

Features

1. Rated power:20W Max
2. Input voltage 8.5...160VDC
3. Regulated output
4. High efficiency up to 83%
5. Isolation voltage 30DDVAC
6. Low ripple and noise
7. Remote On/Off control
8. Operating temperature range:-40~+85°C
9. RoHS compliant
10. Standard 2"x1"package
11. Under voltage, over voltage,over current, and short circuit protection
12. Meet IEC/EN62368-1,EN50155 standards
13. Designed for railway apps
14. 3 year warranty



3 years
Warranty

Selection Guide

Model Number	Input Voltage [VDC]			VOUT [VDC]	Dutput Current [mA]		Efficiency [%]Typ.	Capacitive Load [uF]Max.
	Nominal	Range	*Max.		Max.	Min.		
ATWH1D12ALD-20W	72	8.5~160	170	±12	±833	0	83	±560
ATWH1D05BLD-20W*				5	4000	0	82	10000
ATWH1D12BLD-20W*				12	1667	0	85	1600
ATWH1D24BLD-20W*				24	833	0	83	470

Note [1]: This is a custom-made unit.
*underdevelopment

Input & Output Specification

Unless otherwise indicated, specifications are measured at TA=25°C, nominal input voltage, full load after warm up.

Parameters	Conditions	Min.	Typ.	Max.	Unit
Input current	Full load		315	350	mA
	No load		30	50	
Input voltage surge 1 second max		-0.7	-	180	VDC
Startup input voltage	Full load	-	-	8	VDC
Startup time	Resistive load	-	20	120	mS
Remote On/Off control	Logic high	3.5	-	12	VDC
"Ctrl" pin open or logic high [ON]	Logic low	0	-	1.2	VDC
"Ctrl" pin grounded or logic low [OFF]	Ctrl pin current		6	12	mA
Output voltage accuracy	$I_{OUT}=5\%$ to 100%	1	± 1	± 3	%
Line regulation Full load, $V_{IN}=V_{IN,Min}$ to $V_{IN,Max}$			± 0.2	± 0.5	%
Load regulation $I_{OUT}=5\%$ to 100% of $I_{OUT,rated}$			± 0.5	± 1.0	%
Output ripple and noise [2] 20MHz bandwidth, peak to peak			150	240	mVp-p
Temperature coefficient	Full load		-	0.03	%/°C
Dynamic load response $I_{OUT}=25\% \sim 50\% \sim 75\%$ of $I_{OUT,rated}$	Peak deviation	-	± 3	± 5	% V_{OUT}
	Recovery time		300	500	μS
Output over voltage protection		110	130	160	% V_{OUT}
Output over current protection		110	140	240	% I_{OUT}
Output short circuit protection		Continuous, automatic recovery			
Input filter		PI Filter			
Hot plug		None			

Note 2} : Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μF G47μF parallel capacitor. Operating with less than 5% of rated load will not cause damage to the converters, but the performances data may not fall into the specifications, and stable operating is not assured.

General Specifications

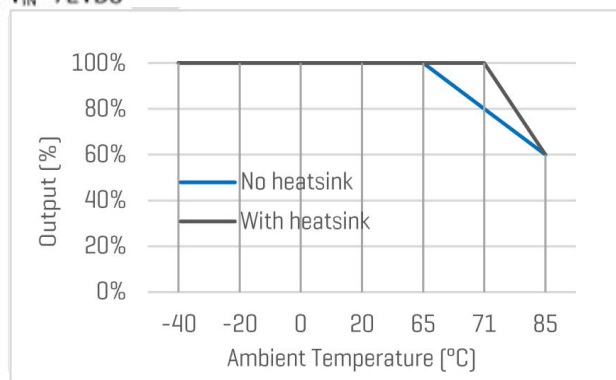
Parameters	Conditions	Min.	Typ.	Max.	Unit
Isolation voltage 1 minute,leakage current 1mA max	I/P to D/P	3000		-	VAC
Isolation resistance Tested at 500VDC	I/P to D/P	1000	-		M ohm
Isolation capacitance 100KHz,0.1V	I/P to O/P	-	20	-	pF
Switching frequency	Full load	-	120		KHz
Operating temperature	See"Derating Curve"	-40	-	85	°C
Storage temperature		-55		+125	°C
Storage humidity	None condensing	5	-	95	%RH
Pin soldering temperature		-	-	300	°C
Case material		Aluminum alloy			
MTBF	MIL-HDBK-217F	>1,000,000 Hours,TA=25°C			
Safety standards		EN/IEC 62368-1			
EMC standards	CISPR32,EN55032	Class A*with External Circuit [3]			
ESD	EC/EN61000-4-2	Contact±6kV,perf.Criteria B			
Radiated	EC/EN61000-4-3	10V/m,perf.Criteria A			
EFT,Burst	IEC/EN61000-4-4	±2kV,perf.Criteria B[3]			
Surge	IEC/EN61000-4-5	Line to Line±2kV,perf.Criteria B[3]			
Conducted	IEC/EN61000-4-6	3Vrms,perf.Criteria A			
Size,and Weight		50.8x25.4x12mm,41g			

Characteristic Curves

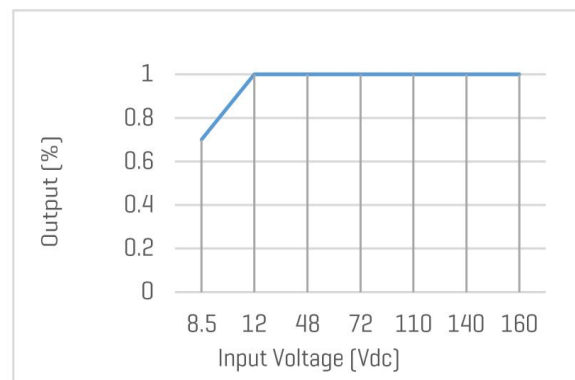
Derating Curve

Output vs Ambient Temperature

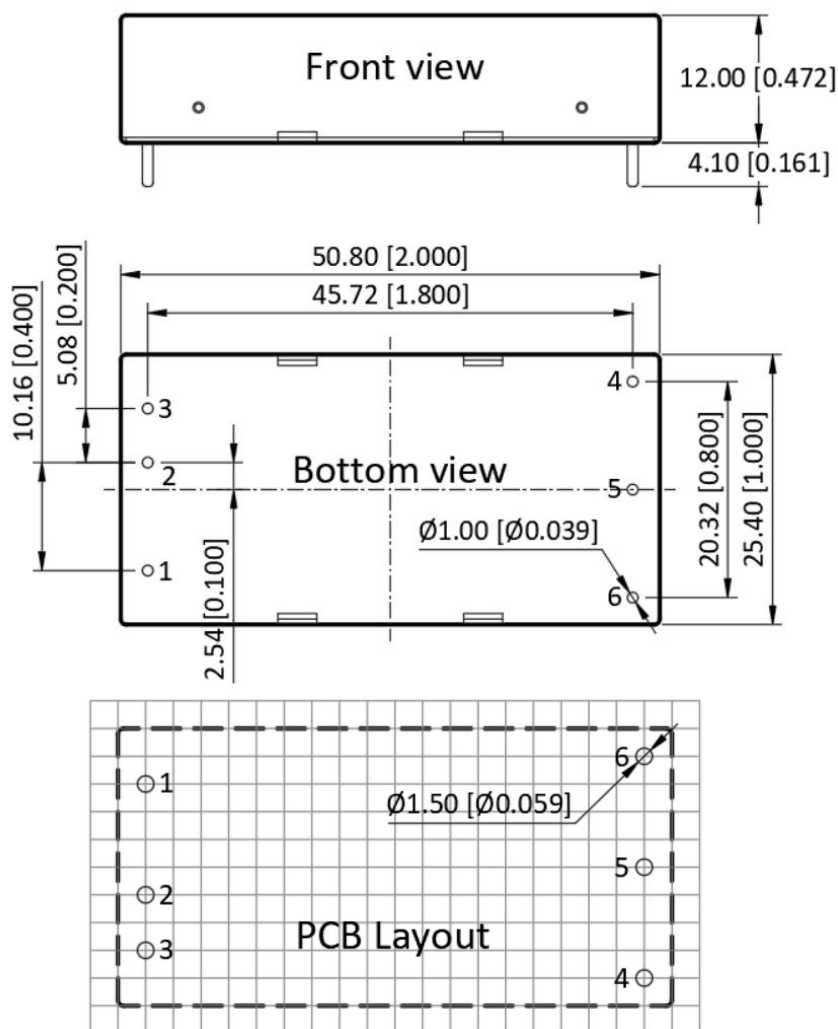
$V_{IN}=72VDC$



Output vs Input Voltage



Mechanical Specifications



Pin Definition

Pin#	Dual Out
1	Ctrl
2	-V _{IN} /GND
3	+V _{IN}
4	+V _{OUT}
5	COM
6	-V _{OUT}

Unless otherwise specified unit: mm [inch]
 General tolerance: ±1.00 [±0.040]
 Pin thickness: ±0.15 [±0.006]
 Pin distance: ±0.50 [±0.020]
 Footprint grid 2.54 x 2.54 mm

Note:

1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
2. The maximum capacitive load is tested under the input voltage range and full load condition;
3. Unless otherwise stated, all indexes in this manual are measured at Ta=25°C, humidity <75%RH, nominal input voltage and rated output load;
4. All index testing methods in this manual are based on the enterprise standards of the company;
5. Our company can provide product customization, specific needs can directly contact our technical staff;

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