

258E-50

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

All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 10,0\text{ ADC}$ and $U_{iNom} = 48\text{VDC}$

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	63.00

THERMAL CHARACTERISTICS

parameter	min to max	typ
Ambient temperature range	$-40^{\circ}\text{C} / +85^{\circ}\text{C}$	
Max. case temperature for thermal shut down [$^{\circ}\text{C}$]		$+90^{\circ}\text{C}$
Storage temperature [device not in operation]	$-10^{\circ}\text{C} / +65^{\circ}\text{C}$	
Relative maximum humidity under storage		75% RH
Storage under worst conditions [in days]		25

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			100
Efficiency at light loads	%		$0.25I_{oNom}$	98.00
Efficiency at medium loads	%		$0.5I_{oNom}$	97.00
Efficiency at full loads	%		I_{oNom}	97.00
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		
Insulation strength primary to case	VDC			2100

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]	✓	
61000-6-4 [EMC - Emission standard for industrial environment]	✓	
55022<A	✓	

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	20	48	63
Max. input current	A	UiNom		30	
Input start up voltage	VDC	UiNom		19.0	
Undervoltage lockout	VDC	UiNom		17.5	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		50.4	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
Output voltage accuracy	%	IoNom		+/-2,00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			500	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.10	
Static load regulation	%	IoMin...IoMax/UiNom		0.2	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.60	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		2.00	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		60	
Softstart ramp up time	ms	IoNom		20	

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MECHANICAL

parameter	unit	
Overall dimensions	mm	90x90x26
Weight	g	360

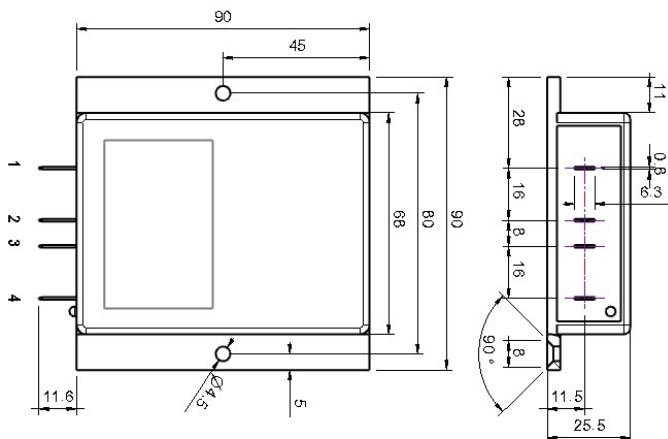
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
2	Vi-	Input voltage negative
3	Vo-	Output voltage negative
4	Vo+	Output voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: Flat pin plug 6.3mm

Case: FMC 90x90x26



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