15 kW DC to DC Converter

GE's 1063000G1 is a silicon carbide (SiC) based High Efficiency DC to DC Converter. The design introduces GE's 1200V SiC MOSFETs packaged in our advanced liquid cooled power modules. Advanced Planar Magnetic technologies were developed by GE to compliment the SiC devices, yielding high power density and reduced weight. Advanced thermal management technologies are employed to enable reliable performance.

**Features:**
- Best-in-Class SiC MOSFETs / Modules
- High Efficiency
- High Power Density (16W/cu.in)
- Reduced weight versus Silicon
- High Reliability
- MIL-PRF-GCS600AVDC Input
- Overcurrent & Overvoltage Protection.
- EMI – MIL-STD-461F
- Power Good, Remote ON/OFF, Temperature BIT Status
- Derating – NAVMAT-P-4855-1
- MTBF > 50,000 Hours, GM at 71°C
- AEC-Q101 SiC device qualification

**Physical:**  
(See ICD 1063001)

- Weight: 17 kg (36 lbs.)
- Dimensions: 305mm x 318mm x 152mm (12” x 12.5” x 6.0”)
- Connector: Input: MIL-C-38999; Output: A-00303-000-S00701
- Mounting: 6mm bolt (¼") (4x)

**Environmental:**
- Operating Temperature: -45°C to +71°C
- Coolant: 60/40 EGW; -45°C to +71°C; 12 lpm
- Temperature Shock: MIL-STD-810E, Method 503.3
- Vibration: MIL-STD-810E Method 514.4, Procedure I for Combined Road March, Tactical & Plume Effects
- Humidity: MIL-STD-810E, Method 507, Procedure III

**Electrical I/O:**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>J1: -305V Pins D, E, F</td>
<td>J2-B: 28Vdc Control Return</td>
<td>J2-F: HV Bus Reset Return</td>
</tr>
<tr>
<td>J3: Output Return (-)</td>
<td>J2-C: Output Enable</td>
<td>J2-G: HV Enable</td>
</tr>
<tr>
<td>J4: Output (+)</td>
<td>J2-D: Output Enable Return</td>
<td>J2-H: HV Enable Return</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current (A)</th>
<th>Regulation (line, load, temp)</th>
<th>Ripple &amp; Noise (Vpk-pk)</th>
<th>Output Power (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1063000G1</td>
<td>475 – 725</td>
<td>28</td>
<td>535</td>
<td>3.0%</td>
<td>1%</td>
<td>15,000</td>
</tr>
<tr>
<td>1063000G2</td>
<td>180 - 325</td>
<td>28</td>
<td>357</td>
<td>3.0%</td>
<td>1%</td>
<td>10,000</td>
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