

# 15kW Bidirectional Converter 610Vdc / 28Vdc



The 1066000G1 is a silicon carbide (SiC) based High Efficiency DC to DC Converter. The design utilizes GE's 1200V SiC MOSFETs and GaN Transistors in a dual active bridge configuration to provide isolated, bi-directional power flow capability. Advanced Planar Magnetic technologies have been developed by GE to compliment the SiC and GaN devices, yielding high power density and reduced weight. Advanced thermal management technologies are employed to enable reliable performance in this high-temperature liquid-cooled converter



## Features:

- ◆ Best-in-Class SiC MOSFETs
- ◆ GaN Enhancement Mode Power Transistors
- ◆ Load Sharing between multiple converters
- ◆ High Efficiency
- ◆ High Power Density (21W/cu.in)
- ◆ Reduced weight versus Silicon
- ◆ High Reliability
- ◆ MIL-PRF-GCS600A governing high voltage
- ◆ Overcurrent & Overvoltage Protection.
- ◆ EMI – MIL-STD-461F
- ◆ CANbus communication for firmware upgrades, configuration programming and status reporting
- ◆ High voltage Interlock
- ◆ Nuclear Event Detect
- ◆ 50% overload at 10% duty cycle
- ◆ Derating –NAVMAT-P-4855-1
- ◆ AEC-Q101 SiC device qualification
- ◆ MTBF > 50,000 Hours, GM at 71°C

## Physical: (See ICD 1066001, ¾ ATR per ARINC 404)

Weight: 16.2kg (35.6 lbs.)  
 Dimensions: 194mm x 194mm x 318mm  
 (7.6"H x 7.5"W x 12.5"L)  
 Connectors: 610V, Control on Rear Panel: ARINC 404;  
 28V / 28V Return on front panel (Smiths 37900-40)  
 Mounting: ARINC Front tie down; Guide Pins in rear

## Environmental:

Operating Temperature: -40°C to +71°C ambient  
 Coolant: 105°C maximum; 60/40 EGW; 12 lpm  
 Temperature Shock: MIL-STD-810G, Method 503.5  
 Shock: MIL-STD-810G, Method 516.6, Procedure I  
 Vibration: MIL-STD-810G, Method 514.6, Procedure I,  
 Category 20, Ground Vehicles  
 Humidity: MIL-STD-810G, Method 507.5, Procedure I

## Electrical I/O:

Part Number	High Voltage (VDC)	Low Voltage (VDC)	HV/LV Current (ARMS)	Regulation (line, load, temp)	Ripple & Noise	Up-convert Power(W)	Down-convert Power (W)
1066000G1	475 – 725	21-32	568 / 26.5	3%	1%	12,000	15,000



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