

SDC-MIL-HP-628

600W 270V input 28VDC Output Military High Density DC-DC Converter



Solitera Advanced Technology Systems offers a variety of high input voltage DC-DC converters from 50W-750W in military and industry standards quarter, half and full brick sizes.

They provide a 270Vdc/300Vdc nominal input (with an input range of 100 to 400Vdc) and 3000VAC reinforced isolation.

These converters are ideal for use in rugged, thermally challenged applications requiring baseplate cooled applications such as military systems, railway systems, distributed power architectures, telecommunications, servers, base station, battery operated equipment, and industrial applications, RF/power amplifiers, commercial avionics and industrial control.

Solitera second-generation high-density DC/DC converters have highly efficient power design and advanced thermal management techniques including insulated metal substrate technology, specialty dielectrics and formulated thermally conductive potting to produce small, ruggedized DC/DC converters with reduced temperature rise and increased reliability.

FEATURES

- 600W Isolated Output
- Wide input range 200V ~ 400V
- High density 80W/in³
- Fixed frequency operation
- Single Wire Parallel with current sharing
- Fixed frequency operation
- External trim adjust requirements
- Remote On/Off
- Ruggedized
- -55°C to +100°C operating temperature
- No aluminum electrolytic capacitors
- Fully Isolated 4500VDC
- Custom models available
- Consult **Solitera Advanced Technologies** for special requirements

All Specifications are Typical at Nominal Line, Full load, and 25 °C Unless Otherwise Noted

ABSOLUTE MAXIMUM RATINGS*

Parameter	Minimum	Typical	Maximum	Conditions
INPUT VOLTAGE	-0.2VDC		400VDC	Continuous
INPUT TRANSIENT VOLTAGE	-0.2VDC		450VDC	100 msec max.
SOLDERING TEMPERATURE			260°C	< 5 sec

* Exceeding absolute maximum ratings may cause permanent damage or reduce reliability

INPUT SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Conditions
INPUT VOLTAGE RANGE	200V	270V	400V	
TURN ON TIME		300ms	500ms	
SWITCHING FREQUENCY	280Khz	300KHz	330Khz	
MAXIMUM INPUT CURRENT		3ADC		Vin = 200V, Tc= 25°C

OUTPUT SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Conditions
OUTPUT VOLTAGE	27.72 VDC	28.01 VDC	28.28 VDC	
OUTPUT CURRENT			21.4A	
TRIM ADJUST	±10%			
RIPPLE AND NOISE		1.5% p-p	2.5% p-p	20MHz BW.
LINE REGULATION		±0.5%	±1%	
LOAD REGULATION		±0.5%	±1%	
TURN ON OVERSHOOT			5%	
SENSE COMPENSATION			10%	
SHORT CIRCUIT PROTECTION			170% rated	200V < Vin < 400V, Rshort = 15mOhm
OUTPUT VOLTAGE TRIM *	±10%			See Note 1
OVER VOLTAGE PROTECTION	31.2VDC	32.9VDC	35VDC	

GENERAL SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Conditions
EFFICIENCY		87%		
THERMAL SHUTDOWN RANGE	105 °C	110 °C		Case Temperature
TEMP COEFFICIENT			0.02%/°C	
SHUT DOWN CONTROL		Open Collector		
CURRENT SHARING (Parallel Operation)		5%		Single Wire Parallel Connection
OUTPUT GOOD SIGNAL		±10%		Active LOW
ISOLATION VOLTAGE				
(Input/Output)	4500VDC			
(Input/Case)	2500VDC			
(Output/Case)	500VDC			
ISOLATION RESISTANCE	10 ⁷ ohm			Input-to-Output Resistance

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ENVIRONMENTAL SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Conditions
OPERATING TEMPERATURE RANGE	-55°C		+100°C	With baseplate
STORAGE TEMPERATURE RANGE	-55°C		+125 °C	
HUMIDITY	MIL-STD-810C, Method 507.1, Proc. IV MIL-STD-810F, Method 507.4			
ALTITUDE	up to 70,000 ft			
SALT FOG	MIL-STD-810C, Method 509.1, Proc. I MIL-STD-810F, Method 509.4			
VIBRATION	MIL-E-5400T, Curve IVa, 5Hz to 2KHz			
SHOCK	MIL-S-901C-D, Grade A, Type A, Class 1 High Impact Shock			
MTBF	900.000hrs			MIL-HDBK-217F, @60°C baseplate

PHYSICAL CHARACTERISTICS

Parameter	Minimum	Typical	Maximum	Conditions
DIMENSIONS (LxWxH)		4.3×2.70×0.80 inches (109.2×68.6×20.2 mm)		Custom Dimensions
WEIGHT		220g		
CASE MATERIAL		Aluminum Baseplate with Plastic Case		

NOTES:

1. Consult Solitera for trim adjust details.

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