Electronic Products
Elektronisches Knowhow aus einer Hand

# 30W Wide Input Range DC-DC Converter 2" x 2"x 0,64"

## Features:

- 30W DIL Package
- Industry Standard Package
- 9-18V,18-36V,36-72V,18V-72 Wide Input Range
- 100% Burned In
- High Efficiency
- UL 94V-0 Package Material
- Custom Solutions Available
- RoHS Compliant

## Specifications:

| | | |
|---|---|---|
| Output Specifications | Voltage Setpoint Accuracy | Single Output +/-2% max<br>Dual Output +/-2% max<br>Triple 5V +/-2% max, 12V/15V +/-5% max |
| | Over Voltage Protection | Built-in |
| | Temperature Coefficient | +/-0.05/°C |
| | Ripple & Noise (20MHz BW)[1] | 100mVp-p max |
| | Line Regulation[2] | Single +/-0.2% max<br>Dual +/-0.2% max<br>Triple +/-1.0% max |
| | Load Regulation[3] | Single +/-0.2% max<br>Dual +/-0.2% max<br>Triple +/-5% max |
| | Minimum load | 10% of Full Load |
| | Short Circuit Protection | Continuous |
| | Short Circuit Restart | Automatic |
| | External Trim Adj. Range | +/-10% |
| | Over Load Protection | 180% Typ |
| | Transient Response[4] | 500uS max |
| Input Specifications | Input Voltage Range | 2:1 Input Range |
| | Input Filter | Pi Network |
| | Protection | Fuse Recommended |
| Environmental Specifications | Operating Temperature | -40°C to +71°C |
| | Storage Temperature | -55°C to +100°C |
| | Humidity | 95% max |
| | Cooling | Free-Air Convection |
| General Specifications | Efficiency | 80% min |
| | Isolation Voltage[5] | 1000 VDC min |
| | Isolation Resistance | 109 ohms min |
| | Isolation Capacitance | 2500pF max |
| | Switching Frequency | 100KHz min |
| | MTBF[6] | >400,000 Hours |
| | Weight | 90g Typ |
| | Case Material | Six-Side Shielded Case |
| | Case Size | 50.8mm*50.8mm*16.0mm |
| | Potting Material | Epoxy(UL94-V0) |
| | Conducted Emissions | EN55022 Class A |
| | Radiated Emissions | EN55022 Class A |

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Zu Seite 1:

All Specifications Typical at Nominal Line, Full Load, and 25 °C Unless Otherwise Noted.

**Footnotes:** [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.

## Selection Guide 2:1 25W-30W Output

| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT[1] CURRENT(mA) FULL LOAD | NO LOAD | EFF (%)[2] | ISOLATION (VDC) |
|---|---|---|---|---|---|---|---|
| EP9-18-05S5000 ME | 9-18 | 5 | 5000 | 2604 | 40 | 80 | 1000 |
| EP9-18-09S3333 ME | 9-18 | 9 | 3333 | 2950 | 40 | 84 | 1000 |
| EP9-18-12S2500 ME | 9-18 | 12 | 2500 | 2950 | 40 | 84 | 1000 |
| EP9-18-15S2000 ME | 9-18 | 15 | 2000 | 2950 | 38 | 84 | 1000 |
| EP9-18-24S1250 ME | 9-18 | 24 | 1250 | 2941 | 36 | 85 | 1000 |
| EP9-18-05D2500 ME | 9-18 | +/-5 | +/-2500 | 2604 | 40 | 80 | 1000 |
| EP9-18-12D1250 ME | 9-18 | +/-12 | +/-1250 | 3125 | 40 | 80 | 1000 |
| EP9-18-15D1000 ME | 9-18 | +/-15 | +/-1000 | 3125 | 38 | 80 | 1000 |
| EP9-18-05S12D ME | 9-18 | +5,+/-12 | 3500,+/-310 | 2598 | 40 | 80 | 1000 |
| EP9-18-05S15D ME | 9-18 | +5,+/-15 | 3500,+/-250 | 2604 | 40 | 80 | 1000 |
| EP18-36-05S5000 ME | 18-36 | 5 | 5000 | 1302 | 20 | 80 | 1000 |
| EP18-36-09S3333 ME | 18-36 | 9 | 3333 | 1470 | 20 | 85 | 1000 |
| EP18-36-12S2500 ME | 18-36 | 12 | 2500 | 1470 | 18 | 85 | 1000 |
| EP18-36-15S2000 ME | 18-36 | 15 | 2000 | 1470 | 18 | 85 | 1000 |
| EP18-36-24S1250 ME | 18-36 | 24 | 1250 | 1453 | 16 | 86 | 1000 |
| EP18-36-05D2500 ME | 18-36 | +/-5 | +/-2500 | 1302 | 20 | 80 | 1000 |
| EP18-36-12D1250 ME | 18-36 | +/-12 | +/-1250 | 1470 | 18 | 85 | 1000 |
| EP18-36-15D1000 ME | 18-36 | +/-15 | +/-1000 | 1470 | 18 | 85 | 1000 |
| EP18-36-05S12D ME | 18-36 | +5,+/-12 | 3500,+/-310 | 1267 | 18 | 82 | 1000 |
| EP18-36-05S15D ME | 18-36 | +5,+/-15 | 3500,+/-250 | 1270 | 18 | 82 | 1000 |
| EP36-72-05S5000 ME | 36-72 | 5 | 5000 | 651 | 10 | 80 | 1000 |
| EP36-72-09S3333 ME | 36-72 | 9 | 3333 | 762 | 10 | 82 | 1000 |
| EP36-72-12S2500 ME | 36-72 | 12 | 2500 | 762 | 9 | 82 | 1000 |
| EP36-72-15S2000 ME | 36-72 | 15 | 2000 | 762 | 9 | 82 | 1000 |
| EP36-72-24S1250 ME | 36-72 | 24 | 1250 | 753 | 8 | 83 | 1000 |
| EP36-72-05D2500 ME | 36-72 | +/-5 | +/-2500 | 651 | 10 | 80 | 1000 |
| EP36-72-12D1250 ME | 36-72 | +/-12 | +/-1250 | 762 | 9 | 82 | 1000 |
| EP36-72-15D1000 ME | 36-72 | +/-15 | +/-1000 | 762 | 9 | 82 | 1000 |
| EP36-72-05S12D ME | 36-72 | +5,+/-12 | 3500,+/-310 | 634 | 9 | 82 | 1000 |
| EP36-72-05S15D ME | 36-72 | +5,+/-15 | 3500,+/-250 | 635 | 9 | 82 | 1000 |

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

**Footnotes:** [1] Nominal Input Voltage [2] Nominal Input Voltage, Full Load

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**30W Wide Input Range**
**DC-DC Converter 2" x 2"x 0,64"**

# Selection Guide 4:1 25W-30W Output

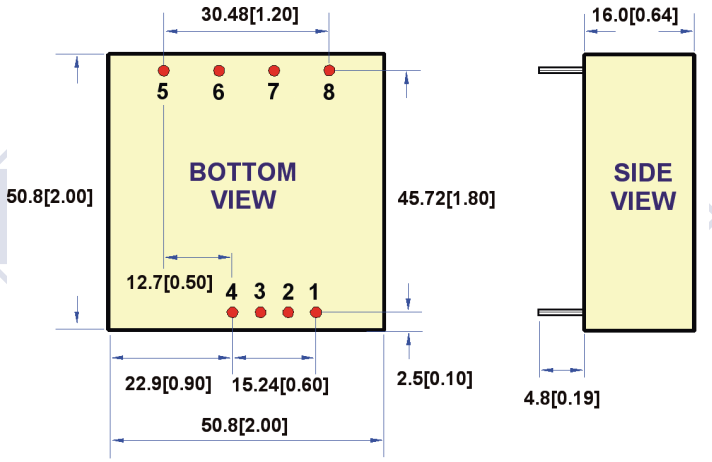
| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT[1] CURRENT(mA) FULL LOAD | INPUT[1] CURRENT(mA) NO LOAD | EFF (%)[2] | ISOLATION (VDC) |
|---|---|---|---|---|---|---|---|
| EP18-72-05S5000 ME | 18-72 | 5 | 5000 | 1302 | 20 | 80 | 1000 |

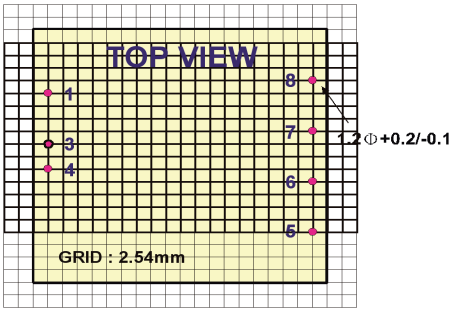
Note: Other input to output voltages may be available. Please contact factory.

# Mechanical Dimensions & Recommended Footprint Details

| PIN | SINGLE | DUAL | TRIPLE |
|---|---|---|---|
| 1 | Remote On/Off | | |
| 2 | No Pin | | |
| 3 | -Vin | -Vin | -Vin |
| 4 | +Vin | +Vin | +Vin |
| 5 | NC | +Vout | +Aux. out |
| 6 | +Vout | Common | +5V out |
| 7 | -Vout | -Vout | Common |
| 8 | TRIM | TRIM | -Aux. out |

All dimensions are in mm (inches)




**Remote On/Off Control**

| | | | |
|---|---|---|---|
| Control Input | PIN1 | Control Common | PIN3 |
| Control Voltage | | Converter Shutdown Idle Current | 10mA |
| ON | >+2.5VDC or Open Circuit | Logic | CMOS or |
| OFF | <+0.8VDC or Jumper to PIN3 | Compatibility | Open Collector TTL |

**Footnotes:** [1] Nominal Input Voltage [2] Nominal Input Voltage, Full Load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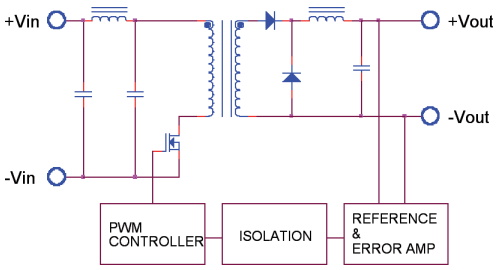
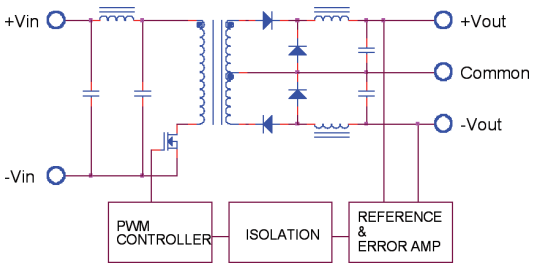
## Simplified Schematic

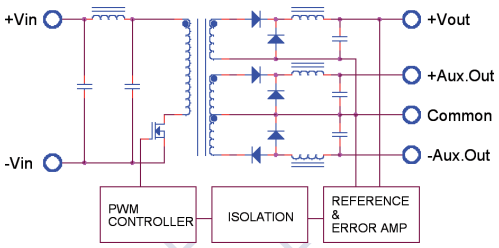
### Single Output




### Dual Output




### Triple Output

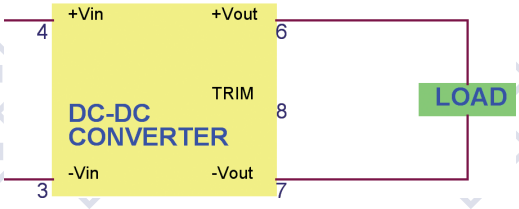


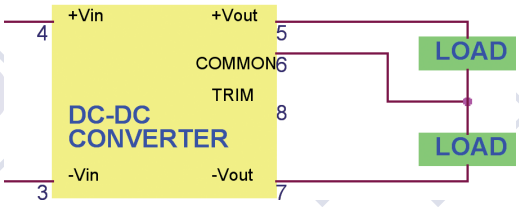

## Typical Applications

### Single Output

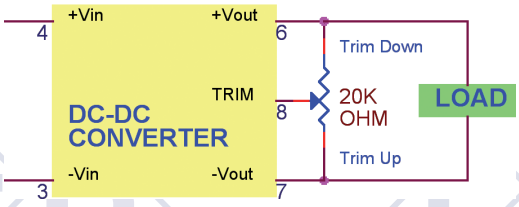
### Dual Output

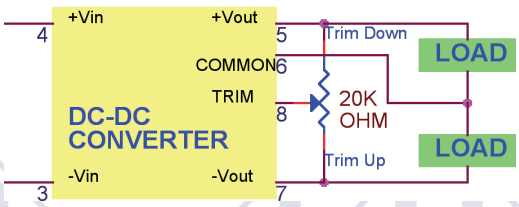
#### Fixed Voltage Output




#### Trim Connections Using A Trimpot

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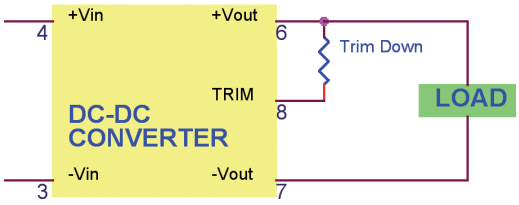
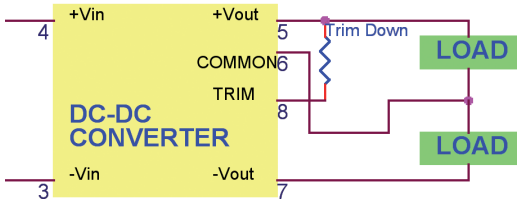
## Typical Applications

### Single Output

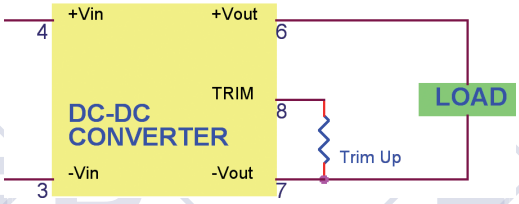
#### Fixed-Value Trim Down Resistor

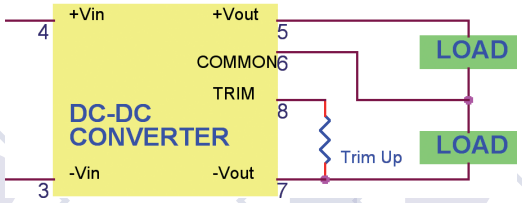



### Dual Output



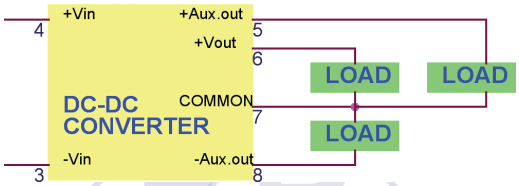

#### Fixed-Value Trim Up Resistor




### Triple Output

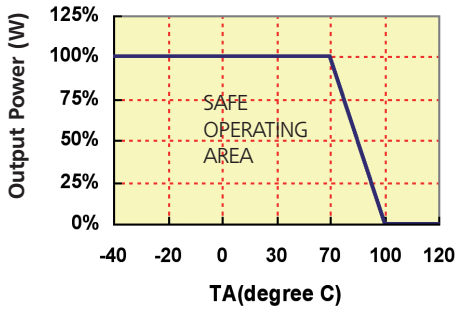
#### Fixed Voltage Output



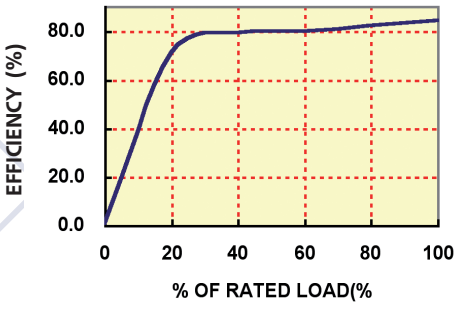

## Typical Performance Curves

Specifications typical at ta=25 OC, nominal input voltage, rated output current unless otherwise specified.

### Temperature Derating




### Output Load vs Efficiency

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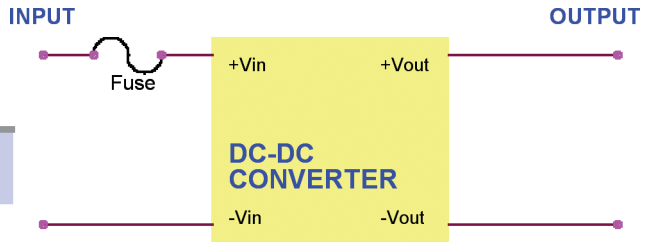
## Input Fuse Selection Guide

| 9-18V Input Voltage(VDC) | 18-36V or 18-72V Input Voltage(VDC) | 36-72V Input Voltage(VDC) |
|---|---|---|
| 6000mA Slow-Blow Type | 3000mA Slow-Blow Type | 1500mA Slow-Blow Type |




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

## EP ME Series Application Notes

**External Capacitance Requirements:**
No external capacitance is required for operation of the EP series.
No external capacitance is required for operation of the EP ME series.
To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 220KHz is required.
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.
Additional output capacitance may be added for increased filtering, but should not exceed 2200uF.
We Can Offer EMC-Filter According To EN55011/22 Class B.

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

**Remote ON/OFF:**
The remote ON/OFF pin may be left floating if this function is not use. It is recommended to drive this pin with an open collector arrangement or a relay contact. When the ON/OFF pin is pulled low with respect to the –Vin , the converter is placed in a low power drain state.

**Output TRIM:**
The TRIM pin may be used to adjust the output +/-10% from the nominal setting .this function allows adjustment for voltage drops in the system wiring. If the TRIM function is not required the pin may be left floating.

Spezifikationen können jederzeit ohne Vorankündigung geändert werden.