TECHNICAL DATASHEET

145E-13.8-SD

160 Watt, non isolated, single output buck converter with internal decoupling diode

All parameters defined on Ta=25°C, IoNom = 12,0 ADC and UiNom = 80VDC

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	125.00
Feedback protection against overvoltage on the output	VDC	55
Worst case output voltage in fault mode	VDC	22
Output overvoltage protection	VDC	16.0

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)	-40°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			142
Efficiency at light loads	%		0.25IoNom	94.00
Efficiency at medium loads	%		0.5IoNom	92.00
Efficiency at full loads	%		IoNom	90.50
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)	✓	
61000-6-4 (EMC – Emission standard for industrial environment)	✓	

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55022<A	✓

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	16	80	100
No load input current	mA	UiNom		12	
Max. input current	A	UiNom		10	
Input start up voltage	VDC	UiNom		12.5	
Undervoltage lockout	VDC	UiNom		10.5	
Input quiescent current in shutdown mode	mA	UiNom		1.40	
Input current overshoot during soft start ramp up	%	IoNom		70	
Generated AC-ripple on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		125	
Generated HF-noise on the supply (BW=20MHz)	mVp-p	UiNom/IoNom		35	
Typical input noise slew rate (BW=500MHz)	mVp-p	UiNom/IoNom		40	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		13.8	
No Load output voltage increase	%	UiNom		2	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
Generated AC-ripple on the output (BW=20MHz)	mVp-p	UiNom/IoNom		20	
Generated HF-noise on the output (BW=20MHz)	mVp-p	UiNom/IoNom		100	
Typical output noise slew rate (BW=500MHz)	mVp-p	UiNom/IoNom		130	
Output voltage accuracy	%	IoNom		+/-2,00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			160	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.01	
Static load regulation	%	IoMin...IoMax/UiNom		1.8	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.70	
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		50	
Softstart ramp up time	ms	IoNom		15	
Restart time after undervoltage lockout	ms	IoNom		50	

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MECHANICAL

parameter	unit	
Overall dimensions	mm	77x52x19
Weight	g	165

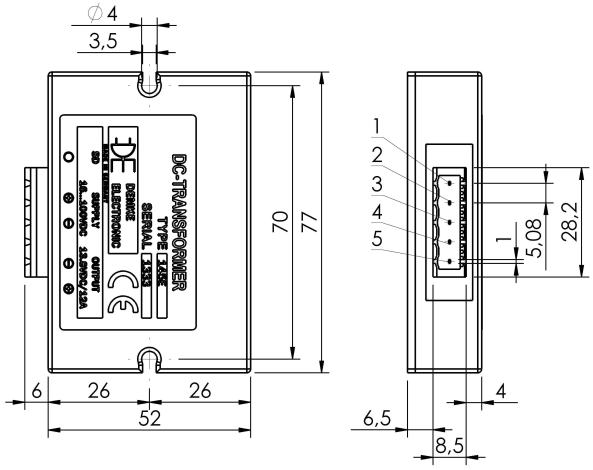
Pin No.	Function	Electrical Determination
1	SD	Shut down
2	Vi+	Input voltage positive
3	Vi-	Input voltage negative
4	Vo-	Output voltage negative
5	Vo+	Output voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: CCA 2,5/5-G-5,08 P26THR

Case: FMC 77x52x19



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