Electronic Products
Elektronisches Knowhow aus einer Hand

# EPOT 10W SERIES–Wide Input Range Over Temperature Protection

DC-DC Converter

## Features

10W DIL PACKAGE
INDUSTRY STANDARD PACKAGE
9-18V,18-36V,36-75V
WIDE INPUT RANGE
REGULATED OUTPUT
SHORT CIRCUIT PROTECTION
RoHS COMPLIANT
UL 94V-0 PACKAGE MATERIAL
CUSTOM SOLUTIONS AVAILABLE


## Specification

| | | |
|---|---|---|
| **Output Specification** | Voltage Set-point Accuracy | +/-2% max. |
| | Temperature Coefficient | +/-0.05%/°C |
| | Ripple & Noise(20MHz BW) [1] | 150mVp-p max. |
| | Line Regulation [2] | +/-0.5% max. |
| | Load Regulation [3] | +/-0.5% max. |
| | Minimum Load | 10% of Full Load |
| | Short Circuit Protection | Continuous |
| | Short Circuit Restart | Automatic |
| | Over Load Protection | 130%~180% |
| | Transient Response[4] | 500uS max. |
| **Input Specification** | Input Voltage Range | 2:1 Input Range |
| | Input Filter | Pi Network |
| | Protection | Fuse Recommended |
| **Environmental Specifications** | Operating Temperature | -40°C to +80°C |
| | Case Temperature | +105°C max. |
| | Storage Temperature | -55°C to +125°C |
| | Humidity | 95% max. |
| | Cooling | Free-Air Convection |
| **General Specifications** | Efficiency | 82% typ. |
| | Isolation Voltage [5] | 1500VDC min. |
| | Isolation Resistance | 109 ohms min. |
| | Isolation Capacitance | 3000pF max. |
| | Switching Frequency | 300 KHz typ. |
| | MTBF [6] | >200,000 Hours |
| | Weight | 31.2g typ. |
| | Case Material | Six-Side Shielded Case |
| | Case Size | 50.8mm*25.4mm*11.2mm |
| | Conducted Emissions | EN55022 Class A |
| | Radiated Emissions | EN55022 Class A |

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD, AND 25 °C UNLESS OTHERWISE NOTED

[1] Measured with 1uF ceramic capacitor connect to the output pins
[2] High Line to Low Line
[3] Load Regulation is for output load current change from 10% to 100%.
[4] 25% Step Load Change
[5] For 10 seconds.
[6] MIL-HDBK-217F @25°C, Ground Benign

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## Selection Guide 2:1 10W Output

| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT[7] CURRENT(mA) FULL LOAD | INPUT[7] CURRENT(mA) NO LOAD | EFF (%)[8] | CAPACITOR LOAD (Max) | PACKAGE |
|---|---|---|---|---|---|---|---|---|
| EPOT1205 | 9-18 | 5 | 2000 | 1016 | 55 | 82 | 1000uF | |
| EPOT1212 | 9-18 | 12 | 833 | 1004 | 35 | 83 | 220uF | |
| EPOT1215 | 9-18 | 15 | 667 | 1005 | 35 | 83 | 100uF | |
| EPOT2405 | 18-36 | 5 | 2000 | 502 | 30 | 83 | 1000uF | |
| EPOT2412 | 18-36 | 12 | 833 | 502 | 25 | 83 | 220uF | |
| EPOT2415 | 18-36 | 15 | 667 | 496 | 25 | 84 | 100uF | A |
| EPOT4805 | 36-75 | 5 | 2000 | 254 | 20 | 82 | 1000uF | |
| EPOT4812 | 36-75 | 12 | 833 | 254 | 20 | 82 | 220uF | |
| EPOT4815 | 36-75 | 15 | 667 | 251 | 20 | 83 | 100uF | |

Note: Other input to output voltages may be available. Please contact factory.

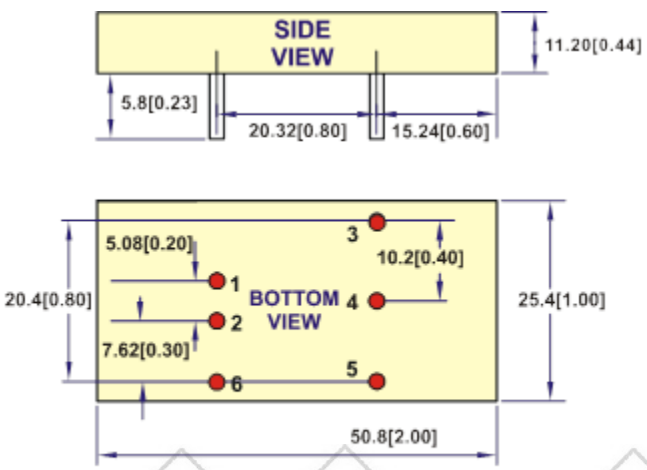
## Part Numbers Structure

| Module Name | Difference |
|---|---|
| EP-OT-*1-*2 | EP=Series Name<br>OT=Over Temperature Protection<br>x1=Input Voltage(9~18V ; 18~36V ; 36~75V)<br>x2=Output Voltage( 05 ; 12 ; 15 ) |

[7] NOMINAL INPUT VOLTAGE.
[8] NOMINAL INPUT VOLTAGE, FULL LOAD.

## Mechanical Dimensions

Package “A”



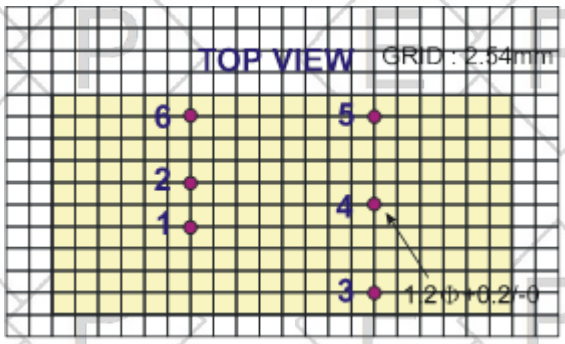

All dimensions are in millimeters[inches]

| PIN | SINGLE |
|---|---|
| 1 | +Vin |
| 2 | -Vin |
| 3 | +Vout |
| 4 | NP |
| 5 | -Vout |
| 6 | NP |

NOTE: Pin Size is Tolerance
1.0Φ ±0.10mm
All Dimensions In mm(Inches)
Tolerance .X or .XX= ±0.80mm

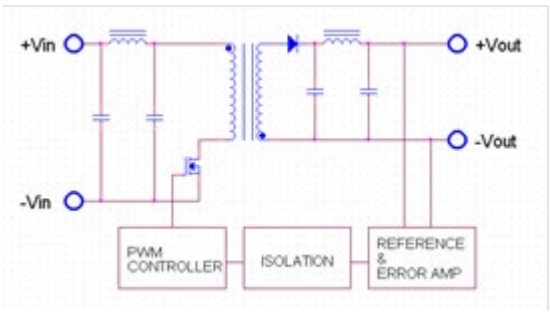
## Recommended Footprint Details

Package “A”




## Simplified Schematic

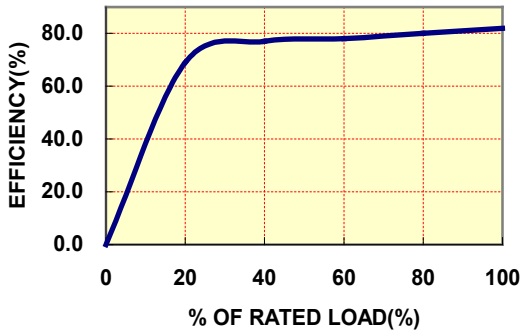
SINGLE OUTPUT

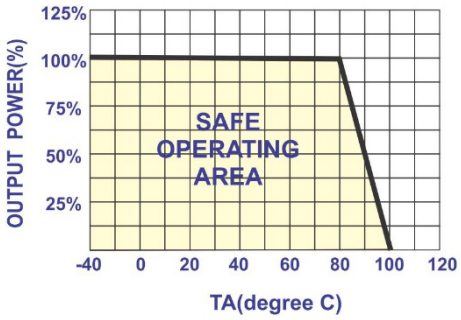


## Typical Performance Curves

Specifications typical at Ta=25 °C, nominal input voltage, rated output current unless otherwise specified.

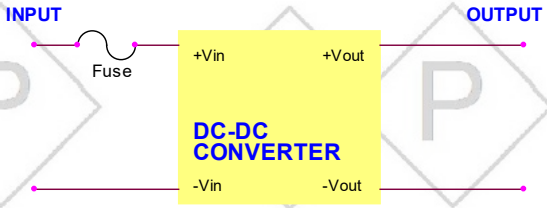
| OUTPUT LOAD VS EFFICIENCY | TEMPERATURE DERATING |
|---|---|




## Input Fuse Selection Guide

| 9-18V | 18-36V | 36-75V |
|---|---|---|
| INPUT VOLTAGE(VDC) | INPUT VOLTAGE(VDC) | INPUT VOLTAGE(VDC) |
| 3000mA Slow-Blow Type | 1500mA Slow-Blow Type | 1000mA Slow-Blow Type |




Note: Certain applications may require the installation of external fuse in front of the input

## EPOT 10W Series Application Notes:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the EPOT 10W series.

External output capacitance is not required for operation; however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting –OUT as the negative output.



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