

100 SBB 024 D15 □□

$V_{I\text{ nom}} = 24\text{ V}$ $V_{O\text{ nom}} = \pm 15\text{ V}$ $I_{O1, O2\text{ nom}} = \pm 3.4\text{ A}$
 $V_{I\text{ nom}} = 36\text{ V}$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_I	Input voltage range		13.5		50.4	V
	Input voltage range dynamic	$V_I = 12.5\text{ V} \dots 13.5\text{ V}$ for $t \leq 0.1\text{ s}$ $V_I = 50.4\text{ V} \dots 52.5\text{ V}$ for $t \leq 1\text{ s}$	12.5		52.5	V
$V_{I\text{ min}}$	Converter shutdown				12.4	V
$V_{I\text{ max}}$	Converter shutdown		55		58	V
V_{Enable}	Enable Function, PIN d22 Reference potential: $-V_I$	Converter on: Enable = low $V_{\text{Enable}} \leq 0.8\text{ V}$, $I \leq 1.5\text{ mA}$ Converter off: Enable = high $V_{\text{Enable}} \geq 3.0\text{ V}$, $I \leq -50\text{ }\mu\text{A}^*$	0		0.8	V
	Stand by current	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$, Enable = high			18	mA
I_O	Input current	No load $V_I = 52.5\text{ V}$, $I_{O1} = 0\text{ A}$, $I_{O2} = 0\text{ A}$ Nominal load $V_I = 24\text{ V}$, $I_{O1} = 3.4\text{ A}$, $I_{O2} = -3.4\text{ A}$ Nominal load $V_I = 36\text{ V}$, $I_{O1} = 3.4\text{ A}$, $I_{O2} = -3.4\text{ A}$ Nominal load $V_I = 12.5\text{ V}$, $I_{O1} = 3.4\text{ A}$, $I_{O2} = -3.4\text{ A}$		5.3 3.3	130	mA A A A
	Input current integral	$V_I = 52.5\text{ V}$			15	A ² s
$I_{O\text{ max}}$	Max. input switch on current $V_I \geq V_{I\text{ min}}$, $V_{\text{Enable}} \rightarrow \leq 0.8\text{ V}$	$I_{O1} = 3.3\text{ A}$, $I_{O2} = -3.3\text{ A}$ $\Delta t \leq 200\text{ ms}$			11	A
	Input fuse		15 A Pico Fuse			
C_I	Converter input capacitance				100	μF
	External line inductance				50	μH
	Reverse input protection	Parallel diode + fuse	1.5KE62A			

OUTPUT: Power unit

$P_{O\text{ nom}}$	Output power	$13.5\text{ V} \leq V_I \leq 50.4\text{ V}$		100		W
$V_{O\text{ nom}}$	Output voltage adjustment, factory set	$13.5\text{ V} \leq V_I \leq 50.4\text{ V}$	± 14.9	± 15.0	± 15.1	V
ΔV_O	Load regulation	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$ $0\text{ A} \leq I_{O1, O2} \leq \pm 3.4\text{ A}$ $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$	$\pm 2.5\% V_{O\text{ nom}}$			V
$\Delta V_{O\text{ dyn}}$	Load regulation dynamic	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$, Puls load: $20 - 80 - 20\% \times I_{O1, I_{O2\text{ nom}}}$			± 500	mV
t_{dyn}	Response time	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$, Puls load: $20 - 80 - 20\% \times I_{O1, I_{O2\text{ nom}}}$		1	2	ms
$V_{O\text{ rms}}$	Ripple	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$ Nominal load BW 300 kHz		100	250	mV
$V_{A\text{ pp}}$	Noise	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$ Nominal load BW 20 MHz			350	mV
t_{on}	Turn on time V_O	$13.5\text{ V} \leq V_I \leq 52.5\text{ V}$, $0\text{ A} \leq I_O \leq \pm 3.4\text{ A}$ Resistive load 1.) $V_I \geq V_{I\text{ min}}$, $V_{\text{Enable}} \rightarrow \leq 0.8\text{ V}$ 2.) $V_{\text{Enable}} \leq 0.8\text{ V}$, $V_I \rightarrow \geq V_{I\text{ min}}$	25		200	ms
t_{off}	Hold up time	$13.5\text{ V} \leq V_I \leq 50.4\text{ V}$, $V_{O\text{ min}} = \pm 14.25\text{ V}$ $0\text{ A} \leq I_{O1, 2} \leq \pm 3.4\text{ A}$	0.5			ms
	Overvoltage shutdown V_O	$12.5\text{ V} \leq V_I \leq 50.4\text{ V}$ $0\text{ A} \leq I_{O1, 2} \leq \pm 3.4\text{ A}$	Converter off: $V_{O1} + V_{O2} \leq 36\text{ V}$			
$I_{O1, O2}$	Output current	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$		± 3.4		A
	Output current limitation	$12.5\text{ V} \leq V_I \leq 52.5\text{ V}$	± 3.5			A
	Output short circuit current $I_{O1, O2}$	Short circuit between $+V_O$ and $-V_O$ $12.5\text{ V} \leq V_I \leq 52.5\text{ V}$			4.2	A
	Cross load	one sided load $+/- V_O$	100% realising			
	Cross regulation, V_O	$+15\text{ V}$: $100\% \times I_O$, -15 V : $0\% \times I_O$ $+15\text{ V}$: $0\% \times I_O$, -15 V : $100\% \times I_O$	± 14.75	± 15.0	± 15.25	V
	Cross regulation, short circuit current	100% load ($I_{O1, I_{O2}}$)			8.0	A
	Sense lines	Max. voltage drop compensation			0.25	V
C_O	Output capacity converter	Output stage		5		mF

OUTPUT: Signals

PF	Power Fail, PIN z20 Open Collector Transistor $V_{CE\text{ max}} \leq 70\text{ V}$, $I_{CE\text{ max}} \leq -20\text{ mA}^*$ Reference potential: - Sense	Transistor on: PF= low, $V_O < V_{O\text{ min}}$ Transistor off: PF= high, $V_O \geq V_{O\text{ min}}$	$V_O < 0.95 \times V_{O\text{ nom}} \pm 2\%$ $V_O \geq 0.95 \times V_{O\text{ nom}} \pm 2\%$		V V
	Signals	Signal defined for $V_O \geq 0.6 \times V_{O\text{ nom}}$	LED yellow on		

GENERAL SPECIFICATIONS

f	Switching frequency	$V_I = 24\text{ V}$, $I_{O1, O2} = \pm 3.4\text{ A}$		75		kHz
η	Efficiency	$13.5\text{ V} \leq V_I \leq 50.4\text{ V}$, $P_O \geq 0.7 \times P_{O\text{ nom}}$	82	85		%
	MTBF (SN 29500)	$V_I = 24\text{ V}$, $I_{O1, O2} = \pm 3.4\text{ A}$, $T_A = +40^\circ\text{C}$		500 000		h
	No load, short circuit proof		Continuously			

* - Sign: sink current

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
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SAFETY / DIMENSIONS

	Creepage, Clearance PCB FR4, V0	Input – output Input – case Output – case	2.0 2.0 1.0			mm mm mm
	Converter dielectric strength test every unit ramp function 2 s – 3 s – 2 s	Input – output Input – case Output – case			2100 2100 750	V V V
	Connectors DIN 41612	H15, Pin 24 leading				
	Pin assignment			see table		
	Protection class, protection system			I, IP 20		
	Dimensions w x h x d see figure	Plug - in unit incl. front panel Option: Wall mounting, Din rail mounting TS35	61 x 128.4 x 160 (12 T / 3 U)			mm
	Weight	Plug - in unit incl. front panel Option: Wall mounting, Din rail mounting TS35		0.95 1.5		kg kg

ENVIRONMENTAL CONDITIONS

T _A	Operating temperature range	Continuously EN 50155 Class Tx for 10 min.	- 40 - 40	+ 70 + 85	°C °C
T _{Storage}	Storage temperature range		- 40	+ 85	°C
	Cooling		Free air convection		
	Humidity	EN 50155, IEC 60571	75% averaged year, 95% 30 days		
	Vibration / shock Valid for plug - in unit and wall mounting	IEC 61373, IEC 68-2-27, BN 411002 Cat. I 3 shocks per axes	50 m / s ² , 30 ms		

EMC

	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2001		
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV Performance criteria - B -		
		High frequency field EN 61000 - 4 - 3	20 V / m 80 MHz ... 1 GHz Performance criteria - A -		
		Burst EN 61000 - 4 - 4	Level 3 asym., sym. Performance criteria - A -		
		Surge EN 61000 - 4 - 5	2 kV asym. / 1 kV sym. R _i = 42 Ω Performance criteria - B -		
		HF – Current injection EN 61000 - 4 - 6	3 V _{eff} , R _i = 150 Ω Performance criteria - A -		

STANDARDS

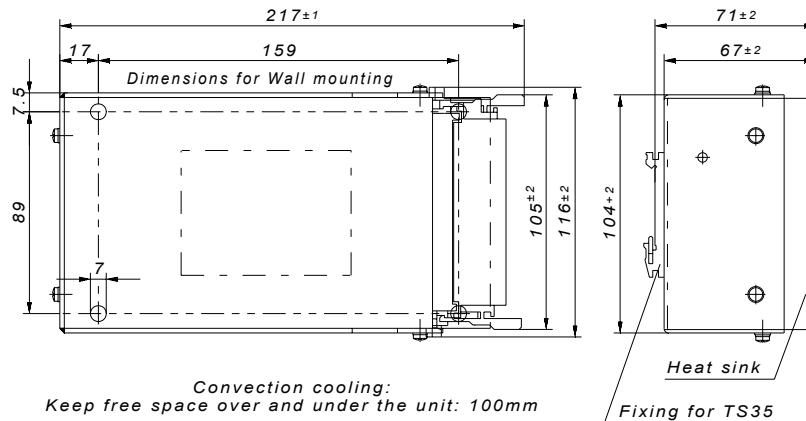
Applied Standards:	EN 50155: 2000	BN 411 002	EN 50124 - 1: 1996	EN 50121 - 3 - 2: 2001	IEC 60571
	SN 29500	prEN 50121 - 1	prEN 50125 - 1	EN 60068 - 2 - 6, 2...27	EN 61000 - 4 - 2...6
	IEC 571	IEC 61373: 1999	EN 60721 - 3 - 5	EN 61373: 1999	EN 60529

Technical specifications valid for: - 40° C ≤ T_U ≤ + 70° C, 13.5 V ≤ V_I ≤ 50.4 V, unless otherwise noted.

H15 – Pin Assignment

Pin	
z 4	+ Sense
d 6	+ V _O
z 8	0 Sense
d 10	GND
z 12	GND
d 14	- V _O
z 16	- Sense
d 18	n.c.
z 20	Power Fail
d 22	Enable
z 24	
d 26	+ V _I
z 28	+ V _I
d 30	- V _I
z 32	- V _I

Dimensions: Wall mounting or Din rail mounting (in mm)



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- x = individual customised front panel
- E = Plug - in unit
- W = Wall mounting
- H = Din rail mounting TS35