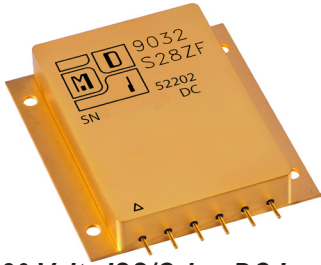


# Model 9032-S28

## Parallelable 100 Watt DC - DC Converter

### 100 Volts Satellite DC Input



### 120 Volts ISS/Orion DC Input

#### Features:

- GaN HEMT design: Tolerant to radiation environments >100kRad(Si), no SEE for LETs >82MeV\*cm<sup>2</sup>/mg.
- Magnetic coupled RF feedback design eliminates optocouplers: inherently resistant to proton, neutron displacement effects.
- Precision output voltage droop mode control: reliable current sharing in N+1 redundant applications.
- Wide input voltage range; accommodates 100V satellite and all 120V ISS and Orion input voltage transient conditions.
- Self-contained, hermetic hybrid construction: no external electronics needed to achieve stated performance or paralleling claims.
- Internal MIL-STD-461C CE03 EMI filter: meets conducted emissions standard. Works with MDI external filters in applications where additional attenuation is needed: consult factory.
- Protected for open control loop and over current fault conditions: output OV and short circuit proof.
- Inhibit "Not" function: easy open collector on-off control. Coordinates seamlessly with MDI inrush limiters and bus controllers: consult factory
- Soft Start: output voltage ramps without overshoot.
- Sync and built in test options.

#### Specifications

**Input:** 100 VDC satellite or 120 VDC ISS/Orion nominal

**Range:** 80 – 160 VDC Continuous full power operation

#### Isolation:

Inputs to Outputs: 10 Mohms minimum at 500 VDC

Inputs and Outputs to Case: 10 Mohms minimum at 100 VDC

#### Environment:

Temperature range, functional operating (Tcase): SE Grade -55°C to +125°C, derate Pout to zero at 135°C. EU, S Grades -55°C to +85°C, derate Pout to zero at 115°C.

Temperature range, storage non-operating (Tcase): -60°C to +150°C.

Shock: MIL-STD-810, Method 516.5 Procedure III (50Gs 11mS pulse, all axis)

Random Vibration: MIL-STD-883, Method 2026, Test Condition 2H (32.3G, all axis)

Acceleration: MIL-STD-883, Method 2001, Test Condition A1, Y1 direction, 500Gs

**Weight:** 160 grams typical

Model 9032 is a modular, parallelable, radiation tolerant hermetic hybrid designed for bulk power conversion of 100V satellite or 120V ISS and Orion input bus voltages to nominal 28 VDC regulated outputs. Each hybrid module provides 100 watts of output power and incorporates precision droop output voltage control to make paralleling multiple modules easy and straightforward without auxiliary interconnections or components. Any number of 9032 hybrids may be parallel connected to achieve very high load current; each module shares the total within ten percent provided the interconnecting load bus construction is evenly apportioned to minimize I<sup>2</sup>R losses. Output voltage is precision trimmed at the factory to within one tenth of one volt at half load to optimize current sharing; an adjust feature is provided to accommodate custom trims in application. GaN HEMT power conversion techniques make the model 9032 highly efficient and inherently radiation tolerant for gamma and single event effect environments.

### MODEL 9032-S28

#### Single Output

PARAMETER	CONDITION	MIN	TYP	MAX
Output voltage	Factory trim 50% load	+27.9	+28.0	+28.1
	Zero Load Droop	+28.9	+29.0	+29.1
	Full Load Droop	+26.9	+27.0	+27.1
Output Current	Vin Range 80 - 160 VDC, Full Load	—	—	3.6A
	Efficiency	Pout 100W	85%	87% 89%
Line Regulation	Vin Range 80 - 160 VDC	—	20mV	120mV
Load Regulation	No Load to Full Load VDC	+1	—	-1
	Droop (Vnom, about 50% Setpoint)			
Output Ripple (mVpp)	2MHz BW, Full Load	—	75	150

#### Pin Outs Model 9032-S28

Pin 1	Built In Test
Pin 2	Inhibit Not
Pin 3	Soft Start
Pin 4	Sync Input
Pin 5	Input +
Pin 6	Input Rtn
Pin 7	Output Adjust
Pin 8	N/C
Pin 9	N/C
Pin 10	Main Output +
Pin 11	N/C
Pin 12	Main Output Rtn

#### Also Available in These Popular Input Voltages

Model Number	Input Voltage Nominal	Input Voltage Range	Typical Application
5032-S28	28 VDC	16 – 50 VDC	Bulk regulation of 28V satellite bus
7032-S28	50 VDC	30 – 75 VDC	Step down and bulk regulation of 50V satellite bus
8032-S28	70 VDC	50 – 90 VDC	Step down and bulk regulation of 70V satellite bus

\* Other output voltages available. Consult factory for more information.

#### Case Dimensions

Units: inches | millimeters

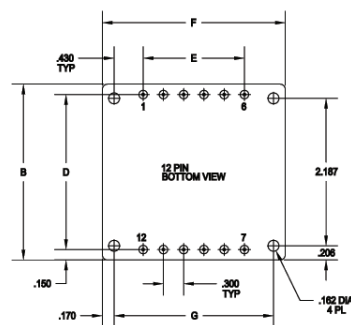
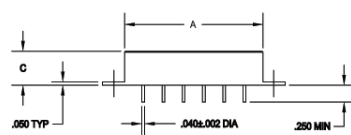
DATA: 25°C case temperature values unless otherwise noted.

TOLERANCES: ALL DIMENSIONS ±0.01, C = +0.01/-0.02; DRAWINGS IN INCHES.

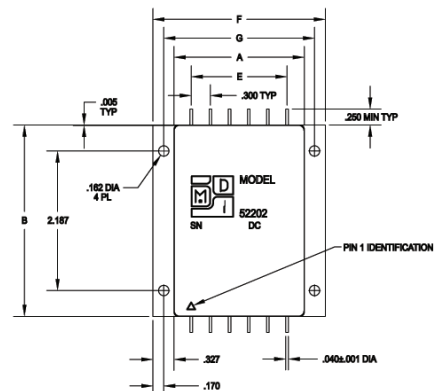
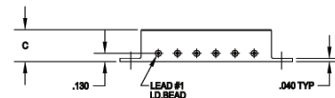
Case Style	A	B	C	D	E	F	G
7 LF	2.040   51.816	2.610   66.294	0.495   12.573	2.300   58.420	1.500   38.100	2.710   68.834	2.360   59.944
9 ZF	2.040   51.816	3.010   76.454	0.495   12.573	—   —	1.500   38.100	2.710   68.834	2.360   59.944

Model No.	Case Style	Pin Count	Mounting
9032	LF	7	Seam Weld PBC Mount with Flange
9032	ZF	9	Seam Weld Chassis Mount with Flange

#### CASE STYLE 7



#### CASE STYLE 9



**Modular Devices, Inc.**

Power Conversion for Space and Military/Aerospace