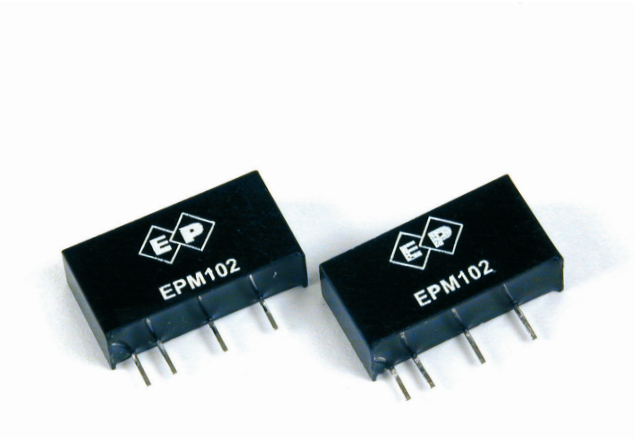
Nafe
Electronic-Products

1W Unregulated DC-DC Converter

SIL 7

Features:

1000 VDC ISOLATION
EFFICIENCY UP TO 83%
INTERNAL SMD TECHNOLOGY
LOW COST
NO HEATSINK REQUIRED
1W UNREGULATED OUTPUT POWER
SINGLE IN LINE PACKAGE
100% BURNED IN
MTBF > 2,000,000 HOURS



Specifications:

Output Specifications	Voltage Setpoint Accuracy	+/-2% max
	Temperature Coefficient	+/-0.03%/ °C
	Ripple & Noise (20MHz BW)	100mVp-p max
	Line Regulation[1]	+/-1.2% max
	Load Regulation[2]	+/-8% max
	Short Circuit Protection	Momentary
Input Specifications	Input Voltage Range	+/-10% max
	Input Filter	Capacitor Type
Environmental Specifications	Operating Temperature	-25 °C to +71 °C
	Storage Temperature	-55 °C to +125 °C
	Cooling	Free-Air Convection
General Specifications	Efficiency	70%-83%
	Isolation Voltage[3]	1000 VDC min
	Isolation Resistance	10^9 ohms min
	Switching Frequency	100 KHz min
	Isolation Capacitance	80pF max
	MTBF	2,000,000 Hours
	Weight	2.1g Typ
	Case Material	Non-Conductive Plastic
	Case Size	19.6mm*6.1mm*10.2mm 19.6mm*7.1mm*10.2mm

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

Footnotes:
1 Line Regulation is for a 1.0% change in input Voltage..
2 Load Regulation is for output load current change from 20% to 100%.
3 For 10 seconds

R. Nafe – Electronic Products
Mitterfeld Straße 5
D-83527 Haag/Winden
Tel.: +49/(0) 80 72/37 89-12
Fax : +49/(0) 80 72/37 89-99
E-mail: info@electronic-products.com
Internet: www.electronic-products.com

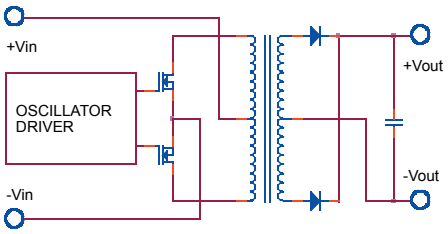
Selection Guide 1W 1000VDC Isolation

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT CURRENT(mA) FULL LOAD	INPUT CURRENT(mA) NO LOAD	EFF (%)	ISOLATION (VDC)	PACKAGE
EPM 101(A or B)	5	3.3	300	274	21	73	1000	A or B
EPM 102(A or B or E)	5	5	200	274	21	73	1000	A or B or E
EPM 103(A or B or E)	5	9	111	257	25	78	1000	A or B or E
EPM 104(A or B or E)	5	12	84	253	26	79	1000	A or B or E
EPM 105(A or B or E)	5	15	67	253	28	79	1000	A or B or E
EPM 106(A or B or E)	5	+/-5	+/-100	274	21	73	1000	A or B or E
EPM 107(A or B or E)	5	+/-9	+/-56	262	28	78	1000	A or B or E
EPM 108(A or B or E)	5	+/-12	+/-42	253	28	79	1000	A or B or E
EPM 109(A or B or E)	5	+/-15	+/-34	253	28	79	1000	A or B or E
EPM 111(A or B)	12	3.3	300	112	11	74	1000	A or B
EPM 112(A or B or E)	12	5	200	112	11	74	1000	A or B or E
EPM 113(A or B or E)	12	9	111	107	11	78	1000	A or B or E
EPM 114(A or B or E)	12	12	84	102	10	82	1000	A or B or E
EPM 115(A or B or E)	12	15	67	102	12	82	1000	A or B or E
EPM 116(A or B or E)	12	+/-5	+/-100	112	11	74	1000	A or B or E
EPM 118(A or B or E)	12	+/-12	+/-42	105	13	79	1000	A or B or E
EPM 119(A or B or E)	12	+/-15	+/-34	101	10	83	1000	A or B or E
EPM 121	24	3.3	300	57	9	73	1000	C
EPM 122	24	5	200	57	9	73	1000	C
EPM 123	24	9	111	56	8	75	1000	C
EPM 124	24	12	84	54	8	77	1000	C
EPM 125	24	15	67	52	7	80	1000	C
EPM 126	24	+/-5	+/-100	57	9	73	1000	C
EPM 128	24	+/-12	+/-42	54	8	77	1000	C
EPM 129	24	+/-15	+/-34	52	7	80	1000	C

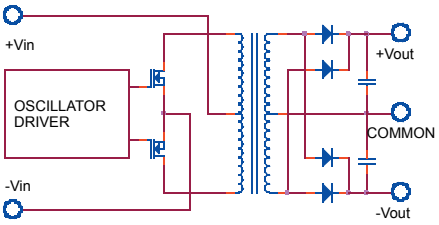
Note: Other input to output voltages may be available. Please contact factory.

Simplified Schematic

Single Output



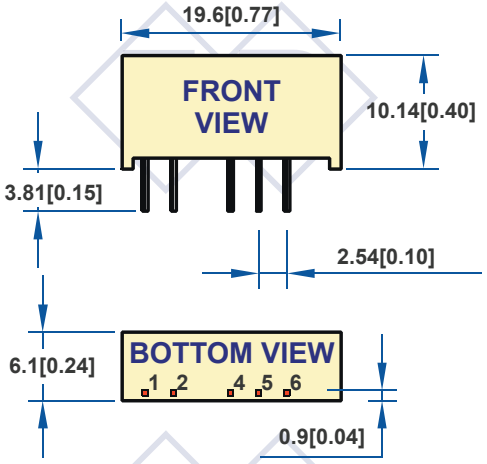
Dual Output



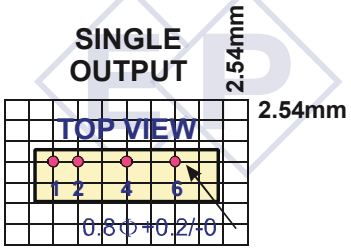
Mechanical Dimensions & Recommended Footprint Details

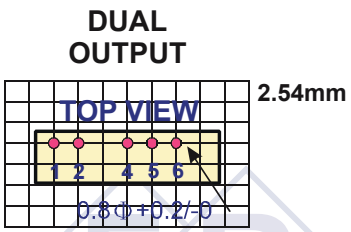
Package A

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	NP	Common
6	+Vout	+Vout



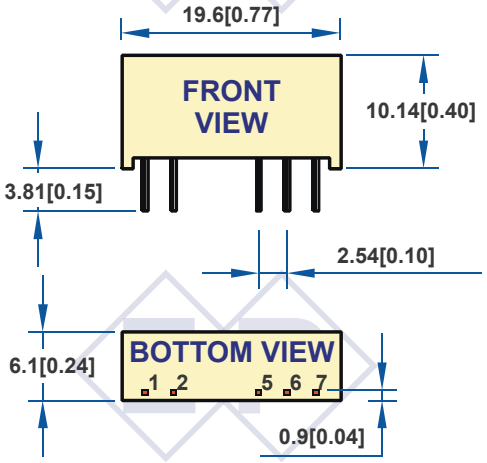
All dimensions are in mm[inches]



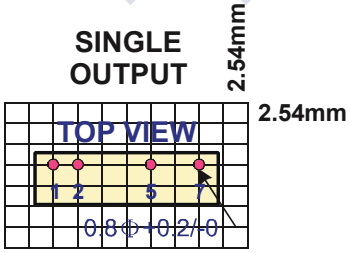


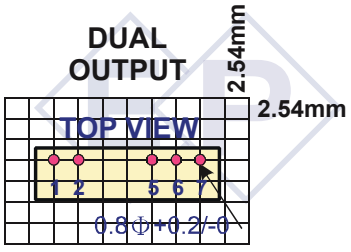
Package B

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	NP	Common
7	+Vout	+Vout



All dimensions are in mm[inches]



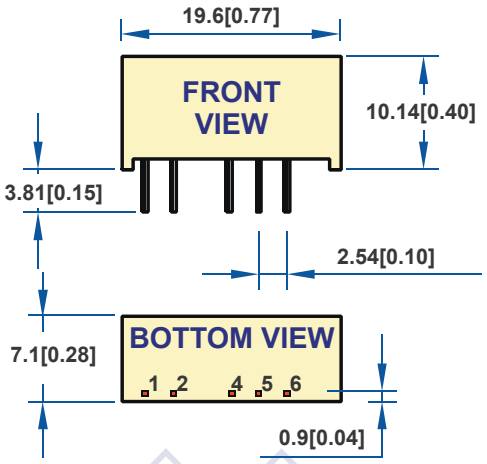


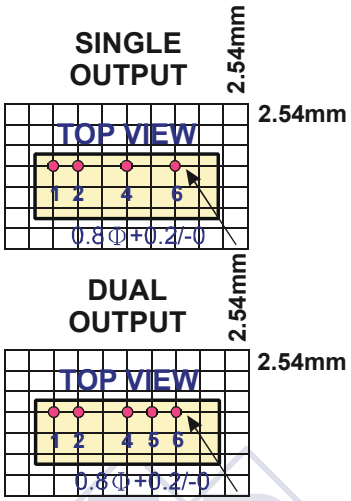
R. Nafe – Electronic Products
Mitterfeld Straße 5
D-83527 Haag/Winden
Tel.: +49/(0) 80 72/37 89-12
Fax : +49/(0) 80 72/37 89-99
E-mail: info@electronic-products.com
Internet: www.electronic-products.com

Mechanical Dimensions & Recommended Footprint Details

Package C

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	NP	Common
6	+Vout	+Vout

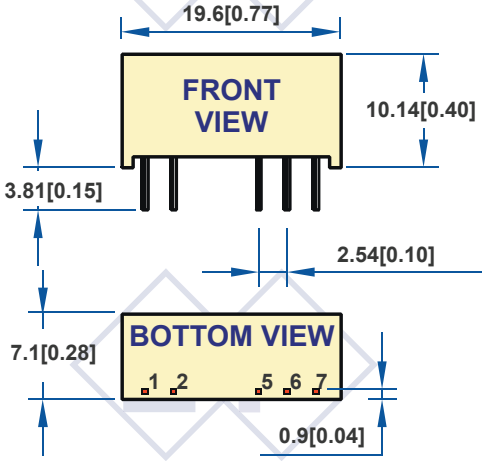


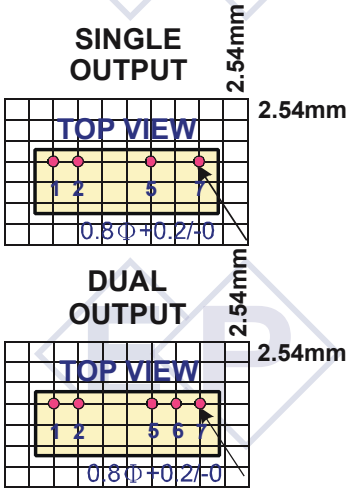


All dimensions are in mm[inches]

Package D

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	NP	Common
7	+Vout	+Vout



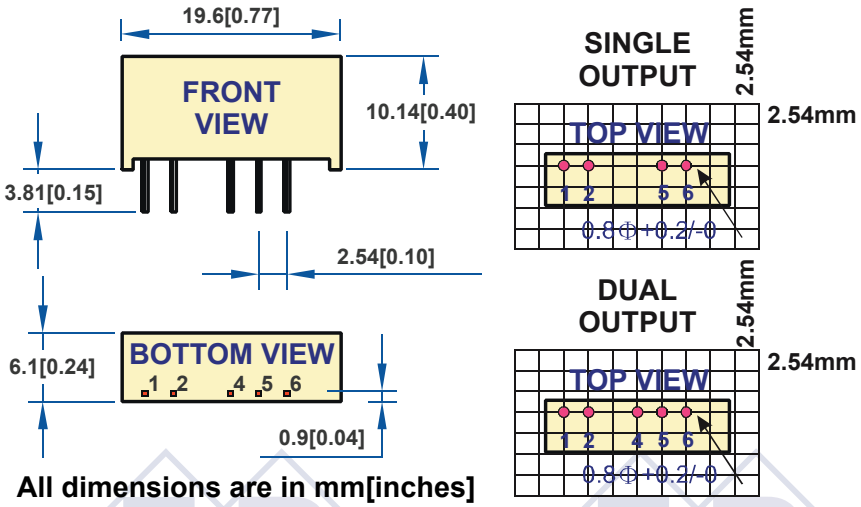


All dimensions are in mm[inches]

Mechanical Dimensions & Recommended Footprint Details

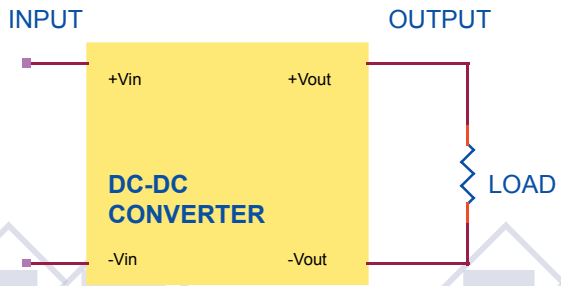
Package E

PIN	SINGLE	DUAL
1	+Vin	+Vin
2	-Vin	-Vin
4	NP	-Vout
5	-Vout	Common
6	+Vout	+Vout

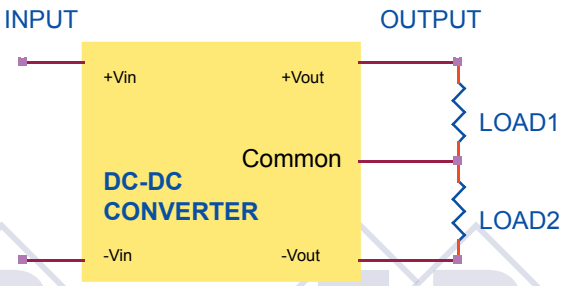


Typical Applications

Single Output



Dual Output

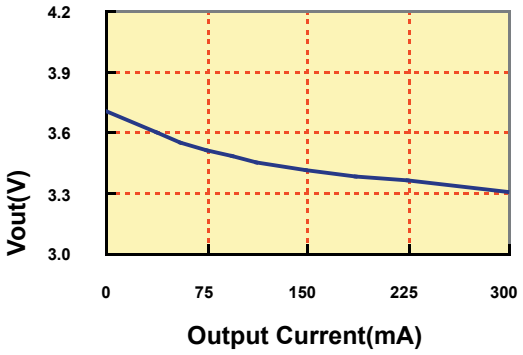


R. Nafe – Electronic Products
Mitterfeld Straße 5
D-83527 Haag/Winden
Tel.: +49/(0) 80 72/37 89-12
Fax : +49/(0) 80 72/37 89-99
E-mail: info@electronic-products.com
Internet: www.electronic-products.com

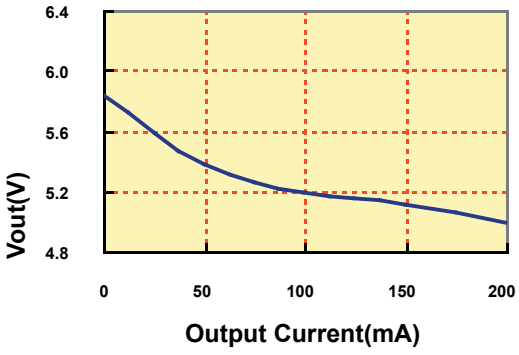
Temperature Derating

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

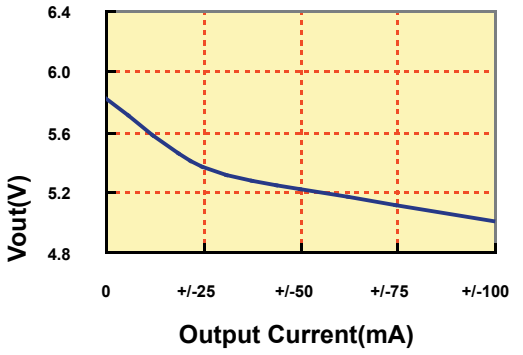
Vout vs Load (3.3Vout Models)



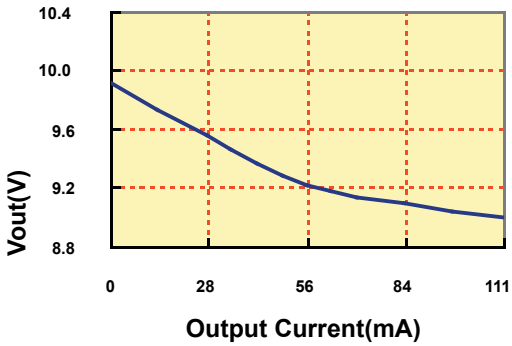
Vout vs Load (5Vout Models)



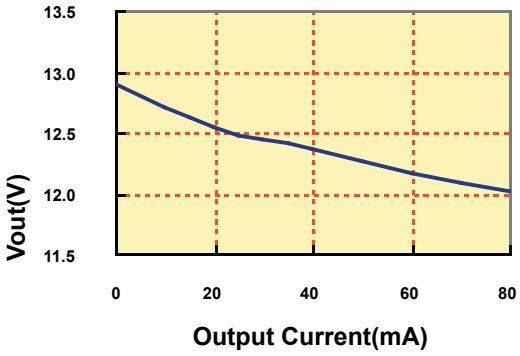
Vout vs Load (+/-5Vout Models)



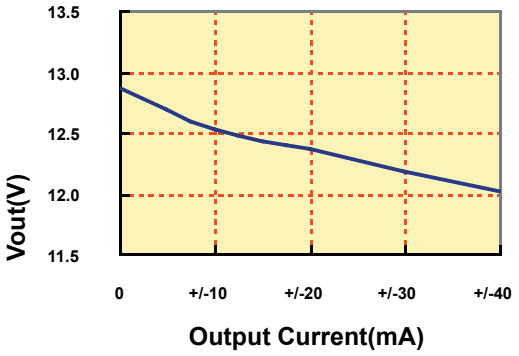
Vout vs Load (9Vout Models)



Vout vs Load (12Vout Models)



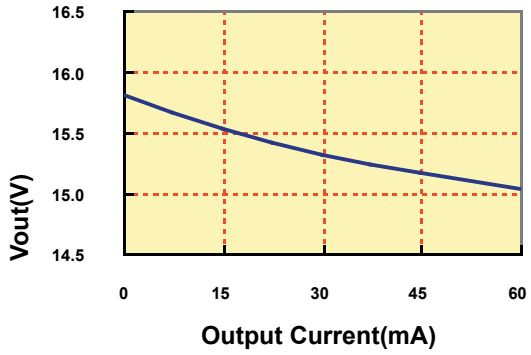
Vout vs Load (+/-12Vout Models)



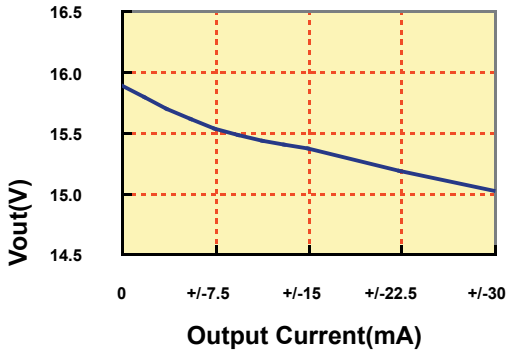
Temperature Derating

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

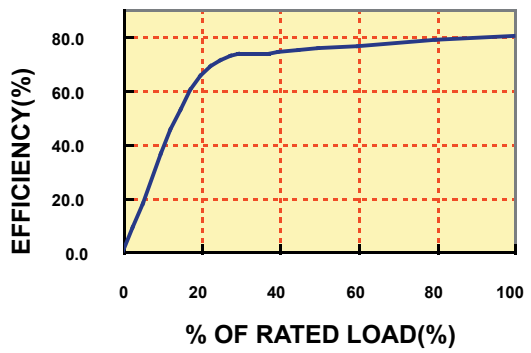
Vout vs Load (15Vout Models)



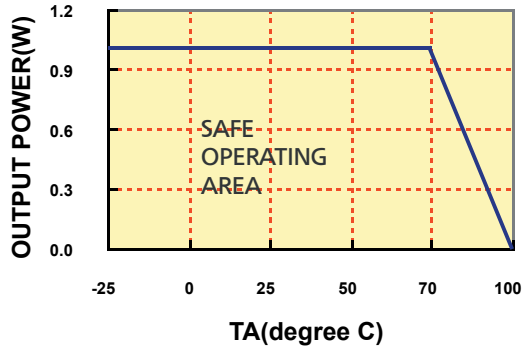
Vout vs Load (+/-15Vout Models)



Efficiency vs Load



Derating Curve



EPM SERIES APPLICATION NOTES

External Capacitance Requirements:
Output filtering is required for operation. A minimum of 10uF is needed. Output capacitance may be increased for additional filtering, not to exceed 220uF.
To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5ohm from DC to 250KHz is required.

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