Avionics Pulsed Power Transistor
15W, 1030-1090 MHz, 250µs Pulse, 10% Duty

Features
- NPN silicon microwave power transistors
- Common base configuration
- Broadband Class C operation
- High efficiency inter-digitized geometry
- Diffused emitter ballasting resistors
- Gold metallization system
- Internal input and output impedance matching
- Hermetic metal/ceramic package
- RoHS Compliant

Absolute Maximum Ratings at 25°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Rating</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collector-Emitter Voltage</td>
<td>V_CES</td>
<td>60</td>
<td>V</td>
</tr>
<tr>
<td>Emitter-Base Voltage</td>
<td>V_EBO</td>
<td>3.0</td>
<td>V</td>
</tr>
<tr>
<td>Collector Current (Peak)</td>
<td>I_C</td>
<td>1.0</td>
<td>A</td>
</tr>
<tr>
<td>Power Dissipation @ +25°C</td>
<td>P_TOT</td>
<td>58</td>
<td>W</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>T_STG</td>
<td>-65 to 200</td>
<td>°C</td>
</tr>
<tr>
<td>Junction Temperature</td>
<td>T_J</td>
<td>200</td>
<td>°C</td>
</tr>
</tbody>
</table>

Electrical Specifications: \( T_C = 25 \pm 5°C \) (Room Ambient)
Avionics Pulsed Power Transistor
15W, 1030-1090 MHz, 250μs Pulse, 10% Duty

Typical RF Performance

<table>
<thead>
<tr>
<th>Freq. (MHz)</th>
<th>Pin (W)</th>
<th>Pout (W)</th>
<th>Gain (dB)</th>
<th>Ic (A)</th>
<th>Eff (%)</th>
<th>RL (dB)</th>
<th>VSWR-S (1.5:1)</th>
<th>VSWR-T (3:1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1030</td>
<td>1.15</td>
<td>15</td>
<td>11.12</td>
<td>0.604</td>
<td>55.2</td>
<td>-13.8</td>
<td>S</td>
<td>P</td>
</tr>
<tr>
<td>1090</td>
<td>1.28</td>
<td>15</td>
<td>10.69</td>
<td>0.670</td>
<td>49.8</td>
<td>-19.2</td>
<td>S</td>
<td>P</td>
</tr>
</tbody>
</table>

RF Test Fixture Impedance

<table>
<thead>
<tr>
<th>F (MHz)</th>
<th>Z_{IF} (Ω)</th>
<th>Z_{OF} (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1030</td>
<td>1.4 - j4.0</td>
<td>5.5 + j12.7</td>
</tr>
<tr>
<td>1090</td>
<td>1.2 - j3.8</td>
<td>6.9 + j15.5</td>
</tr>
</tbody>
</table>
Avionics Pulsed Power Transistor
15W, 1030-1090 MHz, 250µs Pulse, 10% Duty

RF Power Transfer Curve
1030 MHz, Output Power & Efficiency vs. Input Power

RF Power Transfer Curve
1090 MHz, Output Power & Efficiency vs. Input Power
Test Fixture Circuit Dimensions

Test Fixture Assembly

PH1090-15L

Avionics Pulsed Power Transistor
15W, 1030-1090 MHz, 250µs Pulse, 10% Duty

M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Visit www.macom.com for additional data sheets and product information.

For further information and support please visit: https://www.macom.com/support
PH1090-15L

Avionics Pulsed Power Transistor
15W, 1030-1090 MHz, 250µs Pulse, 10% Duty

M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM’s Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.

For further information and support please visit: https://www.macom.com/support