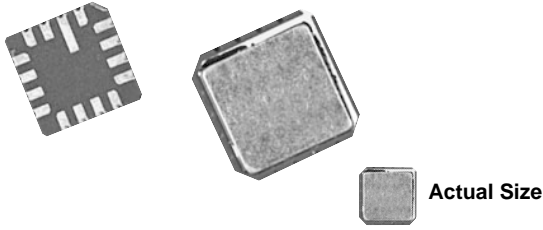


### Hermetic, 50 Mil Pitch, Leadless Chip Resistor Networks



#### FEATURES

- High purity alumina substrate for high power dissipation
- Leach resistant terminations with nickel barrier
- 16, 20, 24 terminal gold plated wraparound true hermetic packaging

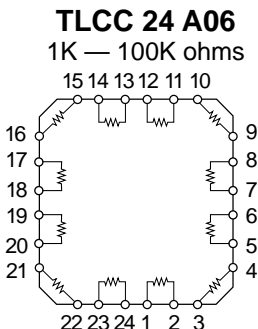
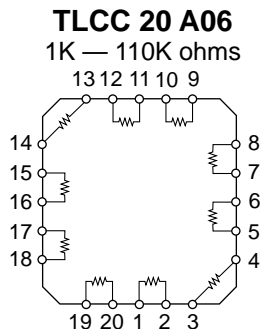
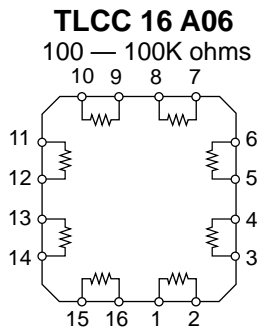
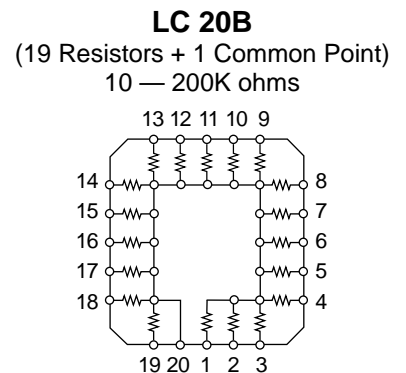
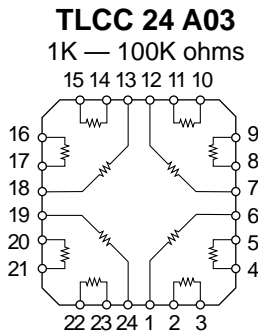
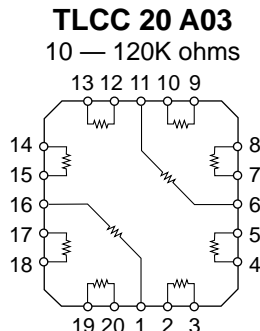
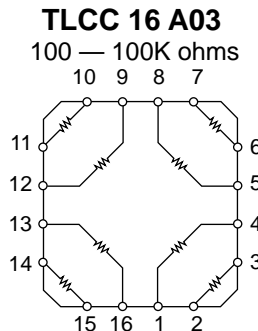
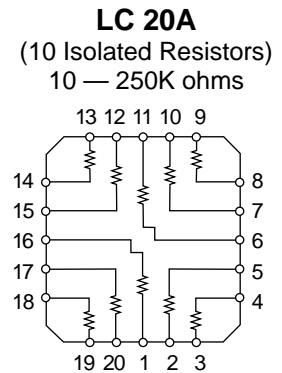
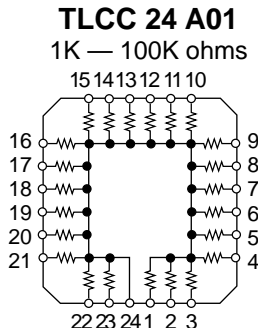
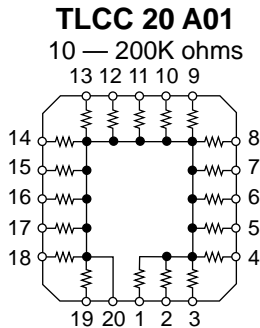
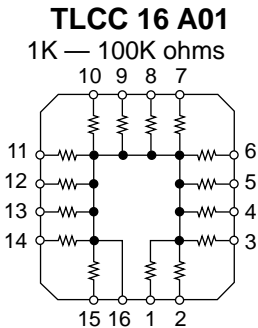
Vishay Thin Film offers a wide resistance range in 16, 20, and 24 terminal hermetic leadless chip carriers. The standard circuits in the ohmic ranges listed below will utilize the outstanding wraparound terminations developed for chip resistors. Should one of the standards not fit your application, consult the factory for a custom circuit.

#### TYPICAL PERFORMANCE

|     | ABS | TRACKING |
|-----|-----|----------|
| TCR | 25  | 5        |
|     | ABS | RATIO    |
| TOL | 0.1 | N/A      |

#### SCHEMATIC

Resistance Range: Noted on schematics



# LCC, TLCC

Vishay Thin Film Hermetic, 50 Mil Pitch, Leadless Chip Resistor Networks

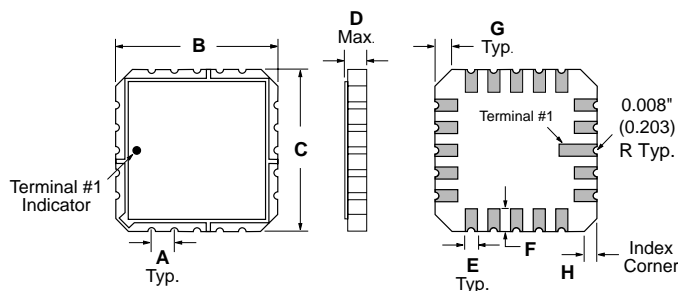


## STANDARD ELECTRICAL SPECIFICATIONS

| TEST                        | SPECIFICATIONS      |  | CONDITIONS         |
|-----------------------------|---------------------|--|--------------------|
| MATERIAL                    | TAMELOX®            |  |                    |
| TCR:                        | Tracking            | ± 5ppm/°C  | - 55°C to + 125°C  |
|                             | Absolute            | ± 25ppm/°C, ± 50ppm/°C, ± 100ppm/°C, and ± 300ppm/°C       | - 55°C to + 125°C  |
| Tolerance:                  | Ratio               | N/A  |                    |
|                             | Absolute            | ± 1.0%, ± 0.5%, ± 0.25%, ± 0.1%                            | + 25°C             |
| Power Rating:               | Resistor            | 50mW Max. (common circuits) 100mW Max. (isolated circuits) | Max. @ + 70°C      |
|                             | Package             | 500mW  | Max. @ + 70°C      |
| Stability:                  | ΔR Absolute         | 0.1%   | 2000 hrs. @ + 70°C |
|                             | ΔR Ratio            | 0.03%  | 2000 hrs. @ + 70°C |
| Voltage Coefficient         | < 5ppm/Volt typical |  |                    |
| Working Voltage             | 100 Volts           |  |                    |
| Operating Temperature Range | - 55°C to + 125°C   |  |                    |
| Storage Temperature Range   | - 55°C to + 150°C   |  |                    |
| Noise                       | < - 30dB            |  |                    |
| Thermal EMF                 | 0.008μV/°C          |  |                    |
| Shelf Life Stability:       | Absolute            | 100ppm   | 1 year @ +25°C     |
|                             | Ratio               | 20ppm  | 1 year @ +25°C     |

\*Tantalum Nitride film is custom, consult factory

## DIMENSIONS in inches (millimeters)



|        | A      | B       | C       | D      | E       | F      | G      | H       |
|--------|--------|---------|---------|--------|---------|--------|--------|---------|
| 16 Pin | 0.050" | 0.300"  | 0.300"  | 0.077" | 0.025"  | 0.050" | 0.040" | 0.020"  |
| (mm)   | (1.27) | (7.62)  | (7.62)  | (1.96) | (0.635) | (1.27) | (1.02) | (0.508) |
| 20 Pin | 0.050" | 0.350"  | 0.350"  | 0.077" | 0.025"  | 0.050" | 0.040" | 0.020"  |
| (mm)   | (1.27) | (8.89)  | (8.89)  | (1.96) | (0.635) | (1.27) | (1.02) | (0.508) |
| 24 Pin | 0.050" | 0.400"  | 0.400"  | 0.077" | 0.025"  | 0.050" | 0.040" | 0.020"  |
| (mm)   | (1.27) | (10.16) | (10.16) | (1.96) | (0.635) | (1.27) | (1.02) | (0.508) |

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| <b>MECHANICAL SPECIFICATIONS</b> |                   |
|----------------------------------|-------------------|
| Resistive Element                | Tamelox®          |
| Substrate Material               | Alumina           |
| Body                             | Ceramic           |
| Terminals                        | Gold over Nickel  |
| Marking Resistance to Solvents   | Per MIL-PRF-83401 |

**How to Order**

| Series   | #Pins                               | Schematic  | TCR Characteristic   | Resistance Value   | Tolerance   |
|--|-------------------------------------|--|--|--|---|
| <b>LC</b> or<br><b>TLCC</b> =<br>Leadless<br>Chip<br>Resistor<br>Network<br><br><b>50 mil<br/>center<br/>package</b> | <b>16</b><br><b>20</b><br><b>24</b> | <b>A</b> = Isolated resistors<br><br><b>B</b> = Resistors to<br>common<br><br><b>A01</b> = Resistors to<br>common<br><br><b>A03</b> = Isolated resistors<br><br><b>A06</b> = Isolated resistor | <b>E</b> = ±25 ppm/°C<br><b>H</b> = ±50 ppm/°C<br><b>K</b> = ±100 ppm/°C<br><b>M</b> = ±300 ppm/°C | The first 3 digits are significant figures and the last digit specifies the number of zeros to follow. "R" designates the decimal point.<br><b>Example:</b><br>10 ohms = 10R0<br>12.5 ohms = 12R5<br>100 ohms = 1000<br>1000 ohms = 1001 | <b>B</b> = ±0.1%<br><b>D</b> = ±0.5%<br><b>F</b> = ±1.0%<br><b>G</b> = ±2.0%<br><b>J</b> = ±5.0%<br><b>K</b> = ±10.0%<br><b>S</b> = Special |

**Example:** **LC20BK1003J** is a 20 terminal leadless chip carrier, 50 mil center with 100K ohms, ±5.0% tolerance, 19 resistors all common to terminal 20, TCR of ±100 ppm/°C, in a hermetic package.