High Power Ledged Chip Attenuators

Style LA1

General Specifications

- Frequency Range: DC to 3 GHz
- Input Power*: 150 Watts
- Operating Temp Range: -55 to +150˚C
- Attenuation Stability**: 0.0001 dB/db/°C, Max.
- Resistive Elements: Tantalum Nitride
- Substrate Material: Aluminum Nitride
- Tabs: 99.99% Pure Silver, .004 inches thick, Cover: Alumina
- RoHS Compliant
- Reliability: MIL-PRF-55342

Mechanical Tolerance: ±.010 inch unless otherwise specified

<table>
<thead>
<tr>
<th>ATC Part Number</th>
<th>Nominal Attenuation (dB)</th>
<th>Frequency Sensitivity (dB, max.)</th>
<th>Maximum Deviation from Nominal (dB)</th>
<th>VSWR (max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA13740P01DBFBK</td>
<td>1</td>
<td>± 0.20</td>
<td>+0.45 / -0.15</td>
<td>1.55</td>
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<tr>
<td>LA13740P02DBFBK</td>
<td>2</td>
<td>± 0.30</td>
<td>0.50 / -0.30</td>
<td>1.50</td>
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<tr>
<td>LA13740P03DBFBK</td>
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<td>0.60 / -0.30</td>
<td>1.50</td>
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<tr>
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<td>± 0.30</td>
<td>+0.60 / -0.20</td>
<td>1.30</td>
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<td>LA13740P09DBFBK</td>
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<td>± 0.30</td>
<td>+0.60 / -0.20</td>
<td>1.30</td>
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<tr>
<td>LA13740P10DBFBK</td>
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<td>+0.40 / -0.40</td>
<td>1.25</td>
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<td>+1.00 / -1.20</td>
<td>1.30</td>
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<tr>
<td>LA13740P20DBFBK</td>
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<td>± 1.00</td>
<td>+1.00 / -1.20</td>
<td>1.25</td>
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<td>+1.75 / -1.20</td>
<td>1.25</td>
</tr>
</tbody>
</table>

For Attenuator Power Handling vs. Mounting Surface Temperature, see following page.

ATC Leaded Chip Attenuators
Part Number Code

Case Style
Case Size
Termination

LA1 3740 P02 DB FK

Packaging
BK - Plastic Carrier

Tolerance
F ±1%

Value
### Notes:
1. Plot refers to incident continuous power of “P” Watts
2. Mounting surface is assumed an isotherm at T_M °C
3. Actual testing done at P = 100 Watts, T_M = 100 °C
4. Plot based on 1-dimensional heat transfer formula: T = T_M + PR, where
   - T = area-average resistive film temperature, held to 150 °C, max.
   - R = thermal resistance, mounting surface to resistive film = 0.5 °C/W
   - for 30- and 20- dB devices (other values will run cooler and therefore handle more power – consult factory)

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#### Test Condition:
With mounting surface temperature = 75 °C, max. (see plot above). Actual test conditions are as follows:
Flange attached to a large copper carrier whose surface, directly under the flange center, is held at 100 °C; power applied = 100 Watts. Specification: The attenuation shall change no more than 0.2 dB during and after a 100-hr. Burn-in per MIL-PRF-55342.

**Attenuation vs. frequency as a function of temperature, -55°C to +125°C**