

# 20kW DC-DC Converter 610Vdc / 28Vdc



GE's 1064100G1 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 1064001-1)

Weight: 19.5kg (43 lbs.)  
 Dimensions: 305mm x 406mm x 89mm (12" x 16" x 3.5")  
 Connector: Input, Control: MIL-C-38999; Output: 3/8"-16  
 Mounting: Wedge Clamp with Rear Guide Pin Receivers

## Environmental:

Operating Temperature: -45°C to +71°C ambient  
 Coolant: 60/40 EGW; -45C to 71°C; 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-J: 28Vdc Control	J2-L: CANBus A High	J2-w: CANBus B Low
J1-B: +305Vdc	E2: Output Return (-)	J2-K: 28Vdc Control Return	J2-f: CANBus A Low	J2-x: CANBus B Shield
J1-C: HVIL Return		J2-y: Control Enable	J2-g: CANBus A Shield	
J1-D: -305Vdc		J2-W: Chassis Ground	J2-e: CANBus B High	

Part Number	Input Voltage	Output Voltage	Output Current (A)	Regulation (line, load, temp)	Ripple & Noise (Vpk-pk)	Output Power (W)
1064100G1	475 - 725	28	714	3.0%	1%	20,000
1064100G2	180 - 325	28	535	3.0%	1%	15,000



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