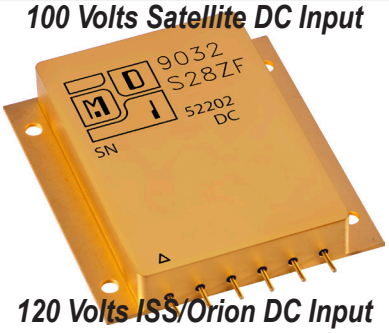
Model 9032-S28

Parallelable 100 Watt DC - DC Converter

100 Volts Satellite DC Input



120 Volts ISS/Orion DC Input

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. Up to five 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^2R 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.

Features:

- GaN HEMT design: Tolerant to radiation environments >100kRad(Si), no SEE for LETs >82MeV*cm^2/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.

MODEL 9032-S28

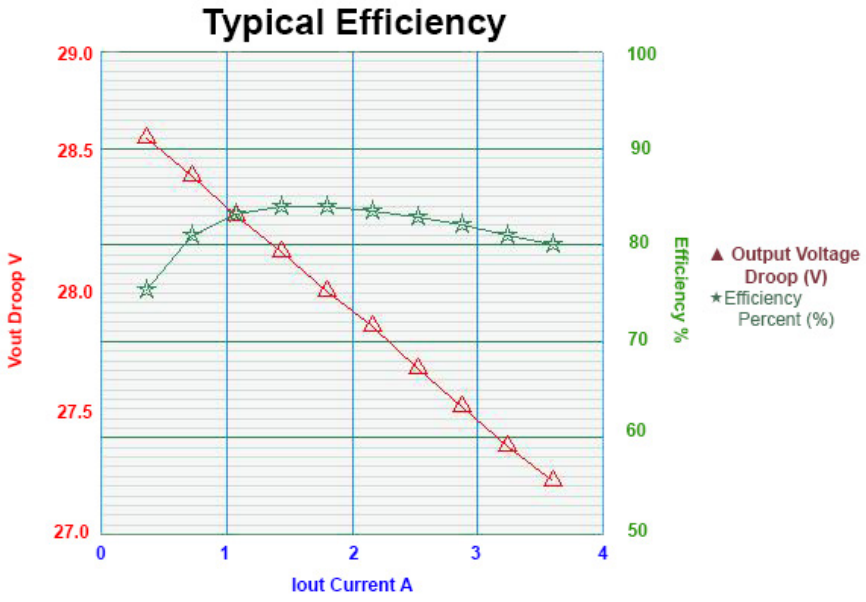
Single Output

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 Range*	Pout 20W – 100W	80%	85%	—
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

* See efficiency curve – Efficiency vs. Vout Droop and output current for a typical representation

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	Adjust
Pin 8	N/C
Pin 9	N/C
Pin 10	+ Output
Pin 11	N/C
Pin 12	Output Return



Efficiiency vs. Vout Droop and output current.

Specifications

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

Range: 80 – 160 VDC Continuous full power operation

Isolation:

Input to Case:	500VDC
Input to output:	500VDC
Output to case:	100VDC

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

Modular Devices, Inc.
Power Conversion for Space and Military/Aerospace

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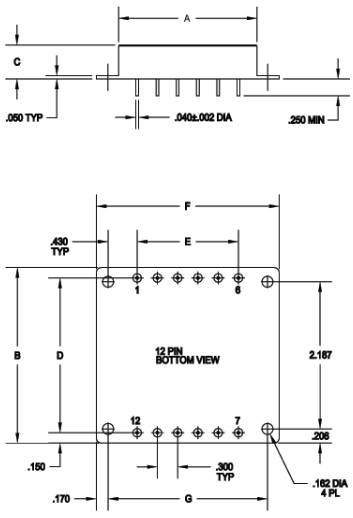
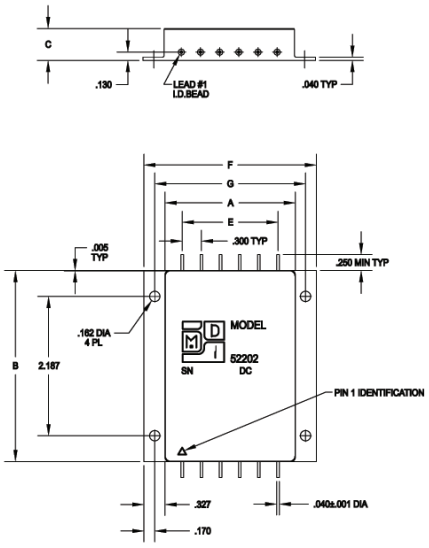
CASE STYLE 7



CASE STYLE 9



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	12	Seam Weld PBC Mount with Flange
9032 ZF	9	12	Seam Weld Chassis Mount with Flange

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