

DC/DC converters JETD50



Features

- Class: Expert, power density up to **3792 W/dm³** (77,6 W/In³)
- Low profile 9,8 mm
- Standard 1/8 brick size
- Case operating temperature range: $-60^{\circ}\text{C} \dots +110^{\circ}\text{C}$, Special request - up to 125°C
- Output current up to 10 A
- Output power 50 W
- Input voltage ranges: 10,5...18 VDC, 10,5...36 VDC, 17...36VDC, 18...36 VDC, 18...75 VDC, 36...75 VDC
- Output voltage adjustment, remote on/off
- Max capacitance 13000 μF ($U_{\text{out}}=5$ VDC, 50% Output power)
- Metal case, with mounting holes
- Feedback without optocouplers

Description

Ultra-compact isolated DC/DC converters (modules) are specially designed for industrial applications and harsh environment operation. These compact units (58,5 x 23 x 9,8 mm) have output power up to 50 W and wide operating temperature range between $-60 \dots +110^{\circ}\text{C}$.

Modules can be switched on and off by command, are provided with full complex of protections as following: output over-current, short-circuit, over-heat. Modules' outputs can be connected in parallel or series.

These modules are built using specially designed electronic components and sealed with heat-conducting potting material. They have wide operating temperature range and thermal protection chip. These modules undergo special thermal and limit tests, including burn-in-tests with extreme on/off modes. They are available in metal cases with mounting holes.

Ordering information

JETD 50 - 24W S 12 - C T

1 2 3 4 5 6 7

- 1 - «JETD» Series
- 2 - Max output power, W
- 3 - Input voltages
 - 12W** - 12 VDC (10,5...36 VDC)
 - 12** - 12 VDC (10,5...18 VDC)
 - 24W** - 24 VDC (18...75 VDC)
 - 24** - 24 VDC (18...36 VDC)
 - 27** - 27 VDC (17...36 VDC)
 - 48** - 48 VDC (36...75 VDC)
- 4 - Index of output channels quantity
 - S** - one
- 5 - Nominal output voltage, VDC (two signs for a channel)
- 6 - Index of case design
 - C** - Metal case with mounting holes
- 7 - Index of operating temperature range of the case
 - T** -60°C...+110°C(*)

Technical information

Standard models with one output

Module	Input voltage range	Output power	Output voltage / nominal output current	Typical efficiency
JETD50-12S05-XX	10,5...18 VDC	50 W	5 VDC / 10 A	88%
JETD50-12S12-XX			12 VDC / 4,16 A	90%
JETD50-12S15-XX			15 VDC / 3,33 A	90%
JETD50-12S24-XX			24 VDC / 2,08 A	90%
JETD50-12S27-XX			27 VDC / 1,85 A	90%
JETD50-12WS05-XX	10,5...36 VDC		5 VDC / 10 A	87%
JETD50-12WS12-XX			12 VDC / 4,16 A	89%
JETD50-12WS15-XX			15 VDC / 3,33 A	89%
JETD50-27S05-XX	17...36 VDC		5 VDC / 10 A	88%
JETD50-27S12-XX			12 VDC / 4,16 A	90%
JETD50-27S15-XX			15 VDC / 3,33 A	90%
JETD50-24WS05-XX	18...75 VDC		5 VDC / 10 A	88%
JETD50-24WS12-XX			12 VDC / 4,16 A	90%
JETD50-24WS15-XX			15 VDC / 3,33 A	90%
JETD50-24S05-XX	18...36 VDC		5 VDC / 10 A	89%
JETD50-24S12-XX			12 VDC / 4,16 A	91%
JETD50-24S15-XX			15 VDC / 3,33 A	91%
JETD50-24S24-XX			24 VDC / 2,08 A	91%
JETD50-24S27-XX			27 VDC / 1,85 A	91%
JETD50-48S05-XX	36...75 VDC		5 VDC / 10 A	89%
JETD50-48S12-XX		12 VDC / 4,16 A	91%	
JETD50-48S15-XX		15 VDC / 3,33 A	91%	
JETD50-48S24-XX		24 VDC / 2,08 A	91%	
JETD50-48S27-XX		27 VDC / 1,85 A	91%	

Comment:

- * In special orders it's possible to produce modules with maximal case temperature up to 125°C.
- For input voltages ranges 12W, 24W, 27 standards modules are produced with output voltage up to 15 V.
- It's possible to produce non-standard output voltages from 3 to 60 V and maximal current 10 A.
- In special order it's possible to produce modules 12 and 12W input with voltages ranges 9-18 V and 9-36 V respectively.

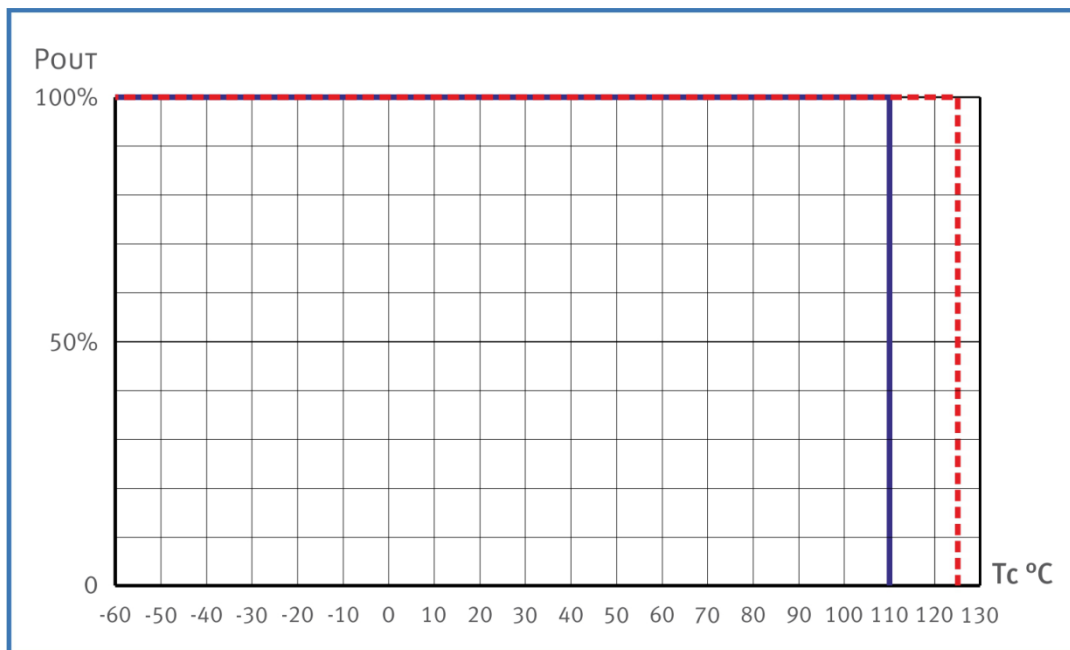
Specifications for DC/DC converters JETD50*

Input specifications	
Input voltage range / transitional deviation, 1 sec 12	=10,5...18 VDC / =10,5...20 VDC
Input voltage range / transitional deviation, 1 sec 12W	=10,5...36 VDC / =10,5...40 VDC
Input voltage range / transitional deviation, 1 sec 27	=17...36 VDC / =17...80 VDC
Input voltage range / transitional deviation, 1 sec 24W	=18...75 VDC / =17...84 VDC
Input voltage range / transitional deviation, 1 sec 24	=18...36 VDC / =17...40 VDC
Input voltage range / transitional deviation, 1 sec 48	=36...75 VDC / =36...84 VDC
Input filter	P-type
Output specifications	
Output voltage adjustment (single-channel models only)	±5% Uout
Instability of output voltage in accordance to changing of output current from 10 to 100% for single output model	±2%
Instability of output voltage in accordance to changing of input voltage	±0,5%
Ripple and noise (peak-to-peak) (20 MHz)	<2% Uout
Short circuit protection**	>150% Iout nom, auto repair
Overvoltage protection**	<130 % Uout
Over current protection level**	Pout ... 1.3·Pout
Remote On/Off	Shuts down outputs by applying 0...1,1VDC or connection of output «ON» and «- IN», I≤5mA
Max capacitance, Uout=5VDC; 50% Output power***	13000 µF
General specifications	
Case temperature (operating) index T	-60°C ...+110°C
Case temperature (storage)	-60°C ...+125°C
Output power derating	See diagram
High humidity	100% @35 °C
Thermal resistance case — environment without heat sink	11,3 °C/W
Conversion frequency	300 kHz typ.
Insulation voltage input/output	=1500 VDC
Insulation voltage input/case	=1500 VDC
Insulation voltage output/case	=1000 VDC
Insulation voltage output/output	=500 VDC
Isolation resistance @ 500 VDC	>20 MOhm
EMC standards	EN 55022, class A; EN 55022, class B with additional filter
Safety standards	IEC/ EN 60950
Typical MTBF (Tcase = 50°C; Pout = 0,7 Pout max)	200 000 hrs
Cooling method	Free air convection or forced air cooling
Weight (max)	53 g

* All specifications are valid for normal climatic conditions, Uin. nom., Iout. nom., unless otherwise stated.

** Parameters are stated for the information purposes and could not be used at long term work, exciding maximum output current, at work outside of a range of operating temperatures.

*** For other output voltages the maximum output capacity is calculated from the fact that $C_{max} \cdot U_{out}^2$ is a constant.



— Allowed power output and case temperature range for standard version of unit.

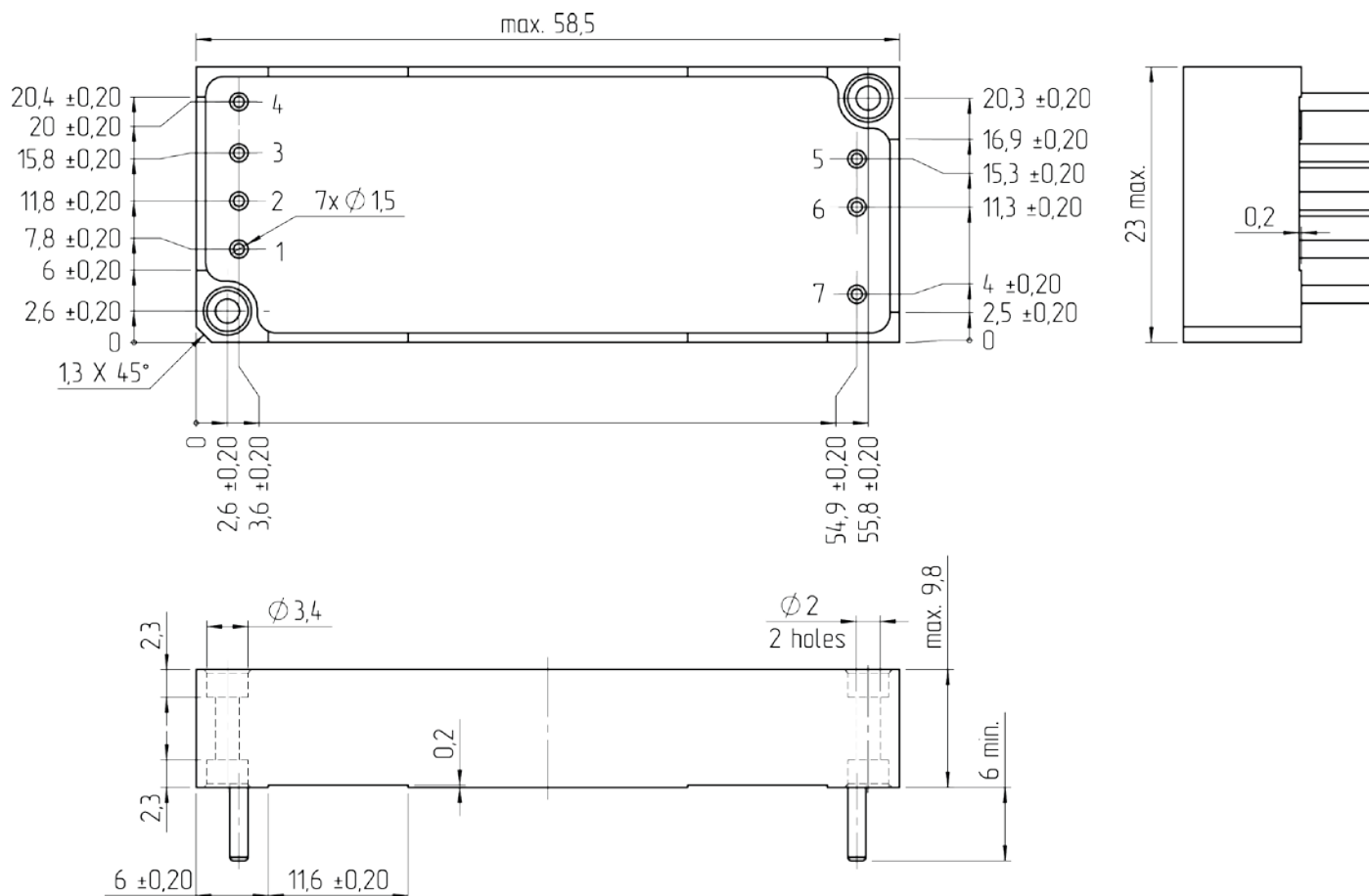
- - - Possible range of output power and case temperature up to 125°C for special order.

For modeling optimal heatsink and its delivery, with goal of providing allowed case temperatures, please contact us directly aeps@aeps-group.cz

Pin out

Nº Pin	1	2	3	4	5	6	7	8
Single output	Vin+	Vin-	On/Off	Case	Trim	Vout-	Vout+	-

Single output model with mounting holes (1/8 brick size)



Certificates

Certificate ISO 9001*
CE conformity declaration

* Management system and R&D of Alexander Electric is ISO certified

Note

The label with sign "remove before use" can be placed on the top surface of the module and must be removed before installation.

Please, note that all information in this material is for reference only. Further detailed information (including: additional requirements, manuals and circuit schemes) is found on our website <http://www.goncharov-jet.com>

Contact information

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