

Master 25X.xx

400 Watt, isolated, single output buck-boost converter

All parameters defined on Ta=25°C, IoNom = 8.0 ADC and UiNom = 48VDC

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	85.00

THERMAL CHARACTERISTICS

parameter	min to max	typ
Ambient temperature range	-40°C / +85°C	
Max. case temperature for thermal shut down [°C]		+90°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	min to max
Option shut down [left open for operation]		✓	

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			110
Efficiency at light loads	%		0.25IoNom	98.00
Efficiency at medium loads	%		0.5IoNom	98.00
Efficiency at full loads	%		IoNom	97.00
MTTF	h		SN29500 @ 70°	123 456
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		

COMPLIANCE

parameter	fulfilled	notes
61000-6-2 [EMC-Immunity standard for industrial environment]	✓	
61000-4-2 [immunity against ESD-electrostatic discharge]	✓	
61000-4-3 [immunity High frequency electromagnetic fields]	✓	
61000-4-4 [immunity against burst - electrical fast transients]	✓	
61000-4-5 [immunity against surge - high energy surges]	✓	
61000-4-6 [immunity against induced, conducted disturbances]	✓	
61000-6-4 [EMC - Emission standard for industrial environment]	✓	
55022<A	✓	
50155	✓	

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	18	48	75
No load input current	mA	UiNom		25	
Max. input current	A	UiNom		25	
Input start up voltage	VDC	UiNom		17.5	
Undervoltage lockout	VDC	UiNom		16.5	
Input quiescent current in shutdown mode	mA	UiNom		2	
Input current overshoot during soft start ramp up	%	IoNom		50	
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		30	
Typical input noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		20	
Reflected input ripple current	mA	UiNom/loNom		20	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		48.0	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
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		30	
Typical output noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		20	
Output voltage accuracy	%	IoNom		+/-2.00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			400	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.20	
Static load regulation	%	IoMin...IoMax/UiNom		0.3	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.30	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		0.80	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		50	
Softstart ramp up time	ms	IoNom		30	
Restart time after undervoltage lockout	ms	IoNom		50	

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MECHANICAL

parameter	unit	
Dimensions	mm	90x90x26
Weight	g	335

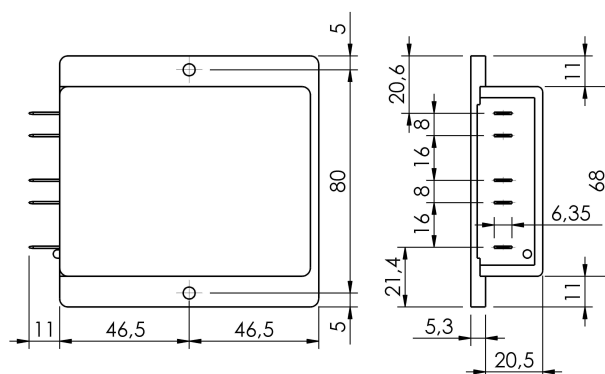
Pin No.	Function	Electrical Determination
1	SD	Shut down
2	Vi+	Input voltage positive
3	Vi-	Input voltage negative
4	Vo-	Output voltage negative
5	Vo+	Output voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: Flat pin plug

Case: FMC 90x90x26



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