TECHNICAL DATASHEET

256E-24-SD

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

All parameters defined on Ta=25°C, IoNom = 6.3 ADC and UiNom = 24VDC

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	75.00
Feedback protection against overvoltage on the output	VDC	45
Worst case output voltage in fault mode	VDC	32
Output overvoltage protection	VDC	28.0

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	conditions	min to max
Option shut down (left open for operation)		✓		
Shutdown voltage for transformer	VDC		IoNom	-0.2 to 2.8

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			120
Efficiency at light loads	%		0.25IoNom	96.00
Efficiency at medium loads	%		0.5IoNom	97.00
Efficiency at full loads	%		IoNom	96.00
MTTF	h		SN29500 @ 70°	1 400 000
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		
Insulation strength primary to case	VDC			1500

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)	✓	

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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	15	24	70
No load input current	mA	UiNom		25	
Max. input current	A	UiNom		12	
Input start up voltage	VDC	UiNom		14.5	
Undervoltage lockout	VDC	UiNom		13.0	
Input quiescent current in shutdown mode	mA	UiNom		0.30	
Generated AC-ripple on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		20	
Generated HF-noise on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		50	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		24.0	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
Generated AC-ripple on the output (BW=20MHz)	mVp-p	UiNom/IoNom		25	
Generated HF-noise on the output (BW=20MHz)	mVp-p	UiNom/IoNom		50	
Output voltage accuracy	%	IoNom		+/-2.00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			150	

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%		0.50	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		0.70	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		50	
Softstart ramp up time	ms	IoNom		15	

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MECHANICAL

parameter	unit	
Overall dimensions	mm	90x90x19
Weight	g	230

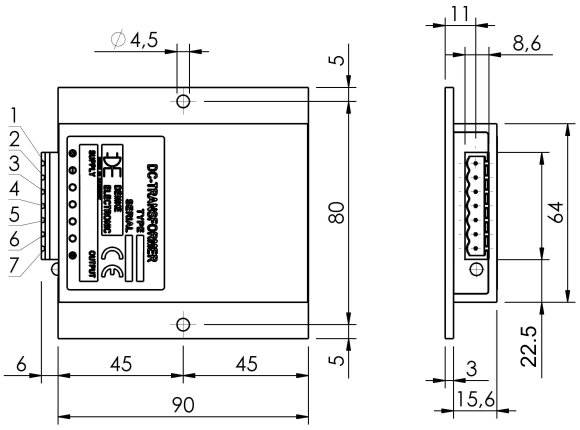
Pin No.	Function	Electrical Determination
1	SD	Shut down
2	Vi+	Input voltage positive
3	Vi+	Input voltage positive
4	Vi-	Input voltage negative
5	Vi-	Input voltage negative
6	Vo-	Output voltage negative
7	Vo+	Output voltage positive

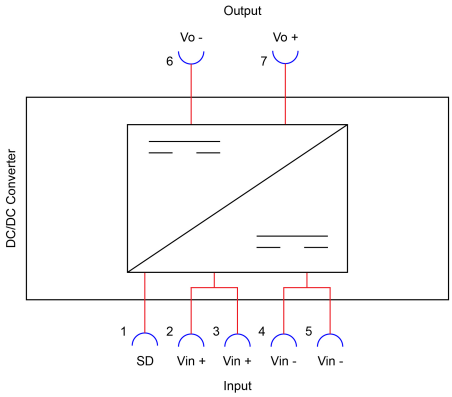
Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: CCA 2,5/7-G-5,08

Case: 90x90x19





Preliminary data sheet

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