AM25EUW-ZK

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2x1”

The new AM25EUW-Z is a brand-new 25 Watt DC/DC converter that offers much greater cost effectiveness due to material normalization and production automation also leading to improved reliability and performance. Offering a **10:1** ultra-wide input voltage range of 16-160 VDC and an output voltage range from 5-24V, this series will offer many benefits to your new system design.
This new series has an inbuilt heat sink offering great operating temperatures, from -40°C to 100°C with full power up to 58°C. It also features an isolation of 3000VDC for improved reliability and system safety. Furthermore, a higher MTBF of 190,000h, output short circuit protection (OSCP), output over-current protection (OCP) and an output over-voltage protection (OVP) come standard with the series in an 2x1” package. The AM25CWR-Z is perfect for Railway applications.

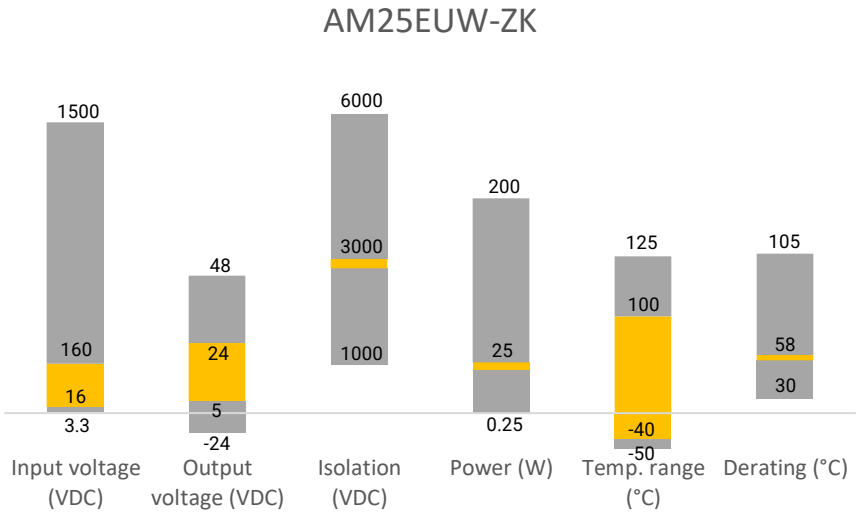
Features

- Ultra-wide Input: 16 – 160VDC
- Operating Temp: -40 °C to +100 °C
- High isolation voltage: 3000VDC
- On/Off Control, soft start, no minimum load requirements
- Output short circuit, over-current, over-voltage protection
- Designed to meet EN50155
- Built in EMI filter designed to EN50121-3-2 class

RoHS

3yr Warranty

Summary



Training



Product Training Video (click to open)

Press Release

Coming Soon!

Application Notes

Applications

Railway

Industrial

Models & Specifications

Single Output							
Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current max (mA)	Output Current max (A)	Isolation (VDC)	Maximum capacitive Load (µF)	Efficiency (%)
AM25EUW-7205SH30ZK	72 (16 - 160)	5	409	5	3000	6800	84
AM25EUW-7212SH30ZK	72 (16 - 160)	12	413	2.08	3000	1000	84
AM25EUW-7215SH30ZK	72 (16 - 160)	15	409	1.67	3000	820	85
AM25EUW-7224SH30ZK	72 (16 - 160)	24	408	1.04	3000	470	85

Input Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage range	Nominal 72	16 – 160		VDC
Input under voltage lockout	ON/OFF	13.8/12		VDC
Filter	Pi network			
Startup time	Nominal input and resistive load	0.06		S
Absolute maximum rating	Duration 100mS		176	VDC
Peak input voltage time	Duration 100mS			VDC
Input reflected ripple current			20	mA pk-pk
On/Off Control	ON – 3 to 12Vdc or open; OFF – 0~1.2Vdc or Short circuit Pin 2 and Pin 3, idle current 3mA typ.			

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	3000		VDC
Resistance	500Vdc	>1000		MOhm
Capacitance		2000		pF

Output Specification				
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy		±1		%
Line regulation	Full load, main input range		±0.2	%
Load regulation	0-100% load		±0.5	%
Voltage adjustment			±10	%Vout
Short circuit protection	Continuous, Auto recovery			
Over current protection		150		% of Iout

Over voltage protection	Zener diode clamp

Output Specification (Continued)

Parameters	Conditions	Typical	Maximum	Units
Temperature coefficient		±0.02		%/°C
Ripple & Noise*			100	mV pk-pk
Transient recovery time	25% load step change	500		µS
Transient response deviation	25% load step change	±4		%

*** 20MHz bandwidth**

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	Full load	250		KHz
Operating temperature	See derating graph	-40 to +100		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			105	°C
Over temperature protection	At case	115		°C
Lead temperature	1.5mm from case 10 sec.		260	°C
Cooling	Free air convection			
Humidity	Non-condensing	95		% RH
Case material	Aluminum			
Base material	Non-conductive black plastic (UL 94V-0 rated)			
Weight	48			g
Dimensions (L x W x H)	2.09 x 1.09 x 0.65 inches (53.00. x 27.60 x 16.6mm)			
MTBF	> 230 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			

All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Environmental Specifications

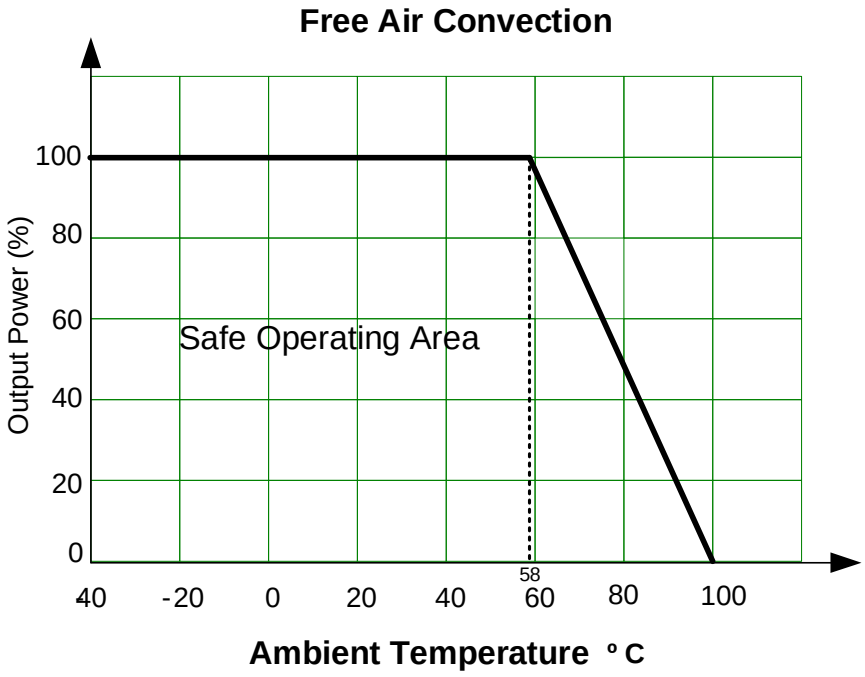
Parameters		
Standards	Thermal shock	IEC 60068
	Shock	EN61373
	Vibration	EN61373

Safety Specifications

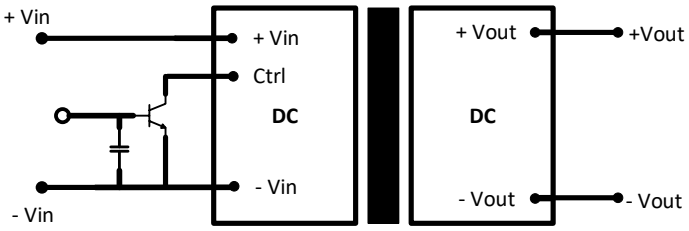
Parameters		
Standards	Electronic equipment in railway applications	Design to meet EN50155, IEC/EN/UL60950-1, IEC/EN/UL62368-1
	EMC - Conducted emission	EN50121-3-2, 99dBuV from 0.15-0.5MHZ 93dBuV from 0.5-30MHZ
	Electrostatic Discharge Immunity	EN50121-3-2, Contact ±6KV / Air ±8KV, Criteria A
	RF, Electromagnetic Field Immunity	EN50121-3-2, 20V/m, Criteria A
	Electrical Fast Transient/Burst Immunity**	EN50121-3-2, 2KV, Criteria A
	Surge Immunity**	EN50121-3-2, 2KV, Criteria A
	RF, Conducted Disturbance Immunity	EN50121-3-2, 10Vr.m.s, Criteria A
	Power frequency magnetic field Immunity	EN61000-4-8, 100A/m, Criteria A

*** The external filter capacitor is required to meet EFT and Surge EN50121-3-2**

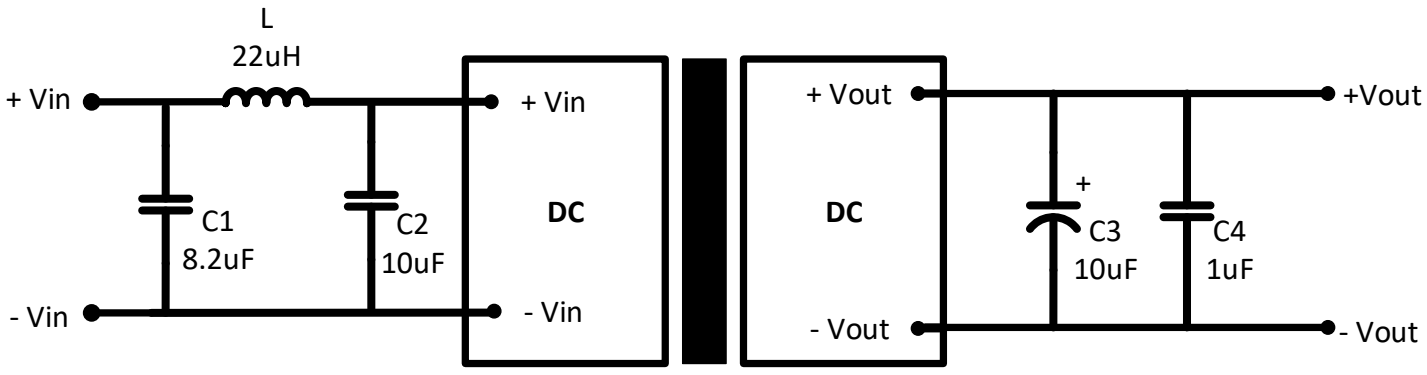
Derating



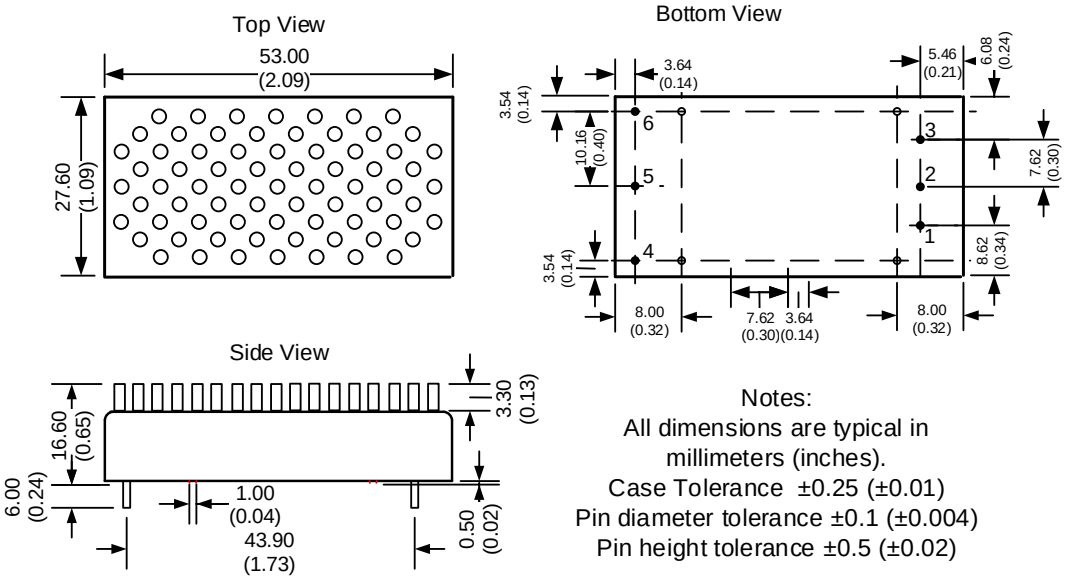
On/Off Control Application Circuit



Ripple Noise Reduction Circuit



Dimensions



Notes:
All dimensions are typical in millimeters (inches).
Case Tolerance ±0.25 (±0.01)
Pin diameter tolerance ±0.1 (±0.004)
Pin height tolerance ±0.5 (±0.02)

Pin Output Specifications	
Pin	Single
1	+V Input
2	-V Input
3	On/Off Ctrl
4	+V Output
5	-V Output
6	Trim

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.