High Power PoE Transformers

- Optimized for STMicroelectronics high-power PoE PD controller evaluation board STEVAL-POE00xV1
- Designed to meet upcoming IEEE 802.3bt standard
- Operates at 250 kHz with 36 – 72 Volts input.

Core material: Ferrite
Terminations: RoHS tin-silver-copper over tin over nickel over phosphor bronze. Other terminations available at additional cost.
Weight: 11.5 – 13.5 g
Ambient temperature: –40°C to +125°C
Max part temperature: +165°C (ambient + self-heating)
Storage temperature: –40°C to +165°C
Tape and reel packaging: –40°C to +80°C
Resistance to soldering heat: Max three 40 second refloows 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: 175 per 13” reel. Plastic tape: 44 mm wide, 0.5 mm thick, 32 mm pocket spacing, 12 mm pocket depth

Active Clamp Forward Transformers

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance at 0 A² (µH)</th>
<th>DCR max (Ohms)</th>
<th>Leakage inductance at 3.5 A³ (µH)</th>
<th>Turns ratio</th>
<th>Isolation (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pri</td>
<td>sec</td>
<td>aux</td>
<td>pri : sec : aux</td>
<td>Output</td>
</tr>
<tr>
<td>RA7129-BLD</td>
<td>134 ±25%</td>
<td>0.0265</td>
<td>0.0035</td>
<td>0.174</td>
<td>0.180</td>
</tr>
<tr>
<td>MA5509-CLD</td>
<td>70 ±10%</td>
<td>0.0590</td>
<td>0.0028</td>
<td>0.300</td>
<td>0.838</td>
</tr>
</tbody>
</table>

Flyback Transformers

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance at 0 A² (µH)</th>
<th>Inductance at 3.5 A³ (µH)</th>
<th>DCR max (Ohms)</th>
<th>Leakage inductance max (µH)</th>
<th>Turns ratio</th>
<th>Isolation (Vrms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pri</td>
<td>sec</td>
<td>bias</td>
<td>pri : sec : bias</td>
<td>Output</td>
<td></td>
</tr>
<tr>
<td>NA6083-BLD</td>
<td>70 ±10%</td>
<td>60</td>
<td>0.111</td>
<td>0.006</td>
<td>0.66</td>
<td>1.820</td>
</tr>
</tbody>
</table>

1. Packaging: D = 13” machine-ready reel. EIA-481 embossed plastic tape (175 parts per full reel). Quantities less than full reel available; in tape (not machine ready) or with leader and trailer ($25 charge).
2. Inductance for is for the primary, measured at 250 kHz, 0.2 Vrms, 0 Adc.
3. Minimum inductance for the primary, measured at 250 kHz, 0.2 Vrms, 3.5 Adc.
4. Leakage inductance is for the primary winding with the secondary windings shorted.
5. Isolation (hipot) is measured for one minute: 1500Vrms from primary and aux/bias to secondary; 500Vrms from primary to aux/bias.
6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

Schematic

Connect pin 1 to 2 and pin 3 to 4 on the PC board.
Connect pins 10, 11 and 12 together and pins 7, 8 and 9 together on the PC board.
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Dimensions

- Dot indicates pin 1
- Part number
- Internal code

Recommended Land Pattern

Dimensions are in inches or mm