

TECHNICAL DATASHEET

ELECTRICAL SPECIFICATIONS

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DC-Converter 331A3-24x28-SD

30 Watt, isolated, single output buck-boost converter with internal decoupling diode

All parameters defined on Ta=25°C, IoNom = 1.2 ADC and UiNom = 24VDC

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	38.00
Feedback protection against overvoltage on the output	VDC	32

THERMAL CHARACTERISTICS

parameter	min to max	typ
Ambient temperature range	-40°C / +85°C	
Storage temperature (device not in operation)	-10°C / +65°C	
Relative maximum humidity under storage		75% RH
Storage under worst conditions [in days]		25

COMMUNICATION INTERFACE

parameter	unit	fulfilled	conditions	min to max
Option shut down (left open for operation)		✓		
Shutdown voltage for transformer	VDC		IoNom	-0.2 to 2.8
Option Switch high (left open for normal operation)		✓		
Switch high control voltage for transformer	VDC		IoNom	-0.2 to 0.2
Output voltage in switch high mode	VDC		IoNom	28.0

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			225
Efficiency at light loads	%		0.25IoNom	91.00
Efficiency at medium loads	%		0.5IoNom	91.00
Efficiency at full loads	%		IoNom	91.00
MTTF	h		SN29500 @ 70°	1 500 000
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		
Insulation strength primary to secondary	VDC			500
Insulation strength primary to case	VDC			500

COMPLIANCE

parameter	fulfilled	notes
61000-6-4 (EMC – Emission standard for industrial environment)	✓	
55022<A	✓	

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	9	24	36
No load input current	mA	UiNom		25	
Max. input current	A	UiNom		4	
Input start up voltage	VDC	UiNom		8.9	
Undervoltage lockout	VDC	UiNom		8.6	
Input quiescent current in shutdown mode	mA	UiNom		0.70	
Input current overshoot during soft start ramp up	%	IoNom		15	
Generated AC-ripple on the supply (BW=20MHz)	mVp-p	UiNom/loNom		20	
Generated HF-noise on the supply (BW=20MHz)	mVp-p	UiNom/loNom		20	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		24.0	
No Load output voltage increase	%	UiNom		4	
Minimum required load to obtain the specified output voltage	%	UiNom		2	
Generated AC-ripple on the output (BW=20MHz)	mVp-p	UiNom/loNom		20	
Generated HF-noise on the output (BW=20MHz)	mVp-p	UiNom/loNom		70	
Output voltage accuracy	%	IoNom		+/-2.00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			30	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMa		0.10	
Static load regulation	%	IoMin...IoMax/UiNo		0.8	
Dynamic load change adjusting time	ms	LoadChange 10...90		0.20	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90		1.00	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		16	
Softstart ramp up time	ms	IoNom		12	

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MECHANICAL

parameter	unit	
Overall dimensions	mm	51x51x10
Weight	g	60

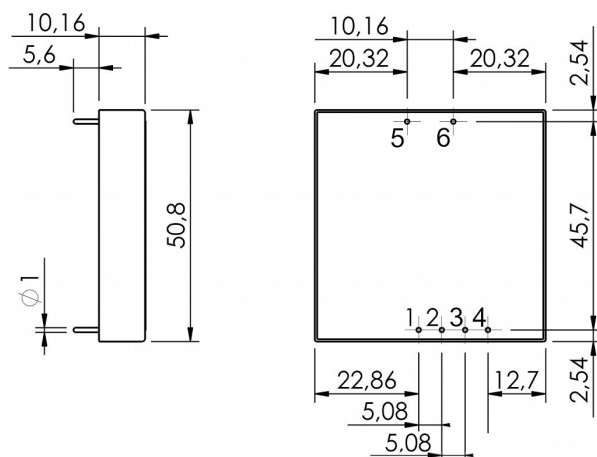
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
2	Vi-	Input voltage negative
3	SH	Switch high
4	SD	Shut down
5	Vo+	Output voltage positive
6	Vo-	Output voltage negative

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: THT

Case: 2"x2"



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