

354W1-24-SD

90 Watt, isolated, single output buck-boost converter

All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 3.8 \text{ ADC}$ 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	36

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

COMMUNICATION INTERFACE

parameter	unit	fulfilled	min to max
Option shut down [left open for operation]		✓	

SPECIALS

parameter	unit	fulfilled	conditions	typ
Switching frequency	kHz			120
Efficiency at medium loads	%		$0.5I_{oNom}$	91.00
Efficiency at full loads	%		I_{oNom}	90.00
For active loads or parallel connection		✓		
Drives high capacitive loads		✓		
Coupling capacitance input to output	nF			transformer winding only
Insulation strength primary to secondary	VDC			500

COMPLIANCE

parameter	fulfilled	notes
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	✓	

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INPUT

parameter	unit	conditions	min	typ	max
Input voltage range	VDC	IoNom	16	80	160
No load input current	mA	UiNom		27	
Max. input current	A	UiNom		6	
Input start up voltage	VDC	UiNom		15.5	
Undervoltage lockout	VDC	UiNom		13.5	
Input quiescent current in shutdown mode	mA	UiNom		3.00	
Input current overshoot during soft start ramp up	%	IoNom		100	
Generated AC-ripple on the supply [BW=20MHz]	mVp-p	UiNom/loNom		600	
Generated HF-noise on the supply [BW=20MHz]	mVp-p	UiNom/loNom		100	
Typical input noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		580	

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		80	
Generated HF-noise on the output [BW=20MHz]	mVp-p	UiNom/loNom		600	
Typical output noise slew rate [BW=500MHz]	mVp-p	UiNom/loNom		265	
Output voltage accuracy	%	IoNom		+/-2.00%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			90	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.02	
Static load regulation	%	IoMin...IoMax/UiNom		1.4	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.30	
Maximum admissible capacitive load	uF	IoNom		infinite	
Initial switch on time	ms	IoNom		35	
Softstart ramp up time	ms	IoNom		15	

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MECHANICAL parameter

parameter	unit	
Overall dimensions	mm	77x52x19
Weight	g	166

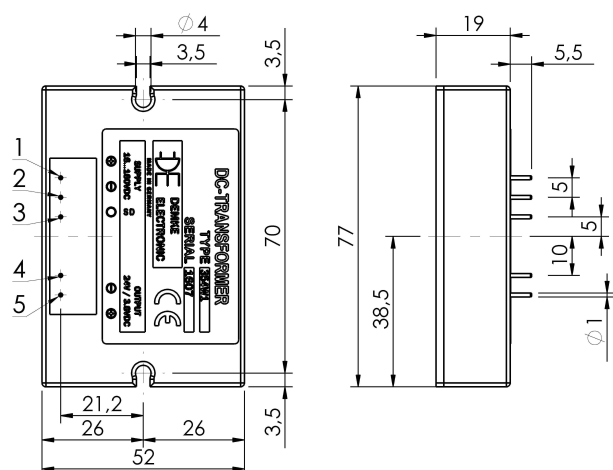
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
2	Vi-	Input voltage negative
3	SD	Shut down
4	Vo-	Output voltage negative
5	Vo+	Output voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: THT

Case: FMC 77x52x19



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