

## 344DH-24

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

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]	$-10^{\circ}\text{C} / +65^{\circ}\text{C}$	
Relative maximum humidity under storage		75% RH
Storage under worst conditions [in days]		25

### SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			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 @ $70^{\circ}$	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			2100
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	✓	
50155	✓	ready for

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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 quiescent current in shutdown mode	mA	UiNom		1.20	
Input current overshoot during soft start ramp up	%	IoNom		65	
Generated AC-ripple on the supply [BW=20MHz]	mVp-p	UiNom/loNom		100	
Generated HF-noise on the supply [BW=20MHz]	mVp-p	UiNom/loNom		30	
Typical input noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		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/loNom		10	
Generated HF-noise on the output [BW=20MHz]	mVp-p	UiNom/loNom		20	
Typical output noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		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

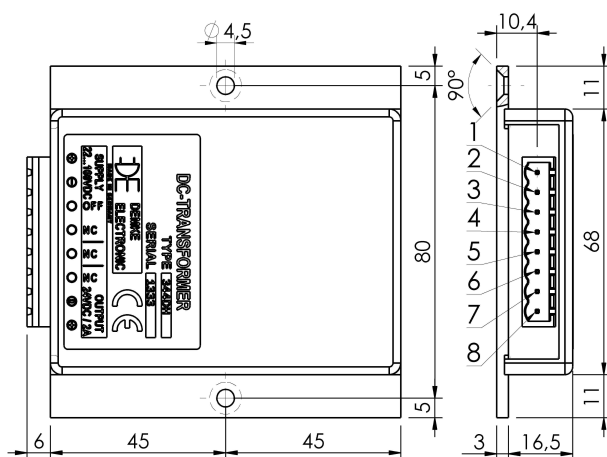
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
2	Vi-	Input voltage negative
3	NC	Not connected
4	NC	Not connected
5	NC	Not connected
6	NC	Not connected
7	Vo-	Output voltage negative
8	Vo+	Output voltage positive

### Mechanical dimensions and Pin configuration

All dimensions in mm

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

Case: FMC 90x90x21



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