

344-24

50 Watt, isolated, single output buck-boost converter
All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 2.0\text{ ADC}$ and $U_{iNom} = 80\text{VDC}$

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	170.00
Feedback protection against overvoltage on the output	VDC	35
Worst case output voltage in fault mode	VDC	29

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]	$-40^{\circ}\text{C} / +65^{\circ}\text{C}$	
Relative maximum humidity under storage		75% RH
Storage under worst conditions [in days]		25

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			120
Efficiency at light loads	%		$0.25I_{oNom}$	89.00
Efficiency at medium loads	%		$0.5I_{oNom}$	90.00
Efficiency at full loads	%		I_{oNom}	91.00
MTTF	h		SN29500 @ 70°	1 600 050
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
CC/CV battery load characteristic		✓		
Coupling capacitance input to output	nF			transformer winding only
Insulation strength primary to secondary	VDC			1000
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]	✓	
61000-4-6 [immunity against induced, conducted disturbances]	✓	
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	22	80	160
No load input current	mA	UiNom		15	
Max. input current	A	UiNom		3	
Input start up voltage	VDC	UiNom		20.0	
Undervoltage lockout	VDC	UiNom		17.5	
Input current overshoot during soft start ramp up	%	IoNom		65	
Generated AC-ripple on the supply [BW=20MHz]	mVp-p	UiNom/IoNom		100	
Generated HF-noise on the supply [BW=20MHz]	mVp-p	UiNom/IoNom		30	
Typical input noise slew rate [BW=500MHz]	mVp-p	UiNom/IoNom		90	

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		0	
Generated AC-ripple on the output [BW=20MHz]	mVp-p	UiNom/IoNom		10	
Generated HF-noise on the output [BW=20MHz]	mVp-p	UiNom/IoNom		20	
Typical output noise slew rate [BW=500MHz]	mVp-p	UiNom/IoNom		60	
Output voltage accuracy	%	IoNom		+/-2.00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			50	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.01	
Static load regulation	%	IoMin...IoMax/UiNom		0.8	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.70	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		0.12	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		50	
Softstart ramp up time	ms	IoNom		10	

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MECHANICAL parameter

parameter	unit	
Overall dimensions	mm	90x90x19
Weight	g	230

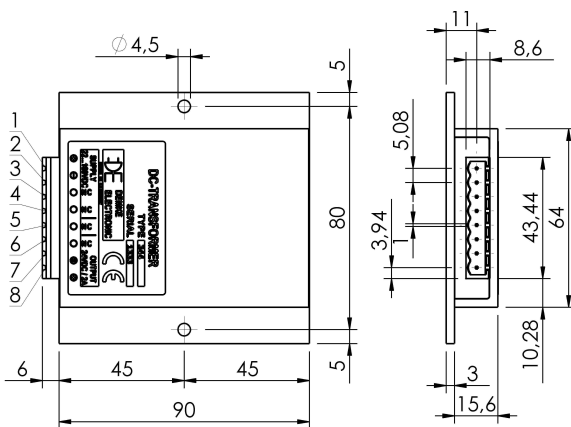
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
2	Vi-	Input voltage negative
3	NC	Not connected
4	NC	Not connected
5	NC	Not connected
6	NC	Not connected
7	Vo-	Output voltage negative
8	Vo+	Output voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: CCA 2,5/8-G-5,08 P26THR

Case: 90x90x19



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