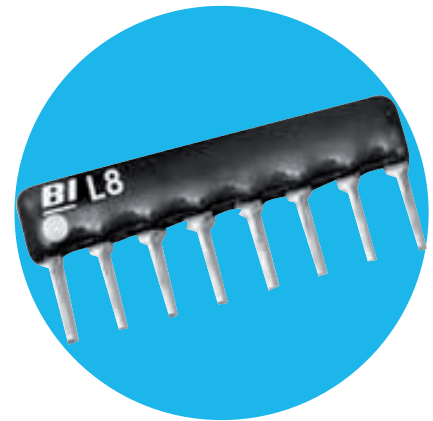



## SIL Resistor Network

### L Series

- Thick Film
- Low Profile SIP
- Conformal Coated
- Resistor Networks
- RoHS Compliant



 All parts are Pb-free and comply with EU Directive 2011/65/EU (RoHS2)

### Electrical

|   |   |
|---|---|
| Standard Resistance Range, Ohms                 | 1%: 22R - 1M; 2%: 10R - 5M6; 5%: 10R - 10M  |
| Standard Resistance Tolerance, at 25°C          | ±2%<br>Optional: ±1% (F Tol.), ±5% (J Tol.) |
| Operating Temperature Range                     | -55°C to +125°C                             |
| Temperature Coefficient of Resistance           | ±100ppm/°C (<50 Ohms = ±250ppm/°C)          |
| Temperature Coefficient of Resistance, Tracking | ±50ppm/°C                                   |
| Maximum Operating Voltage                       | 100Vdc or VPR                               |
| Insulation Resistance                           | ≥10,000 Megohms                             |

### Environmental

|   |                         |
|---|-------------------------|
| Thermal Shock plus Power Conditioning                           | ΔR 0.70%                |
| Short Time Overload   | ΔR 0.25%                |
| Terminal Strength   | ΔR 0.25%                |
| Moisture Resistance   | ΔR 0.50%                |
| Mechanical Shock  | ΔR 0.25%                |
| Vibration   | ΔR 0.25%                |
| Low Temperature Storage   | ΔR 0.25%                |
| High Temperature Exposure                                       | ΔR 0.50%                |
| Load Life, 1,000 Hours  | ΔR 1.00%                |
| Resistance to Solder Heat (Per MIL-STD-202, Method 210, Cond.B) | ΔR 0.25%                |
| Dielectric Withstand Voltage                                    | 200V for 1 minute       |
| Marking Permanency  | MIL-STD 202, Method 215 |
| Lead Solderability  | MIL-STD 202, Method 208 |
| Flammability  | UL-94V-O Rated          |
| Storage Temperature Range                                       | -55°C to +150°C         |

Specifications subject to change without notice.

#### General Note

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L Series

## Mechanical

|                    |                                     |
|--------------------|-------------------------------------|
| Lead Finish        | SnAgCu                              |
| Substrate Material | Alumina                             |
| Resistor Material  | Cermet                              |
| Body Material      | Conformal Epoxy Resin, red or black |

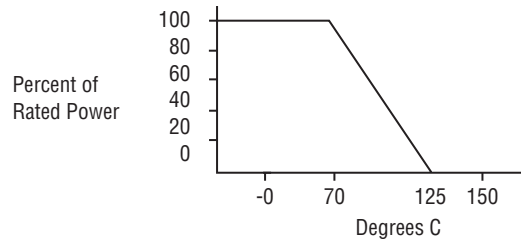
### Standard Resistance Values, Ohms

### Power Derating Curve

| -3 Circuit (Isolated Resistors) & -1 Circuits (Bussed Resistors) |      |      |      |      |      |
|--|------|------|------|------|------|
| Ohms   | Code | Ohms | Code | Ohms | Code |
| 22   | 220  | 820  | 821  | 33K  | 333  |
| 27   | 270  | 1K   | 102  | 39K  | 393  |
| 33   | 330  | 1.2K | 122  | 47K  | 473  |
| 39   | 390  | 1.5K | 152  | 51K  | 513  |
| 47   | 470  | 1.8K | 182  | 56K  | 563  |
| 51   | 510  | 2K   | 202  | 68K  | 683  |
| 56   | 560  | 2.2K | 222  | 82K  | 823  |
| 68   | 680  | 2.7K | 272  | 100K | 104  |
| 82   | 820  | 3.3K | 332  | 120K | 124  |
| 100  | 101  | 3.9K | 392  | 150K | 154  |
| 120  | 121  | 4.7K | 472  | 180K | 184  |
| 150  | 151  | 5.1K | 512  | 200K | 204  |
| 180  | 181  | 5.6K | 562  | 220K | 224  |
| 200  | 201  | 6.8K | 682  | 270K | 274  |
| 220  | 221  | 8.2K | 822  | 330K | 334  |
| 270  | 271  | 10K  | 103  | 390K | 394  |
| 330  | 331  | 12K  | 123  | 470K | 474  |
| 390  | 391  | 15K  | 153  | 510K | 514  |
| 470  | 471  | 18K  | 183  | 560K | 564  |
| 510  | 511  | 20K  | 203  | 680K | 684  |
| 560  | 561  | 22K  | 223  | 820K | 824  |
| 680  | 681  | 27K  | 273  | 1Meg | 105  |

| -5 Circuit (Dual Terminators) |         |         |         |         |         | Power Dissipation, Watts At 70°C |         |      |      |      |
|-------------------------------|---------|---------|---------|---------|---------|----------------------------------|---------|------|------|------|
| Ohms                          | Code    | Ohms    | Code    | Ohms    | Code    | — Resistor (Per Circuit) —       |         |      |      |      |
| R1/R2                         | R1/R2   | R1/R2   | R1/R2   | R1/R2   | R1/R2   | Model                            | Package | -1   | -3   | -5   |
| 180/390                       | 181/391 | 330/390 | 331/391 | 3K/6.2K | 302/622 | L06                              | .6      | .125 | .200 | .125 |
| 220/270                       | 221/271 | 330/470 | 331/471 | -       | -       | L08                              | .8      | .125 | .200 | .125 |
| 220/330                       | 221/331 | 330/680 | 331/681 | -       | -       | L10                              | 1.0     | .125 | .200 | .125 |

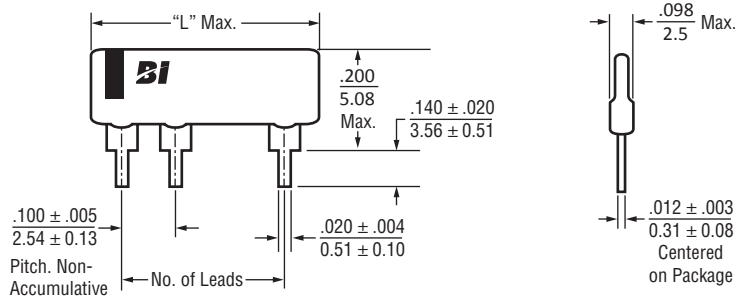


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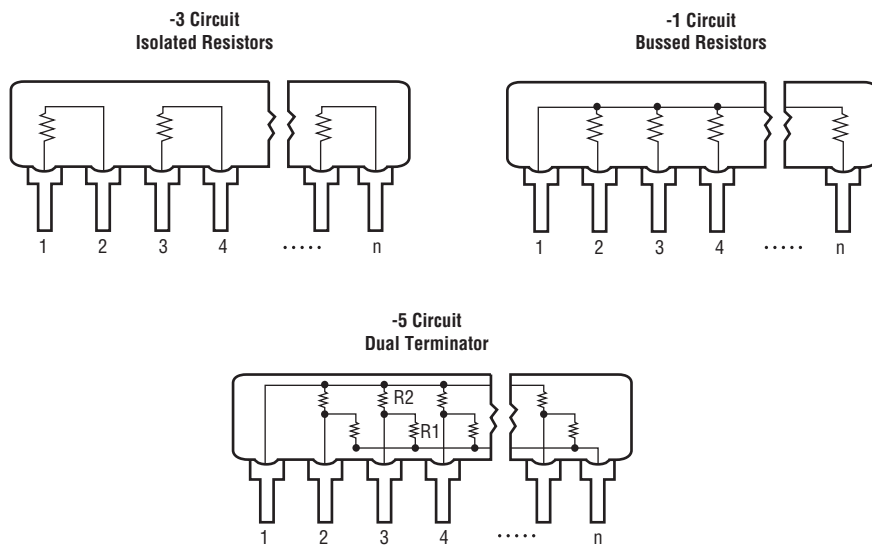
L Series

### Outline Dimensions (Inch/mm)



| # of Leads    | 4            | 5            | 6            | 7            | 8            | 9            | 10            | 11            | 12            | 13            | 14            |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Dim. "L" Max. | .40<br>10.16 | .50<br>12.70 | .60<br>15.24 | .70<br>17.78 | .80<br>20.32 | .90<br>22.86 | 1.00<br>25.40 | 1.10<br>27.94 | 1.20<br>30.48 | 1.30<br>33.02 | 1.40<br>35.56 |

### Schematics

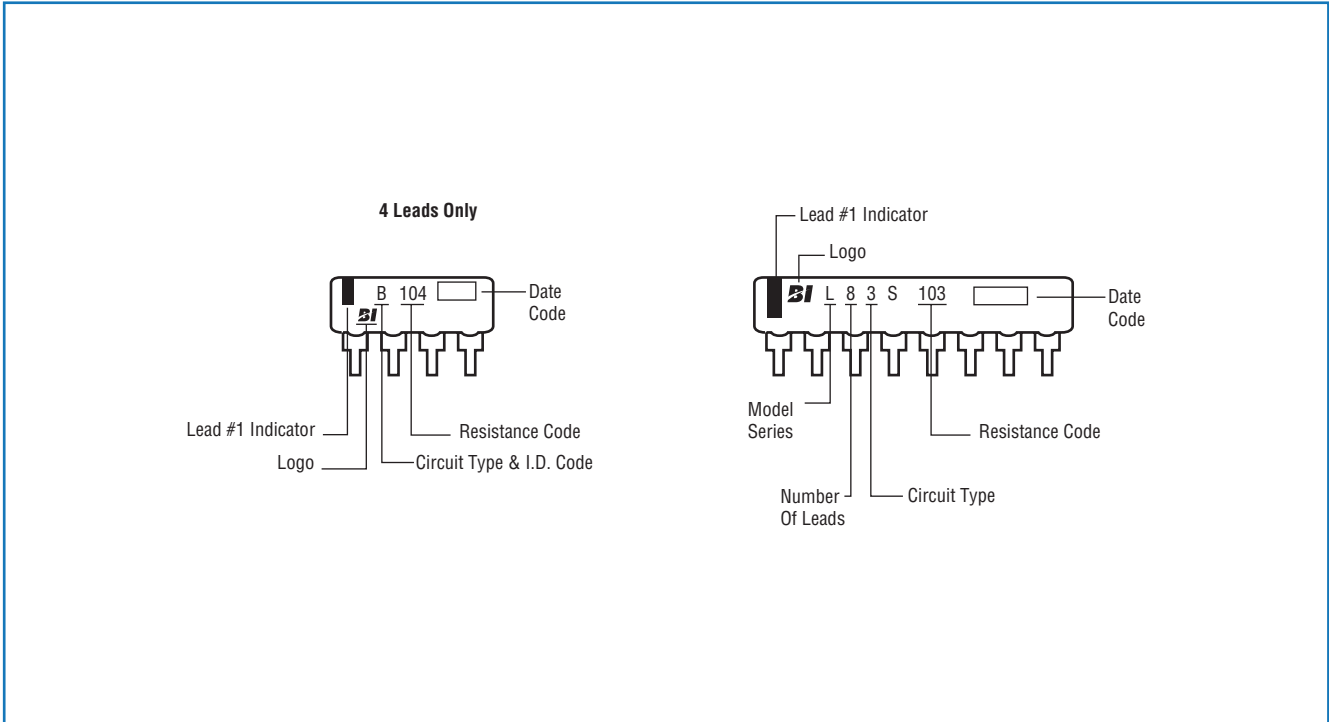


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L Series

## Typical Part Marking



## Packaging

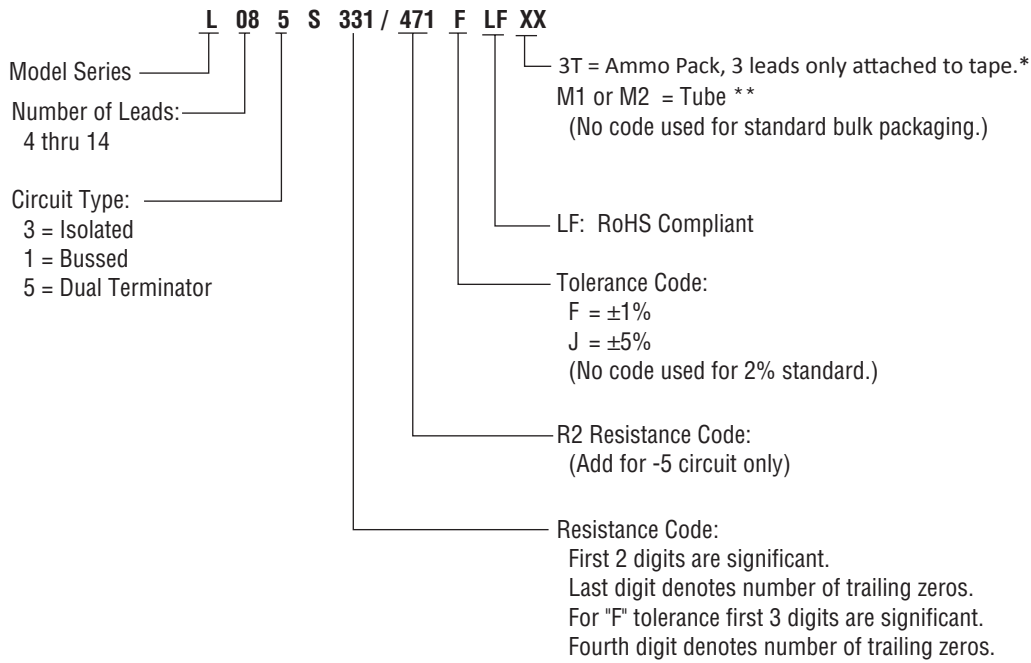
|           |   |          |  |  |
|-----------|---|----------|--|--|
| Standard: | Bulk:   | Quantity | =  | 4 -10 pins: 200 per bag, 1000 per box<br>11 -14 pins: 100 per bag, 500 per box |
| Option:   | Tape in Ammo Box (4 - 10 pins only).<br>All Units oriented with lead #1 to the left of direction of feed. |          |  |  |
|           | Tape:   | Width    | =  | 18mm   |
|           |   | Pitch    | =  | 12.7mm   |
| Ammo Box: | Capacity  | =        | 1,000 units per box. 12,000 units per carton |  |

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L Series

## Ordering Information



\* Refer to Packaging for Automation section (Page A-3) for Ammo Pack capacity and dimensions.

\*\* Refer to Packaging for Automation section (Page A-4) for M1 and M2 tube capacity and dimensions.

## Applicable Documents

|   |
|---|
| MIL-R-83401 — Resistor Networks, Fixed, Film, General Specifications      |
| MIL-STD-105 — Sampling Procedures and Tables for Inspection by Attributes |
| MIL-STD-202 — Test Methods for Electronic and Electrical Component Parts  |

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