

# 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  
 Shock: MIL-STD-810E, Method 516.4, Procedure I 25G, 25 msec., half-sine 40G, 9 msec., sawtooth  
 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	E1: Output (+)	J2-A: 28Vdc Control	J2-E: HV Bus Reset	J2-J: CANBus High
J1-B: +305Vdc	E2: Output Return (-)	J2-B: 28Vdc Control Return	J2-F: HV Bus Reset Return	J2-K: CANBus Low
J1-C: HVIL Return		J2-C: Output Enable	J2-G: HV Enable	
J1-D: -305Vdc		J2-C: Output Enable Return	J2-H: HV Enable Return	

Part Number	Input Voltage	Output Voltage	Output Current (A)	Regulation (line, load, temp)	Ripple & Noise (Vpk-pk)	Output Power (W)
1064000G1	475 - 725	28	714	3.0%	1%	20,000
1064000G2	180 - 325	28	535	3.0%	1%	15,000



**GE Aviation**

2705 Gateway Drive  
Pompano Beach, Florida 33069 USA  
954-984-7000

1000 MacArthur Highway  
Bohemia, New York 11716 USA  
631-467-5500