DC-DC Conduction cooled PST14X 320W

Features

Input ranges: 9-50Vdc, 18-36Vdc, 16-50Vdc
1 output 3V3 to 48Vdc, 320W max.
50*160*25mm
Automatic reverse polarity, Surge and transient protected
-40°C to 100°C baseplate
-MV Option: MILSTD1275 and Severe environment

Safety IEC/EN 60950-1, RoHS lead-free-solder compliant

RoHS

PST14X, very high power density 320W DC-DC converter in conduction cooled format, incorporates input EMI filtering, input transient protection, output protections, very robust mechanical package and connection required in most of the severe environment for industrial, railways, defense type of applications. The converter provides high power density thanks to the integration of Vicor Corp. DCM modules, high efficiency, input-to-output isolation, soft start, overtemperature protection, input over/undervoltage lockout. The outputs are short-circuit proof. The 100°C baseplate operation allows operation in high temperature environment. The output can be configured in many different output voltages from 3,3V to 48Vdc, others possibilities are even possible as semi-standard versions. With the -MV option, the converter is protected against surges and transients MIL-STD-704 and MIL-STD-1275, EMI filtered built to meet MIL-STD 461 and ruggedizzed according MIL-STD-810.

Electrical Input Data

Input		12			24			24 -M Option			Unit
Characteristics	Conditions	min	typ	max	min	typ	max	min	typ	max	
Operating input voltage		9	12	50	18	24	36	16	24	50	Vdc
Input current			15	20		15	20		15	20	A
No-load input power			9			9			9		W
Peak inrush current											A
Power interruption											µs
Start-up time											ms

Electrical Output Data

Output		V1			Unit
Characteristics	Conditions	min	typ	max	
Output voltage	At 25°C	-0,95Vnom	Vnom	+0,95Vnom	Vdc
Output current limitation	At 25°C	105% Inom	120% Inom	130 % Inom	A
Output noise	At 25°C		0,75 %	1,00 %	Vnom
Overvoltage protection	At 25°C. Recover by off/on line			115% Vnom	Vdc
Efficiency	Vin = 24Vdc		92		%
Thermal protection			95		°C

Signals

- **Powergood:** Open collector PGD, PGD RTN, closed if Vout is in its normal range (30Vdc/20mA max.)
- **Inhibit :** Output disabled if 5V TTL (30Vdc max.) between INH and INH RTN, enabled if 0V or open.
- **Led :** Two green leds input and output on the topside.
- **Sense:** Connecting +S and -S to the load point will remote sense (max compensation 10% Vout).
- **Adjustment:** A potentiometer at the output side allows output voltage variation in the -15% +10% Vnom range.
- **Paralleling:** several units can be put in parallel to provide more power.

Protections

- Input reverse polarity: an serial active circuit protect the unit if reverse polarity is applied (no damages)
- Input OVP/UVP: input unvoltage and over voltage protections
- Input surge/transient: an active circuit is used when -MV option is defined to clamp input voltage surge according MIL-STD1275. A voltage suppressor clamp the fast transient
- Output OVP: output overvoltage protections, do not exceed max rating.
- OTP: Overtemperature protection above 100°C baseplate, nethertheless care should be taken to maintain temperature in the normal range.

Configuration

PST14X Vin	Vout	Pout	Option
12	3V3	80	H
	5	80	H1
	12	160	MV
	15	160	V
	24	160	
	28	160	
	48	160	

Note: Input voltage limitation to 11-50Vdc if -MV option is selected

PST14X Vin	Vout	Pout	Option
24	3V3	120	H
	5	180	H1
	12	320	MV
	15	320	V
	24	320	
	28	320	
	36	320	
	48	320	

Note: 16-50Vdc input if -MV option is selected, 18-36Vdc if not.

In partnership with VICOR

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Isolation

- Dielectric withstand Input/chassis: 2120Vdc
- Dielectric withstand Input/Output : 2120Vdc
- Dielectric withstand Output/chassis: 700Vdc

Approvals & Environment

Built to meet standards - No laboratory certification
EMI : EN 55022B, MIL STD 461E CE102(-MV option)
Temperature :
Storage : -40 +100°C
Operating : -40 +100°C, conduction cooled
Option -MV : Input operation 9-50Vdc or 16-50Vdc

Input voltage spikes : MIL-STD704 - 100V 50ms (-MV)
MIL-STD1275D - 100V 50ms (-MV)
Shock & Acceleration : MIL-STD810 (-MV)
Operational shock : MIL-STD 810 (-MV)
Crash safety shock (Impulse) : MIL-STD810 (-MV)
Vibrations : MIL-STD-810(-MV)

Mechanical Data

Dimension: 50 x 160 x 25mm (50 x 160 x 40mm if -H or H1)
Weight : 0,260Kg

Connector Pin Allocation

Input/Output Connector: Wurth P/N7461093

PIN	signal name	description
J11	+Vin	+Vinput
J12	-Vin	-Vinput
J1	+VOUT	+Vout
J2	-VOUT	-Vout

J4 : MOLEX Picoblade 53048-0210

PIN	signal name	description
1	INH	Inhibtion
2	INH RTN	Inhibtion Return

J3 : MOLEX Picoblade 53048-0410

PIN	signal name	description
1	PGD	Powergood Collector
2	PGD RTN	Powergood Emittor
3	+S	+ Sense
4	-S	-Sense

Options

-H : Heatsink longitunal fins
-H1 : Heatsink transversal fins
-MV : Ruggedized MILSTD
-V : Conformal coating