EPM25-1V 30 W

30 Watt isolated DC-DC converter

Product features

- 30 Watt isolated DC-DC converter
- Input voltage: 9 Vdc - 36 Vdc
  18 Vdc - 75 Vdc
- Efficiency up to 91%
- Isolation voltage: 1.6 kVdc
- 1.0" x 1.0 " package
- Operating ambient temperature from -40 °C to +105 °C
- EMI class A without external circuit
- No minimum load required
- IEC62368-1/ EN55032&35 certified
- Remote On/OFF

Applications

- Computing/telecom
- Distributed power architectures
- Servers and workstations
- LAN / WAN applications
- Data processing applications
- Industrial IoT equipment, sensors
- Power supply, battery backup
- Wireless TX/RX modules
- Renewable energy products

Environmental compliance

RoHS

Ordering part number

EPM 25 36 1V 3R3 7R0 S

- Eaton converter
- Package type/size code
- Maximum rated input voltage
- Version code
- Output voltage (maximum, R=decimal point)
- Output current (maximum, in mA)
- S = single output, D = dual output

Powering Business Worldwide

Specifications

	Parameter	Conditions	Minimum	Typical	Maximum	Unit
Input	Input filter					

Specifications

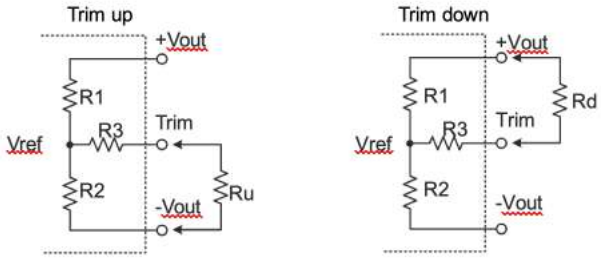
	Parameter	Conditions	Minimum	Typical	Maximum	Unit
	Isolation voltage					
Function						

Part number	Input voltage (Vdc)	Output voltage (Vdc)	Output current @ full load (mA)	Efficiency[1] minimum	Efficiency[1] typical	Capacitive load[2] maximum (µF)
EPM25361V-3R3-7R0S	9-36 Nominal 24	3.3	7000	87.50%	88.50%	10000
EPM25361V-05R-6R0S	9-36 Nominal 24	5	6000	88.00%	89.00%	7200
EPM25361V-12R-2R5S	9-36 Nominal 24	12	2500	89.00%	90.00%	1200
EPM25361V-15R-2R0S	9-36 Nominal 24	15	2000	89.50%	90.50%	1000
EPM25361V-24R-1R2S	9-36 Nominal 24	24	1250	89.50%	90.50%	380
EPM25361V-12R-1R2D	9-36 Nominal 24	±12	±1250	88.00%	89.00%	±750
EPM25361V-15R-1R0D	9-36 Nominal 24					

6000en-US/ang000

Application information

Single external output voltage trimming



Formula for trim resistor:

UP: $Ru=\frac{aR_2}{R_2-a}-R_3 \quad a=\frac{V_{ref}}{V_o'-V_{ref}}\cdot R_1$

DOWN: $Rd=\frac{bR_1}{R_1-b}-R_3 \quad b=\frac{V_o'-V_{ref}}{V_{ref}}\cdot R_2$

1. Ru, Rd is mean trim resistor, please check the formula.
2. a & b: user define parameter.
3. V_o' is mean trim up/down voltage.
4. Value for R1, R2, R3 and V_{ref}. Refer to the table below.

Output voltage	R1	R2	R3	Vref
3.3 V	16.6 kΩ	10 kΩ	52.3 kΩ	1.25 V
5 V	10.0 kΩ	10 kΩ	35.7 kΩ	2.5 V
12 V	38.0 kΩ	10 kΩ	48.7 kΩ	2.5 V
15 V	50.1 kΩ	10 kΩ	64.9 kΩ	2.5 V
24 V	86.0 kΩ	10 kΩ	73.2 kΩ	2.5 V

Trim up

3R3-7R0S

trim (%)	1	2	3	4	5	6	7	8	9	10
Vout (V)	3.333	3.366	3.399	3.432	3.465	3.498	3.531	3.564	3.597	3.63
Ru (kΩ)	2541.45	453.8	228.11	141.63	95.91	67.64	48.43	34.52	23.99	15.73

5R0-6R0S

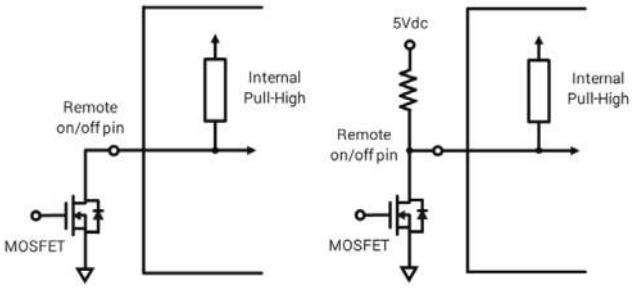
trim (%)	1	2	3	4	5	6	7	8	9	10
Vout (V)	5.05	5.1	5.15	5.2	5.25	5.3	5.35	5.4	5.45	5.5
Ru (kΩ)	464.3	214.3	130.97	89.3	64.3	47.63	35.73	26.8	19.86	14.3

12R-2R5S

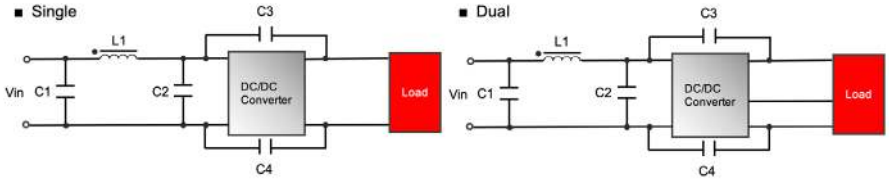
CTRL pin setting

Remote ON/OFF	DC-DC ON	Open or 3.5 ~ 15 VDC
	DC-DC OFF	Short or 0 ~ 1.2 VDC

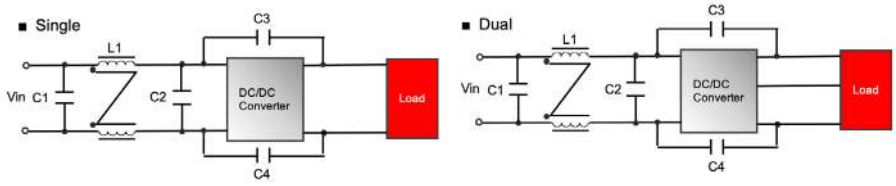
If not using CTRL function, please leave CTRL pin floating.
If using CTRL pin to control module to turn on and off; use either external circuit as shown below.



EMC filtering circuit

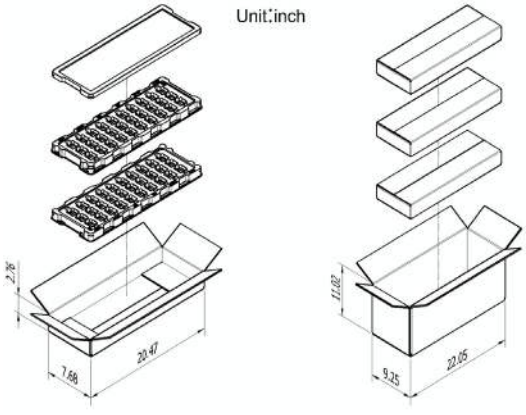


Class B	C1	C2	L1	C3	C4
24 Vin	4.7 µF	4.7 µF	10 µH	2200 pF	2200 pF



Class B	C1	C2	L1	C3	C4
48 Vin	4.7 µF	4.7 µF	Common mode choke K5B 32 µH	2200 pF	2200 pF

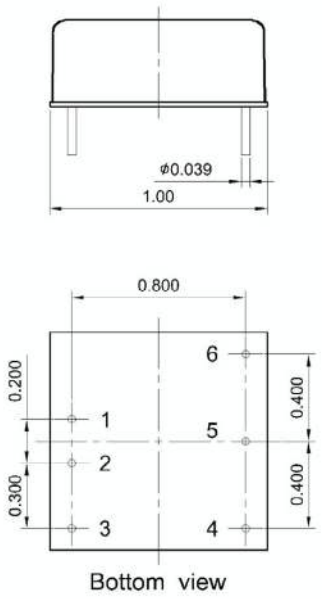
Packaging- Inches

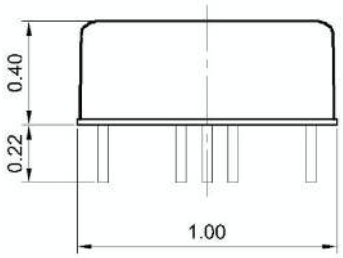


Box accomodates
2 tray 60 converters per box

Carton accomodates
3 boxes 180 converters per carton

Dimensions - inches

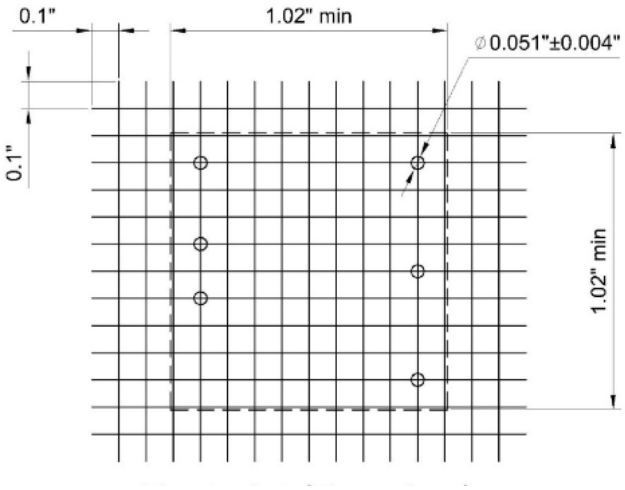




Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	CTRL	CTRL
4	-Vout	-Vout
5	Trim	Common
6	+Vout	+Vout

Unit: inch
PIN tolerance: ± 0.004
Tolerance: X.XX ± 0.02 X.XXX ± 0.01

Recommended PCB layout



Marking

WLY = lot code

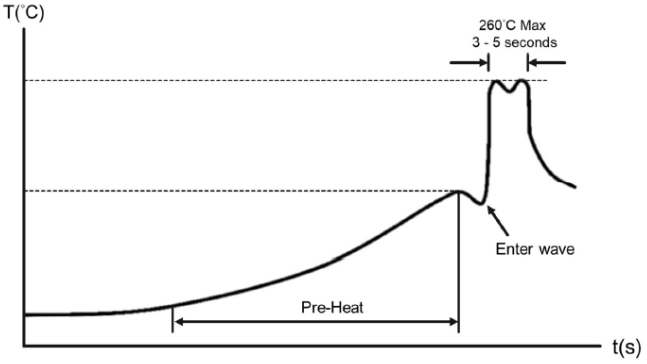
General information

Storage and handling

The shelf life will be a minimum of 36 months, when stored at the following conditions: < +40 °C, < 90% RH.

Wave solder profile

The wave solder profile is measured based on lead temperature. The recommended PCB pre-heat temperature is +80 °C to +100 °C, and the preheat rate of 1.5 to 2.5 °C/sec. The underside PCB temperature at the last pre-heat zone should be approximately +150 °C. The internal temperature of the solder parts should not exceed +210 °C. The duration of solder dwell time should be between 3 to 5 seconds, and not to exceed 10 seconds at a temperture of +260 °C maximum.



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