

# DC/DC Product Specification

Embedded Power for  
Business-Critical Continuity

- 1/16<sup>th</sup> brick fully regulated DCDC converter.

## AVD50-48S05

### 1/16<sup>th</sup> brick

Input voltage: 36-75V  
Single Output: 5V  
Rated power: 50W



Rev 30.08.2012  
AVD50 series  
1 of 2

## Special Features

- 2:1 Wide input range
- Optimised for High density, small space applications
- Low ripple and noise
- Fixed switching frequency
- High efficiency
- High capacitive load capability
- Pre-bias start-up capability
- Basic insulation system
- Through hole or SMT termination
- Openframe structure

## Safety

- UL, cUL: UL60950
- TUV/CE: IEC/EN60950

## Product Description

The AVD50-48S05 is the latest high efficiency 1/16<sup>th</sup> brick. It operates from a wide input range of 36Vdc to 75Vdc and provides a regulated output voltage of 5Vdc. The output is rated to a power level up to 50Watts maximum. Its protection features include non latching OCP, OTP and OVP. It also has an enable pin on the primary side of the converter. The unit is an open frame design with baseplate option that is optimised for either contact-cooled applications or forced airflow applications.

## Specifications

Feature	
Output power:	50W
Super high efficiency:	90.5%(5V)
Functions:	Remote control, trim function, Sense; Input LVP, output OVP and OCP, OTP Open frame structure with base plate option.
Isolation:	Basic Insulation
Safety	
UL:	UL60950
TUV/CE:	IEC/EN60950
Input specification	
Input range	36Vdc to 75Vdc
Input Surge	100V for 100mSec
Control specification	
Enable	TTL compatible Positive or Negative enable
Output specification	
Output Voltage	5V dc
Trim range	+10% to -20% Vout
Output Current	10A
Ripple and noise	50mV pk-pk
Regulation	Load regulation = 25.5mV, Line regulation = 10mV
Switching Frequency	Fixed switching frequency 250Khz
Isolation Voltage	1500Vdc
Transient response.	150mV deviation 100uS recovery (50%-75% Iout)

## Environmental Specification

Storage Temperature	-55 to +125 deg C
Ambient operating temp	-40 to +85 deg C
MTBF at 25degC	2 Million hours (48V, Io=20A)
OTP	125 deg C

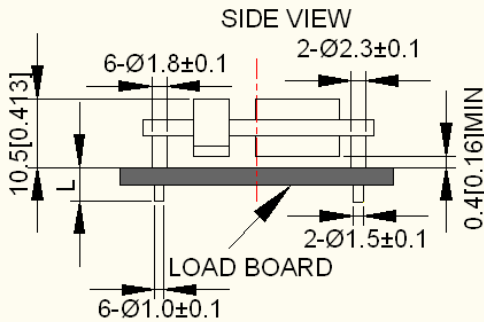
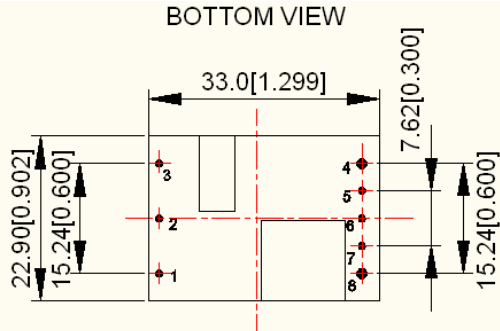
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## Mechanical



UNIT: mm[inch]      BOTTOM VIEW: pin on  
TOLERANCE: X.Xmm±0.5mm[X.X in.±0.02in.]  
                  X.XXmm±0.25mm[X.XX in.±0.01in.]

### Pin Assignments

Pin #	Function
1	+V in
2	Enable
3	-V in
4	-V out
5	- Sense
6	Trim
7	+Sense
8	+V out

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- Surge Protection

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## Ordering information

Input voltage	Output voltage	Output current	Efficiency	Part number
48V	5V	10A	90.5%	AVD50-48S05SL
48V	5V	10A	90.5%	AVD50-48S05-6L
48V	5V	10A	90.5%	AVD50-48S05P-6L

### Notes

- Standard converter is Negative enable
- '-6' = 3.8mm pin length.
- '-S' = Surface mount ,tray package
- '-L' = RoHS-6 compliant.
- '-P' = Positive logic remote control

### Notes,

- 1\ 20Mhz bandwidth. External 10uF tantalum capacitor placed across +Vout and -Vout; 33 uF e-cap or equivalent placed across +Vin and -Vin.
- 2\ Efficiency measurements taken at full load and nominal line and Tamb = 25degC
- 3\ All specifications taken at nominal line, full load and Tamb = 25degC unless otherwise noted
- 4\ Mechanical dimensions are for reference only. Dimensions are in MM. Mechanical tolerance = +/- 0.5mm
- 5\ Technical reference notes should be consulted for detailed information when available.
- 6\ All specifications subject to change without notice
- 7\ Warranty 2 years
- 8\ The through-hole terminated modules are intended for wave-soldering process – special request for other manufacturing processes to be made to Emerson