

50 BSB 110 T24 E01

$V_{IN} = 110 V_{DC}$ $V_{Out1} = 24V$, $I_{Out1} = 1.0 A$ $V_{Out2} = +15V$, $I_{Out2} = 0.7A$ $V_{Out3} = -15V$, $I_{Out3} = 0.7A$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
INPUT						
V_{IN}	Input voltage range	Continuously	77		137,5	V_{DC}
	Input voltage range dynamic	$66.0V \leq V_{IN} \leq 77 V$ $t \leq 0,1 s$ $137.5V \leq V_{IN} \leq 154V$ $t \leq 1 s$	66 137.5		77 154	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	25	0.55	75	mA A A
	Input current integral	$V_{IN} = 154 V_{DC}$			8	A^2s
	Input fuse			2 AF		
C_E	Input capacitance			15		μF
	Max. allowed input line inductivity				50	μH
	Reverse protection	fuse + transil diode			50 BZW 50 - 150	

OUTPUT: power Unit

$66 V \leq V_{IN} \leq 154 V$

$P_{Out Nom}$	Output power continuously	$\sum P_{Out}$		50		W
$V_{Out 1}$	Factory adjust output voltage		23.9	24.0	24.2	V_{DC}
ΔV_{Out1}	Regulation accuracy V_{O1} static	$0 W \leq P_{O1} \leq 30 W$	$\leq 2,5 \% V_{O1Nom}$			
$V_{Out 2}$	Factory adjust output voltage		+ 14,9	+ 15.0	+ 15.1	V_{DC}
ΔV_{Out}	Regulation accuracy V_{O2} static	$0 W \leq P_{O2} \leq 10.5 W$	$\leq 2,5 \% V_{O2Nom}$			
$V_{Out 3}$	Factory adjust output voltage		- 14,9	- 15.0	- 15.1	V_{DC}
ΔV_{out}	Regulation accuracy V_{O3} static	$0 W \leq P_{O3} \leq 10.5 W$	$\leq 2,5 \% V_{O3Nom}$			
$V_{outi rms}$	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
t_{on}	Start up time $V_{O1 - O3}$	$0 W \leq P_{Out} \leq 45 W$	20	50	250	ms
t_H	Hold up time nominal load, recharge time $t \leq 5sec$ @ 20% load V_{O1}		10			ms
I_{O1}	Output current	$V_{Out1} = + 24 V$		1.0		A
I_{O2}	Output current	$V_{Out2} = + 15 V$		0.7		A
I_{O3}	Output current	$V_{Out3} = - 15 V$		0.7		A
	Output current limitation threshold $I_{O1 / O2 / O3}$	$66 V_{DC} \leq V_{IN} \leq 154 V_{DC}$	$105 \% \times I_{A1 / A2 / A3 Nenn}$			
I_{Osc}	Output current short circuit condition	Short circuit between + V_O and - V_O	$150 \% \times I_{A1 / A2 / A3 Nenn}$			
$V_{Out,max}$	Output overvoltage limitation V_{O1}	$0 W \leq I_{O1} \leq 1.0 A$		32.0		V_{DC}

Signaling

V_{IN}	Signaling input voltage	V_{IN}	none			
V_{Out}	Signaling output voltage	V_{O1} , V_{O2} , V_{O3} ,	LED yellow LED yellow			

GENERELL DATAS

f	Switching frequency	Fly back back converter	100			kHz
η	Efficiency	$P_O \geq 0,7 \times P_{O Nom}$	85			%
	MTBF (SN 29500)	$V_{IN} = 110 V_{DC}$, $P_O = 50 W$, $T_A = + 40^\circ C$	400 000			h
	No load and short circuit proofed		continuously			

* values on request

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
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SAFETY / DIMENSIONS

	Clearance & creepage for PD2 and OV 2 PCB FR4, V0, TG = + 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 Primär – Gehäuse Sekundär – Sekundär			2'100 1'500 700	V _{DC} V _{DC} V _{DC}
	Connecting	Eingang: + U _E , - U _E Ausgang: + U _{A1} , + U _{A1} , + U _{A2} , - U _{A2} + U _{A3} , - U _{A3} Schutzerde: SE			connector H15 Pin z32 leading	
	Protection class, - degree	Platine			I, IP 20	
	Dimensions incl. Mounting plate	B x H x T			45.3 x 128.4 x 160	mm
	Mounting	19" rack mounting 9TE, 3HE			incl. front plate	
	Weight			650		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 / s ² , 30 ms	

EMC

	Emission	Line and radiated	EN 61000 – 6 – 4 A	
	Immunity	ESD EN 61000 - 4 - 2 Hochfrequentes Feld EN 61000 - 4 - 3 Burst EN 61000 - 4 - 4 Surge EN 61000 - 4 – 5 HF - Einströmung EN 61000 - 4 - 6	6 kV / 8 kV performance criteria - A - 20 V / m 80 MHz ... 2,5 GHz performance criteria - A - Level 4 asym., sym. performance criteria - A - 2 kV asym. / 1 kV sym. performance criteria - A - 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, 77 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

Pin	Designation	Recommended
Output		
z 4	+ V _{Out1}	1,5 mm ²
d10	- V _{Out1}	1,5 mm ²
d18	+ V _{Out2}	1,5 mm ²
z20	- V _{O2} / + V _{O3}	1,5 mm ²
d22	- V _{A3}	1,5 mm ²
Input		
d26	- V _{IN}	1,5 mm ²
d30	+ V _{IN}	1,5 mm ²
z32	PE	1,5 mm ²