20kW DC-DC Converter 610Vdc / 28Vdc

GE's 1064000G1 is a silicon carbide (SiC) based High Efficiency DC to DC Converter. The design utilizes GE's 1200V SiC MOSFETs packaged in our advanced liquid cooled power modules. GE has developed advanced Planar Magnetic technologies 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
- Digitally Controlled Operation
- Fault Reporting over CANBus
- High Efficiency
- High Power Density (34W/cu.in; 2kW/liter)
- 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 1064001)
- Weight: 16kg (36 lbs.)
- Dimensions: 305mm x 356mm x 89mm (12” x 14” x 3.5”)
- Connector: Input, Control: MIL-C-38999; Output: ½”
- Mounting: 10-32 bolt Front tie down; Guide Pin Receivers

Environmental:
- Operating Temperature: -45°C to +71°C ambient
- Coolant: 60/40 EGW; -45C to 75C; 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:
- J1-A: HVIL
- J1-B: +305Vdc
- J1-C: HVIL Return
- J1-D: -305Vdc
- E1: Output [+]
- E2: Output Return [-]
- J2-A: 28Vdc Control
- J2-B: 28Vdc Control Return
- J2-C: Output Enable
- J2-D: Output Enable Return
- J2-E: HV Bus Reset
- J2-F: HV Bus Reset Return
- J2-G: HV Enable
- J2-H: HV Enable Return
- J2-I: CANBus High
- J2-K: CANBus Low

<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>1064000G1</td>
<td>475 – 725</td>
<td>28</td>
<td>714</td>
<td>3.0%</td>
<td>1%</td>
<td>20,000</td>
</tr>
<tr>
<td>1064000G2</td>
<td>180 - 325</td>
<td>28</td>
<td>535</td>
<td>3.0%</td>
<td>1%</td>
<td>15,000</td>
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</tbody>
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