Dual Inductor for Class D – GA3416-CL

- Dual inductor for use in Class D output filter
- Very low magnetic coupling
- AEC-Q200 Grade 1 qualified
- Shielded surface mount package with both coils and additional mounting pads for excellent board adhesion

Output Power

<table>
<thead>
<tr>
<th>Power typ (W)</th>
<th>Temperature rise from 25°C (°C)</th>
<th>Load</th>
<th>THD+N</th>
<th>Test condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>17.0</td>
<td>4 Ohm</td>
<td>1%</td>
<td>1 kHz, 14.4 Vdc</td>
</tr>
<tr>
<td>25</td>
<td>20.0</td>
<td>4 Ohm</td>
<td>10%</td>
<td>1 kHz, 14.4 Vdc</td>
</tr>
<tr>
<td>44</td>
<td>30.7</td>
<td>4 Ohm</td>
<td>1%</td>
<td>1 kHz, 21 Vdc</td>
</tr>
<tr>
<td>54</td>
<td>35.0</td>
<td>4 Ohm</td>
<td>10%</td>
<td>1 kHz, 21 Vdc</td>
</tr>
<tr>
<td>33</td>
<td>46.5</td>
<td>2 Ohm</td>
<td>1%</td>
<td>1 kHz, 14.4 Vdc</td>
</tr>
<tr>
<td>40</td>
<td>51.6</td>
<td>2 Ohm</td>
<td>10%</td>
<td>1 kHz, 14.4 Vdc</td>
</tr>
</tbody>
</table>

Core material
Ferrite

Terminations
RoHS compliant tin-silver (96.5/3.5) over copper (leads), electroplated gold (<50 µin) over nickel over phos bronze (additional mounting pads). Other terminations available at additional cost.

Weight
7.8 g

Ambient temperature
-40°C to +125°C with Irms current

Maximum part temperature
+165°C (ambient + temp rise)

Storage temperature
Component: –40°C to +165°C
Tape and reel packaging: –40°C to +80°C

Resistance to soldering heat
Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

Packaging
200/13″ reel: Plastic tape: 32 mm wide, 0.4 mm thick, 20 mm pocket spacing, 12.95 mm pocket depth

PCB washing
Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

1. When ordering, please specify termination and packaging codes:

   - Termination: L = RoHS compliant tin-silver (96.5/3.5) over copper (leads), gold over nickel over phos bronze (additional mounting pads).
   - Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
   - Packaging: D = 13″ machine-ready reel. EIA-481 embossed plastic tape (200 parts per full reel).
   - B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

2. Maximum power into specified load that causes a 40°C temperature rise. Measured at 1 kHz with a 14.4 Vdc supply for the 2-Ohm load and a 21 Vdc supply for the 4-Ohm load. Refer to Output Power table for typical output conditions. Tested using the TAS5414A Evaluation Board from Texas Instruments.
3. Inductance measured at 500 kHz, 0.5 Vrms, 0 Adc using an Agilent/HP 4284A impedance analyzer.
4. DCR measured on a micro-ohmmeter.
5. SRF measured using Agilent/HP 8753D network analyzer.
6. Total harmonic distortion + noise measured at 23 W into a 2-Ohm or 4-Ohm load at 1 kHz with a 21 Vdc supply.
7. DC current at 25°C that causes the specified inductance drop from its value without current.
8. Current applied to both windings at the same time that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
9. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
Class D Dual Inductor – GA3416-CL

L vs Current

ESR vs Frequency

Dimensions are in inches or mm

Dot indicates pin 1

Recommended Land Pattern

Pads provided for mounting stability only