

15kW Bi-Directional Converter 610Vdc/28Vdc



GE Aerospace



Prototype image

The 1066000G2 is a silicon carbide (SiC) based High Efficiency DC to DC Converter. The design utilizes GaN Transistors and GE's 1200V SiC MOSFETs in a dual active bridge configuration to provide isolated, bi-directional power flow capability. Advanced thermal management technologies are employed to enable reliable performance in this high-temperature liquid-cooled converter.

Physical: (see 1066001 ICD), ARINC 600, 6 MCU

- Weight: 18kg (39.7 lbs.) maximum
- Dimensions: 194mm x 191mm x 318mm
(7.6"H x 7.5"W x 12.5"L)
- Connectors: 610V, Control on Rear Panel: ARINC 600;
28V / 28V Return on front panel
(MIL-PRF-18148/3 compliant)
- Mounting: ARINC Front tie down; Guide Pins in rear

Environmental:

- Operating Temperature: -40C to +71C ambient
- Coolant: 105C 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
- Immersion: MIL-STD-810G, Method 512.5, 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)
1066000G2	565-635	21-32	26.9 / 536	3%	1%	12,000	15,000

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.
- ◆ CANbus communication for firmware upgrades, configuration programming and status reporting
- ◆ High voltage Interlock
- ◆ Nuclear Event Detection
- ◆ EMI – MIL-STD-461F
- ◆ Derating –NAVSO P-3641A adjusted per GE guidelines
- ◆ AEC-Q101 SiC device qualification

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