

150 DDB 110 M15 □ □ □

$V_{I\text{ nom}} = 72\text{ V}, 110\text{ V}$ $V_{O\text{ nom}} = 15\text{ V}$ $I_O = 10.0\text{ A}$

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_I	Input voltage range	Continuously	50.4		137.5	V_{DC}
	Input voltage range:	for $t \leq 0.1\text{ s}$ for $t \leq 1\text{ s}$	43.2 137.5		50.4 154.0	V_{DC} V_{DC}
$V_{I\text{ min}}$	Converter shutdown		40.0		43.0	V_{DC}
$V_{I\text{ max}}$	Converter shutdown		155		160	V_{DC}
V_{Enable}	Enable Function Reference: $-V_{In}$	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 3.0		0.8 20	V V
I_I	Input current No load Nominal load Nominal load	$V_{In} = 154\text{ V}, I_O = 0\text{ A}$ $V_{In} = 110\text{ V}, I_O = 10\text{ A}$ $V_{In} = 72.0\text{ V}, I_O = 10\text{ A}$ $V_{In} = 43.2\text{ V}, I_O = 10\text{ A}$		1.6 2.5	25	mA A A A
	Input current integral	$V_I = 33.6\text{ V}$			15	A^2s
$I_{I\text{ max}}$	Max. input switch on current $V_I \geq V_{I\text{ min}}, (V_{\text{Enable}} \rightarrow \leq 0.8\text{ V})$	$I_O = 12.0\text{ A}$ $\Delta t \leq 100\text{ ms}$	on request			
	Input fuse		10 A			
C_I	Converter input capacity		30			μF
	External line inductance		50			μH
	Reverse input protection	Parallel diode + fuse	1.5KE160A			

OUTPUT: Power Unit

$43.2\text{ V} \leq V_I \leq 154\text{ V}$

$P_{O\text{ nom}}$	Output power			150		W
$V_{O\text{ nom}}$	Output voltage adjustment, factory set		14.9	15.0	15.1	V
ΔV_O	Regulation	$0\text{ A} \leq I_O \leq 10\text{ A}$ $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$	$\leq 2.5\% V_{O\text{ nom}}$			V
		$T_A = -40^\circ\text{C} \dots +85^\circ\text{C}$	$\leq 3\% V_{O\text{ nom}}$			V
$\Delta V_{O\text{ dyn}}$	Load regulation dynamic	Load: 20 - 80 - 20 % $\times I_{O\text{ nom}}$			250	mV
t_{dyn}	Response time	Load: 20 - 80 - 20 % $\times I_{O\text{ nom}}$		1	2	ms
$V_{O\text{ rms}}$	Ripple	Nom. load BW 300 kHz		100	250	mV
$V_{O\text{ pp}}$	Noise	Nom. load BW 20 MHz			350	mV
t_{on}	Turn on time V_O	$0\text{ A} \leq I_O \leq 10\text{ A}$ Resistive load			200	ms
t_h	Option: Hold up time	$0\text{ A} \leq I_O \leq 10\text{ A}$ Class S2 @ EN 50155	10			ms
	Overshoot shutdown V_O	$0\text{ A} \leq I_O \leq 10\text{ A}$	Converter off: $V_O \leq 18\text{ V}$			V
I_O	Output current			10.0		A
	Output current limitation of I_O		10.1			A
	Output short circuit current	Short circuit between + V_O and - V_O			13.5	A
C_O	Output capacity			12		mF

OUTPUT: Signals

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

GENERAL SPECIFICATIONS

f	Switching frequency	$V_I = 110\text{ V}, I_O = 10\text{ A}$		75		kHz
η	Efficiency	$P_O \geq 0.7 \times P_{O\text{ nom}}$	86	88		%
	MTBF (SN 29500)	$V_I = 110\text{ V}, I_O = 10\text{ A}, T_A = +40^\circ\text{C}$		400 000		h
	No load, short circuit proof		Continuously			

* - sign: sink current

DC/DC Converter

150 W

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SYMBOL PARAMETER TEST CONDITIONS MIN TYP MAX UNITS

SAFETY / DIMENSIONS

	Creepage / clearance distances PD2 PCB FR4, V0, TG = + 140°C	Input – output Input – case Output – case	6.0 4.0 2.0			mm mm mm
	Converter dielectric strength test every unit ramp function 2 s - 3 s - 2 s	Input – output Input – case Output – case			2'100 1'500 750	V _{DC} V _{DC} V _{DC}
	Connectors	Input , Output, SE: 11 pins Enable Signal, Power Fail	MSTB 2,5 HC/11 – STF – 5,08			
	Protection class, protection system		I, IP 20			
	Dimensions with mounting plate <i>see drawing</i>	w x h x d Chassis mounting or Din rail mounting TS35	172 x 165 x 56			mm
	Assembling	Chassis mounting with screws or Din rail mounting TS35	4 x M4			
	Weight			1.4		kg

ENVIROMENTAL CONDITIONS

T _A	Operating temperature range T _A	Continuously EN 50155 Classe Tx for 10 min.	- 40 - 40		+ 70 + 85	°C °C
T _{Storage}	Storage Temperature		- 40		+ 85	°C
	Cooling		free air convection			
	Humidity	EN 50155, IEC 60571	75% averaged year, 95% 30 days			
	Vibration / Shock valid only for chassis mounting	IEC 61373, IEC 68-2-27, BN 411002 Cat. I 3 Shocks per axis	50 m / s ² , 30 ms			

EMC

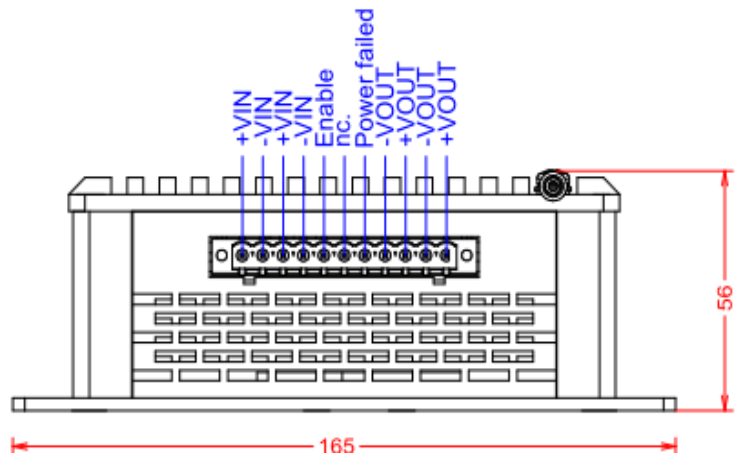
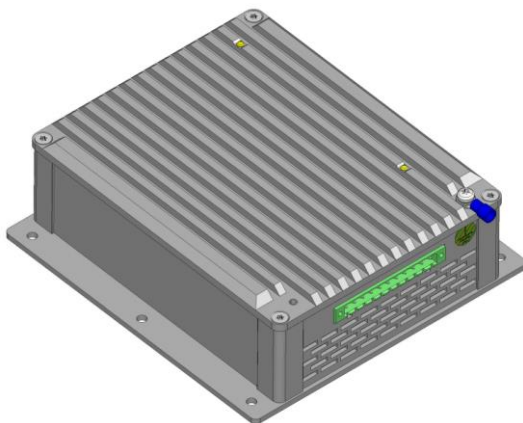
	Emission	Line conducted and radiated	EN 50121 - 3 - 2: 2006		
	Immunity	ESD EN 61000 - 4 - 2	6 kV / 8 kV Performance criteria - B -		
		High frequency field EN 61000 - 4 - 3	20 V / m 80 MHz ... 1 GHz Performance criteria - A -		
		Burst EN 61000 - 4 - 4	Level 3 asym., sym. Performance criteria - A -		
		Surge EN 61000 - 4 - 5	2 kV asym. / 1 kV sym. R _i = 42 Ω, Perf. criteria - A -		
		HF – Current injection EN 61000 - 4 - 6	10 V _{eff} , R _i = 150 Ω Performance criteria - A -		

STANDARDS

Applied standards:	EN 50155: 2006	BN 411 002	EN 50124 - 1: 2006	EN 50121 - 3 - 2: 2006	IEC 60571
	SN 29500	EN 50121 - 1	EN 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_A ≤ + 70° C, 50.4 V ≤ V_i ≤ 137.5 V, unless otherwise noted.

Dimensions (in mm) and Pin Assignment



Order Code:
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select

- 0 = without external femal plugs
- 1 = with external femal plugs
- 0 = without Hold up time
- 1 = with Hold up time 10 ms
- H = Din rail mounting TS35
- W = Chassis mounting

Keep free space over and under the unit: ≥ 100 mm.

Attention: Take care to a close thermal connection between mounting plate and mounting chassis.