Electronic Products
Elektronisches Knowhow aus einer Hand

10W Wide Input Range
DC-DC Converter **2" x 2"**

Features:

- **10W DIL Package**
- **4.5-9V,9-18V,18-36V,36-72V Wide Input Range**
- **Short Circuit Protection**
- **Low Cost**
- **No External Components Required**
- **Regulated Output**
- **Typical Efficiency 80%**
- **100% Burned In**
- **Industry Standard Package**
- **MTBF > 700,000 Hours**

Specifications:

Output Specifications	Voltage Setpoint Accuracy	+/-2% max
	Temperature Coefficient	+/-0.05%/ °C
	Ripple & Noise (20MHz BW)[1]	100mVp-p max
	Line Regulation[2]	+/-0.2% max
	Load Regulation[3]	+/-0.2% max
	Minimum Load	10% of Full Load
	Short Circuit Protection	Continuous
	Short Circuit Restart	Automatic
	Over Load Protection	180% Typ
	Transient Response[4]	200uS max
Input Specifications	Input Voltage Range	2:1 or 4:1 Input Range
	Input Filter	Pi Network
	Protection	Fuse Recommended
Environmental Specifications	Operating Temperature	-25 OC to +71 °C
	Storage Temperature	-55 OC to +125 °C
	Humidity	95% max
	Cooling	Free-Air Convection
General Specifications	Efficiency	70% min
	Isolation Voltage[5]	1000 VDC min
	Isolation Resistance	10^9 ohms min
	Isolation Capacitance	500pF max
	Switching Frequency	150 KHz min
	MTBF[6]	700,000 Hours
	Weight	60.0g Typ
	Case Material	Six-Side Shielded Case
	Case Size	50.8mm*50.8mm*11mm
	Potting Material	Epoxy(UL94-V0)
	Conducted Emissions	EN55022 Class A
	Radiated Emissions	EN55022 Class A

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.

R. Nafe – Electronic Products
Mitterfeldstrasse 5
D-83527 Haag
Tel. : +49/(0) 80 72/37 677-20
Fax : +49/(0) 80 72/37 677-70
E-mail: info@electronic-products.com
Internet: www.electronic-products.com

Selection Guide 2:1 10W Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[1] CURRENT(mA) FULL LOAD	NO LOAD	EFF (%)[2]	ISOLATION (VDC)
EP4.5-09-055S2000LE	4.5-9	5	2000	2857	100	70	1000
EP4.5-09-12S830LE	4.5-9	12	830	2777	100	72	1000
EP4.5-15S670LE	4.5-9	15	670	2777	100	72	1000
EP9-18-05S2000LE	9-18	5	2000	1068	30	78	1000
EP9-18-12S830LE	9-18	12	830	1040	30	80	1000
EP9-18-15S670LE	9-18	15	670	1020	28	81	1000
EP9-18-24S416LE	9-18	24	416	1020	28	82	1000
EP9-18-05D1000LE	9-18	+/-5	+/-1000	1068	30	78	1000
EP9-18-12D416LE	9-18	+/-12	+/-416	1029	30	81	1000
EP9-18-15D333LE	9-18	+/-15	+/-333	1020	28	82	1000
EP9-18-24D208LE	9-18	+/-24	+/-208	1052	28	79	1000
EP16-36-05S2000LE	16-36	5	2000	527	18	79	1000
EP16-36-12S830LE	16-36	12	830	508	18	82	1000
EP16-36-15S670LE	16-36	15	670	502	18	83	1000
EP16-36-24S416LE	16-36	24	416	502	18	83	1000
EP16-36-05D1000LE	16-36	+/-5	+/-1000	527	20	79	1000
EP16-36-12D416LE	16-36	+/-12	+/-416	508	18	82	1000
EP16-36-15D333LE	16-36	+/-15	+/-333	510	18	82	1000
EP16-36-24D208LE	16-36	+/-24	+/-208	520	20	80	1000
EP36-72-05S2000LE	36-72	5	2000	264	10	79	1000
EP36-72-12S830LE	36-72	12	830	254	9	82	1000
EP36-72-15S670LE	36-72	15	670	254	9	82	1000
EP36-72-24S416LE	36-72	24	416	254	9	82	1000
EP36-72-05D1000LE	36-72	+/-5	+/-1000	264	10	9	1000
EP36-72-12D416LE	36-72	+/-12	+/-416	254	9	82	1000
EP36-72-15D333LE	36-72	+/-15	+/-333	254	9	82	1000
EP36-72-24D208LE	36-72	+/-24	+/-208	254	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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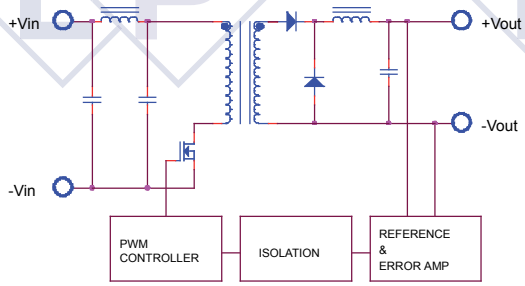
Selection Guide 4:1 10W Output

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[1] CURRENT(mA) FULL LOAD	NO LOAD	EFF (%)[2]	ISOLATION (VDC)
EP9-36-05S2000LE	9-36	5	2000	1075	30	78	1000
EP9-36-12S830LE	9-36	12	830	1046	30	80	1000
EP9-36-125S670LE	9-36	15	670	1025	28	81	1000
EP9-36-24S416LE	9-36	24	416	1020	28	82	1000
EP9-36-05D1000LE	9-36	+/-5	+/-1000	1076	30	77	1000
EP9-36-12D416LE	9-36	+/-12	+/-416	1032	30	81	1000
EP9-36-15D333LE	9-36	+/-15	+/-333	1035	28	81	1000
EP9-36-24D208LE	9-36	+/-24	+/-208	1052	28	79	1000
EP18-72-05S2000LE	18-72	5	2000	527	18	79	1000
EP18-72-12S830LE	18-72	12	830	508	18	82	1000
EP18-72-15S670LE	18-72	15	670	512	18	81	1000
EP18-72-24S416LE	18-72	24	416	512	18	81	1000
EP18-72-05D1000LE	18-72	+/-5	+/-1000	527	20	79	1000
EP18-72-12D416LE	18-72	+/-12	+/-416	513	18	81	1000
EP18-72-15D333LE	18-72	+/-15	+/-333	513	18	81	1000

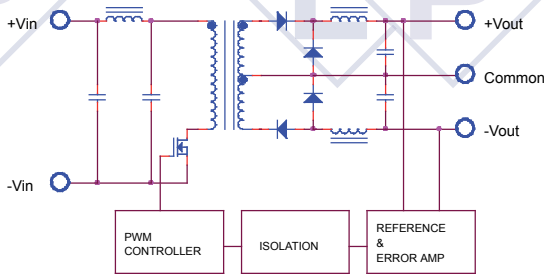
Note: Other input to output voltages may be available. Please contact factory.

Simplified Schematic

Single Output



Dual Output



Footnotes: 1 Nominal Input Voltage
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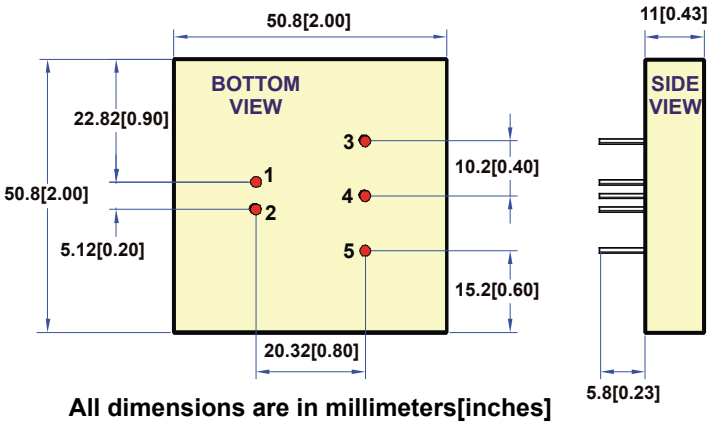
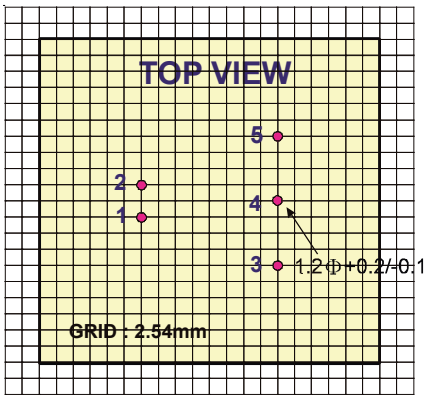
Mechanical Dimensions & Recommended Footprint Details

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	No Pin	Common
5	-Vout	-Vout

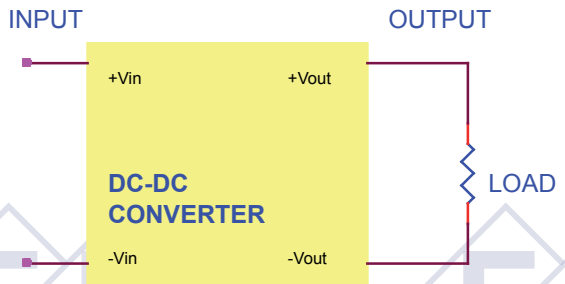


All dimensions are in millimeters[inches]

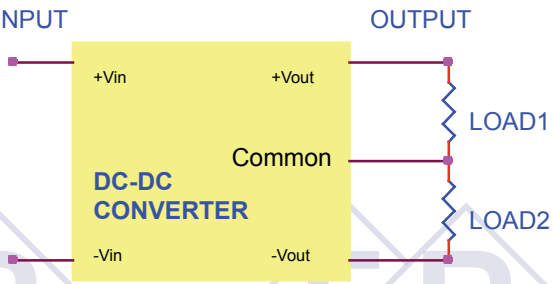


Typical Applications

Single Output



Dual Output



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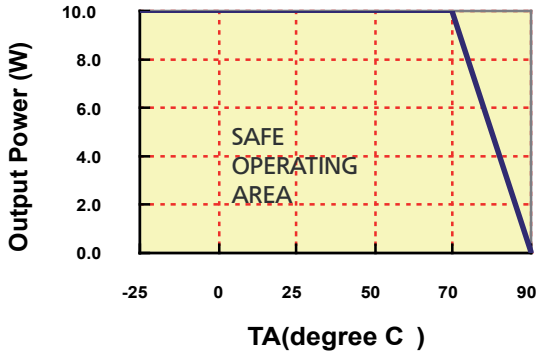
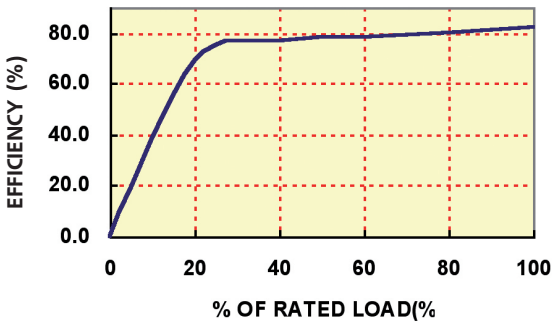
Typical Performance Curves

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

Temperature Derating

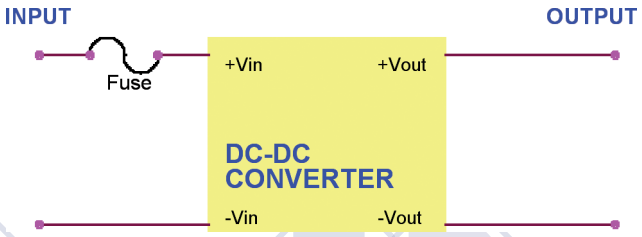


Output Load vs Efficiency



Input Fuse Selection Guide

4.5-9V Input Voltage(VDC)	9-18 or 9-36V Input Voltage(VDC)	16-36V or 18-72V Input Voltage(VDC)	36-72V Input Voltage(VDC)
5000mA Slow-Blow Type	1800mA Slow-Blow Type	1200mA Slow-Blow Type	450mA Slow-Blow Type



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

EP-LE SERIES APPLICATION NOTES

External Capacitance Requirements:
No external capacitance is required for operation of the EP-LE 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 1000uF.

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

Spezifikationen können jederzeit ohne Vorankündigung geändert werden.

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