

105-5.0

6 Watt, non isolated, single output buck converter

All parameters defined on $T_a=25^{\circ}\text{C}$, $I_{oNom} = 1,2 \text{ ADC}$ and $U_{iNom} = 24\text{VDC}$

ABSOLUTE MAXIMUM RATINGS

parameter	unit	typ
Input peak voltage	VDC	38.00

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 [$^{\circ}\text{C}$]		+110 $^{\circ}\text{C}$
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	conditions	typ
Switching frequency	kHz		200
Efficiency at medium loads	%	0.5 I_{oNom}	91.00
Efficiency at full loads	%	I_{oNom}	91.00
MTTF	h	SN29500 @ 70 $^{\circ}$	1 800 000

COMPLIANCE

parameter	fulfilled	notes
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	7	24	36
No load input current	mA	UiNom		3	
Max. input current	A	UiNom		1	
Input start up voltage	VDC	UiNom		5.6	
Undervoltage lockout	VDC	UiNom		3.8	
Input current overshoot during soft start ramp up	%	IoNom		110	
Generated AC-ripple on the supply [BW=20MHz]	mVp-p	UiNom/IoNom		50	
Generated HF-noise on the supply [BW=20MHz]	mVp-p	UiNom/IoNom		60	
Typical input noise slew rate [BW=500MHz]	mVp-p	UiNom/IoNom		25	

OUTPUT

parameter	unit	conditions	min	typ	max
Output voltage	VDC	IoNom		5.0	
Minimum required load to obtain the specified output voltage	%	UiNom		0	
Generated AC-ripple on the output [BW=20MHz]	mVp-p	UiNom/IoNom		60	
Generated HF-noise on the output [BW=20MHz]	mVp-p	UiNom/IoNom		40	
Typical output noise slew rate [BW=500MHz]	mVp-p	UiNom/IoNom		30	
Output voltage accuracy	%	IoNom		+/-1,50%	
Output voltage overshoot at initial switch-on	%	IoNom		overdamped	
Rated output power	W			6	

CONTROL

parameter	unit	conditions	min	typ	max
Static line regulation	%	IoNom/UiMin...UiMax		0.05	
Static load regulation	%	IoMin...IoMax/UiNom		0.1	
Dynamic load change adjusting time	ms	LoadChange 10...90%		0.50	
Dynamic load change deviation to nominal output voltage	V	LoadChange 10...90%		0.10	
Maximum admissible capacitive load	uF	IoNom		4700	
Initial switch on time	ms	IoNom		13	
Softstart ramp up time	ms	IoNom		13	

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MECHANICAL parameter

parameter	unit	
Overall dimensions	mm	32x20x10
Weight	g	14

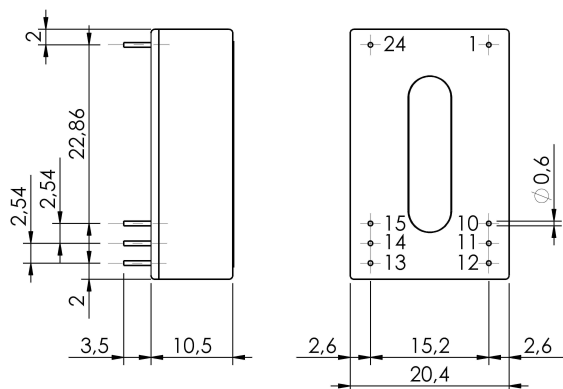
Pin No.	Function	Electrical Determination
1	Vi+	Input voltage positive
10	Vi-/Vo-	Input and output voltage neg
11	Vo+	Output voltage positive
12	Vi-/Vo-	Input and output voltage neg
13	Vi-/Vo-	Input and output voltage neg
14	Vo+	Output voltage positive
15	Vi-/Vo-	Input and output voltage neg
24	Vi+	Input voltage positive

Mechanical dimensions and Pin configuration

All dimensions in mm

Connector type: THT

Case: DIL24



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