DC/DC Converter 100 Watt

100 BSB 110 T24 E10

V_{IN} = 72V, 110 V_{DC} V_{O1} = 24V, I_{O1} = 2.0 A V_{O2} = +15V, I_{O2} = 1.67A V_{O3} = -15V, I_{O3} = 1.67A

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT						
V_{IN}	Input voltage range	Continuously	50.4		137,5	V_{DC}
	Input voltage range dynamic	43.2V ≤ V_{IN} ≤ 50.4V t ≤ 0,1 s 137.5V ≤ V_{IN} ≤ 154V t ≤ 1 s	43.2 137.5		50.4 154	V_{DC} V_{DC}
$V_{IN\ min}$	Converter Shut down		60		65	V_{DC}
$V_{IN\ max}$	Converter Shut down		155		165	V_{DC}
I_{IN}	Input current no load at output Nominal load at output Nominal load at output	43.2V ≤ V_{IN} ≤ 154V, ∑ I_{Out} = 0 A V_{IN} = 110 V_{DC}, ∑ P_{Out} = 100 W V_{IN} = 72 V_{DC}, ∑ P_{Out} = 100 W V_{IN} = 66 V_{DC}, ∑ P_{Out} = 100 W	25	 1.1 2.4	75 3.0	mA A A A
	Input current integral	V_{IN} = 154 V_{DC}			12	A^2s
	Input fuse			10 AF		
C_E	Input capacitance			20		µF
	Max. allowed input line inductivity				50	µH
	Reverse protection	fuse + transil diode		50 BZW 50 - 150		
OUTPUT: power Unit		43.2 V ≤ V_{IN} ≤ 154 V				
$P_{Out\ Nom}$	Output power continuously	∑ P_{Out}		100		W
$V_{Out\ 1}$	Factory adjust output voltage		23.9	24.0	24.2	V_{DC}
Δ V_{Out1}	Regulation accuracy V_{O1} static	0 W ≤ P_{O1} ≤ 48 W		≤ 2.5 % V_{O1Nom}		
$V_{Out\ 2}$	Factory adjust output voltage		+ 14.9	+ 15.0	+ 15.1	V_{DC}
Δ V_{Out}	Regulation accuracy V_{O2} static	0 W ≤ P_{O2} ≤ 25 W		≤ 2.5 % V_{O2Nom}		
$V_{out\ 3}$	Factory adjust output voltage		- 14.9	- 15.0	- 15.1	V_{DC}
Δ V_{out}	Regulation accuracy V_{O3} static	0 W ≤ P_{O3} ≤ 25 W		≤ 2.5 % V_{O3Nom}		
$V_{outi\ rms}$	Ripple & noise	U_{A1-A3}: Nominal load BW 300 kHz			200	mV
$V_{Outi\ pp}$	Spikes	U_{A1-A3}: Nominal load BW 20 MHz			250	mV_{pp}
t_{on}	Start up time V_{O1-O3}	0 W ≤ P_{Out} ≤ 100 W	20	50	250	ms
t_H	Hold up time nominal load, recharge time t ≤ 5sec @ 20% load V_{O1}		10			ms
I_{O1}	Output current	V_{Out1} = + 24 V		2.0	2.5	A
I_{O2}	Output current	V_{Out2} = + 15 V		1.67	2.0	A
I_{O3}	Output current	V_{Out3} = - 15 V		1.67	2.0	A
	Output current limitation treshold $I_{O1\ /\ O2\ /\ O3}$	43.2 V_{DC} ≤ V_{IN} ≤ 154 V_{DC}		105 % x $I_{A1\ /\ A2\ /\ A3\ Nenn}$		
I_{Osc}	Output current short circuit condition	Short circuit between + V_O and - V_O		150 % x $I_{A1\ /\ A2\ /\ A3\ Nenn}$		
$V_{Out,max}$	Output overvoltage limitation V_{O1}	0 W ≤ I_{O1} ≤ 2.0 A		32.0		V_{DC}
Signaling						
V_{IN} V_{Out}	Signaling input voltage Signaling output voltage	V_{IN} V_{O1}, $V_{O2,}$ V_{O3},		none LED yellow LED yellow		
GENERELL DATAS						
f	Switching frequency	Fly back back converter		130		kHz
η	Efficiency	P_O ≥ 0,7 x $P_{O\ Nom}$		85		%
	MTBF (SN 29500)	V_{IN} = 110 V_{DC}, P_O = 50 W, T_A = + 40°C		425 000		h
	No load and short ciruit proofed			continuously		

* values on request

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SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
SAFETY / DIMENSIONS						
	Clearance & creepage for PD2 and OV 2 PCB FR4, V0, T_G = + 140°C	Input – Output Input – Chassis Output - Output and Output – Chassis	4.0 3.0 1.0			mm mm mm
	Isolation Tests: Rampe function 2 s – 3 s – 2 s Type Test: 1 Minute	Input – Output Inputz - Chassis Output - Output			2'100 1'500 700	V_{DC} V_{DC} V_{DC}
	Connecting	Input: + V_{IN}, - V_{IN}	Male connector 15 poles			
		Output: ± V_{O1}, ± V_{O2}, ± V_{O3},	Male connector 32 poles			
		Protection Earth: PE				
	Protection class, - degree		I, IP 20			
	Dimensions incl. Mounting plate	B x H x T	On request			mm
	Mounting	19“ rack mounting 10TE, 6HE	incl. front plate			
	Weight			850		g
AMBIENT CONDITIONS						
T_A	Operating temperature range	EN 50155 Klasse T3	- 40		+ 70	°C
$T_{storage}$	Storage temperature range		- 40		+ 85	°C
	Cooling		Free convection			
	Humidity		75% averaged per year, 95% 30 days			
	Vibration / Shock	IEC 61373, IEC 68-2-27, BN 411002 Kat. I 3 Shocks each Axis	50 m / s² , 30 ms			
EMC						
	Emission	Line and radiated	EN 61000 – 6 – 4 A			
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV performance criteria - A -			
		Hochfrequentes Feld EN 61000 - 4 - 3	20 V / m 80 MHz ... 2,5 GHz performance criteria - A -			*)
		Burst EN 61000 - 4 - 4	Level 4 asym., sym. performance criteria - A -			
		Surge EN 61000 - 4 – 5	2 kV asym. / 1 kV sym. performance criteria - A -			
		HF - Einströmung EN 61000 - 4 - 6	10 V_{eff} , R_i = 150 Ω performance criteria - A -			

STANDARDS

	Applied Standards:	SN 29500	EN 50155: 2007	EN 50124 - 1: 2006	EN 50121-3-2: 2006	EN 50529
		IEC/EN 60255-5	IEC/EN 60255-6	EN 50125 - 1	EN 60068 - 2 - 6, 2…32	IEC/EN60707
		IEC 60255-11	IEC 61373: 1999	EN 60721 - 3 - 5	IEC 60068-2-1 / 2 / 14	IEC 61373

Technical Data referenced at: - 40° C ≤ T_A ≤ + 70° C, 50.4 V_{DC} ≤ V_{IN} ≤ 137.5 V_{DC}, if not otherwise specified.

*) HF Field: 80MHz – 1GHz 20V/m, 1400 MHz – 2100MHz 10V/m 2100MHz – 2500MHz 5V/m

Pin Assignment
Input X1 Front site Top 15 poles

Pin	Fkt.	Pin	Fkt.
z32	Chassis	d30	Chassis
z28	n.c.	d26	n.c.
z24	n.c.	d22	+V_{In}
z20	+V_{In}	d18	+V_{In}
z16	+V_{In}	d14	n.b.
z12	-V_{In}	d10	-V_{In}
z8	-V_{In}	d6	-V_{In}
z4	n.c.		

Pin Assignment
Output X2 Back Panel Top
32 poles

Pin	a	b
2	+ 24V	+ 24V
4	+ 24V	+ 24V
6	GND	GND
8	GND	GND
10	GND	GND
12	GND	GND
14	GND	GND
16	GND	GND
18	GND	GND
20	+ 24V	- Sense
22	+ 24V	+ 24V
24	+ 24V	+ 24V
26	$V_{O, min}$	+ Sense
28	n.b.	n.b.
30	Chassis	Chassis
32	Chassis	Chassis

Pin assignment
Output X3 Back Panel Below
32 poles

Pin	a	b
2	+ 15V	+ 15V
4	- 15V	- 15V
6	GND	GND
8	GND	GND
10	GND	GND
12	GND	GND
14	GND	GND
16	GND	GND
18	GND	GND
20	- 15V	- 15V
22	+ 15V	+ 15V
24	+ 15V	+ 15V
26	n.b.	n.b.
28	n.b.	n.b.
30	Chassis	Chassis
32	Chassis	Chassis