**ELECTRICAL**

Standard Resistance Range, Ohms
22 to 1Meg

Standard Resistance Tolerance, at 25°C
±2%

Optional: ±1% (F Tol.), ±5% (J Tol.)

Operating Temperature Range
-55°C to +125°C

Temperature Coefficient of Resistance
±100ppm/°C (<100 Ohms = ±250ppm/°C)

Temperature Coefficient of Resistance, Tracking
±50ppm/°C

Maximum Operating Voltage
100Vdc or √PR

Insulation Resistance
≥10,000 Megohms

**ENVIRONMENTAL**

Thermal Shock plus Power Conditioning
∆R 0.70%

Short Time Overload
∆R 0.25%

Terminal Strength
∆R 0.25%

Moisture Resistance
∆R 0.50%

Mechanical Shock
∆R 0.25%

Vibration
∆R 0.25%

Low Temperature Storage
∆R 0.25%

High Temperature Exposure
∆R 0.50%

Load Life, 1,000 Hours
∆R 1.00%

Resistance to Solder Heat (Per MIL-STD-202, Method 210, Cond.B)
∆R 0.25%

Dielectric Withstanding 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.
## MECHANICAL

Lead Material: 
- Steel Alloy (Standard)
- Copper Alloy (Optional)

Lead Finish: 90/10 Tin-Lead

Substrate Material: Alumina

Resistor Material: Cermet

Body Material: Conformal Epoxy Resin

## STANDARD RESISTANCE VALUES, OHMS

### -3 Circuit (Isolated Resistors) & -1 Circuits (Bussed Resistors)

<table>
<thead>
<tr>
<th>Ohms</th>
<th>Code</th>
<th>Ohms</th>
<th>Code</th>
<th>Ohms</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>220</td>
<td>820</td>
<td>821</td>
<td>33K</td>
<td>333</td>
</tr>
<tr>
<td>27</td>
<td>270</td>
<td>1K</td>
<td>102</td>
<td>39K</td>
<td>393</td>
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<tr>
<td>33</td>
<td>330</td>
<td>1.2K</td>
<td>122</td>
<td>47K</td>
<td>473</td>
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<tr>
<td>39</td>
<td>390</td>
<td>1.5K</td>
<td>152</td>
<td>51K</td>
<td>513</td>
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<tr>
<td>47</td>
<td>470</td>
<td>1.8K</td>
<td>182</td>
<td>56K</td>
<td>563</td>
</tr>
<tr>
<td>51</td>
<td>510</td>
<td>2K</td>
<td>202</td>
<td>68K</td>
<td>683</td>
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<tr>
<td>56</td>
<td>560</td>
<td>2.2K</td>
<td>222</td>
<td>82K</td>
<td>823</td>
</tr>
<tr>
<td>68</td>
<td>680</td>
<td>2.7K</td>
<td>272</td>
<td>100K</td>
<td>104</td>
</tr>
<tr>
<td>82</td>
<td>820</td>
<td>3.3K</td>
<td>332</td>
<td>120K</td>
<td>124</td>
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<tr>
<td>100</td>
<td>101</td>
<td>3.9K</td>
<td>392</td>
<td>150K</td>
<td>154</td>
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<td>120</td>
<td>121</td>
<td>4.7K</td>
<td>472</td>
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<td>184</td>
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<tr>
<td>150</td>
<td>151</td>
<td>5.1K</td>
<td>512</td>
<td>200K</td>
<td>204</td>
</tr>
<tr>
<td>180</td>
<td>181</td>
<td>5.6K</td>
<td>562</td>
<td>220K</td>
<td>224</td>
</tr>
<tr>
<td>200</td>
<td>201</td>
<td>6.8K</td>
<td>682</td>
<td>270K</td>
<td>274</td>
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<tr>
<td>220</td>
<td>221</td>
<td>8.2K</td>
<td>822</td>
<td>330K</td>
<td>334</td>
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<tr>
<td>270</td>
<td>271</td>
<td>10K</td>
<td>103</td>
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<td>183</td>
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<td>20K</td>
<td>203</td>
<td>680K</td>
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<tr>
<td>560</td>
<td>561</td>
<td>22K</td>
<td>223</td>
<td>820K</td>
<td>824</td>
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<td>680</td>
<td>681</td>
<td>27K</td>
<td>273</td>
<td>1Meg</td>
<td>105</td>
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</table>

### -5 Circuit (Dual Terminators)

<table>
<thead>
<tr>
<th>Ohms</th>
<th>Code</th>
<th>Ohms</th>
<th>Code</th>
<th>Ohms</th>
<th>Code</th>
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</thead>
<tbody>
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<td>R1/R2</td>
<td>R1/R2</td>
<td>R1/R2</td>
</tr>
<tr>
<td>180/390</td>
<td>181/391</td>
<td>330/390</td>
<td>331/391</td>
<td>3K/6.2K</td>
<td>302/622</td>
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<tr>
<td>220/270</td>
<td>221/271</td>
<td>330/470</td>
<td>331/471</td>
<td></td>
<td></td>
</tr>
<tr>
<td>220/330</td>
<td>221/331</td>
<td>330/680</td>
<td>331/681</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## POWER DERATING CURVE

![Power Derating Curve Graph]

Percent of Rated Power vs. Degrees C

## POWER DISSIPATION, WATTS AT 70°C

<table>
<thead>
<tr>
<th>Model</th>
<th>Package</th>
<th>-1</th>
<th>-3</th>
<th>-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>L06</td>
<td>.6</td>
<td>.125</td>
<td>.200</td>
<td>.125</td>
</tr>
<tr>
<td>L08</td>
<td>.8</td>
<td>.125</td>
<td>.200</td>
<td>.125</td>
</tr>
<tr>
<td>L10</td>
<td>1.0</td>
<td>.125</td>
<td>.200</td>
<td>.125</td>
</tr>
</tbody>
</table>
### OUTLINE DIMENSIONS (Inch/mm)

**SCHEMATICS**

- **-3 Circuit Isolated Resistors**

- **-1 Circuit Bussed Resistors**

- **-5 Circuit Dual Terminator**
**TYPICAL PART MARKING**

4 Leads Only

- Lead #1 Indicator
- Resistance Code
- Circuit Type & I.D. Code
- Date Code
- Model Series
- Factory Code
- Number Of Leads
- Circuit Type

**PACKAGING**

**Standard:**
- Bulk: Quantity = 500 (Europe)
- 200 Units (USA/Asia)

**Option:**
- Tape in Ammo Box (Steel pins only).
  - 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

**Option:**
- Magazine
  - Dimensions conform to EIA & JEDEC standards.
  - All Units oriented with lead #1 to the same side.

  - **Magazine:**
    - Material = Antistatic Plastic
**ORDERING INFORMATION**

Model Series
L 08 5 C 331 / 471 F XX

- **Number of Leads:** 4 thru 14
- **Circuit Type:**
  - 3 = Isolated
  - 1 = Bussed
  - 5 = Dual Terminator
- **Lead Code:**
  - S = Steel Leads
  - C = Copper Leads

- **Packaging Option:**
  - T = Ammo Pack, Steel Leads only
  - All leads attached to tape.*
  - 3T = Ammo Pack, Steel Leads only
  - 3 leads only attached to tape.*
  - M1 or M2 = Tube **
  - (No code used for standard bulk packaging.)

- **Tolerance Code:**
  - F = ±1%
  - J = ±5%
  - (No code used for 2% standard.)

- **R2 Resistance Code:**
  - (Add for -5 circuit only)

- **Resistance Code:**
  - First 2 digits are significant.
  - Last digit denotes number of trailing zeros.
  - For "F" tolerance first 3 digits are significant.
  - Fourth digit denotes number of trailing zeros.

* 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.

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**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