



# Non-isolated DC-DC converters for high-efficiency power supply designs



Eaton Power Modules (EPM) are non-isolated DC-DC converters available in two families; the EPM78Vx and EPM12V.

### Product description

Eaton Power Modules (EPM) are non-isolated DC-DC converters available in two families; the EPM78Vx and EPM12V. These products have higher efficiencies than popular linear regulators and offer a wide input voltage range, lower power consumption, and programmable features in a compact package. EPM has operating temperatures ranging from -40 °C up to +90 °C and complies with the EN62368 safety standard. Both families also offer short circuit protection to protect the module during overcurrent events.

### Features and benefits

- Wide input voltages up to 32 Vdc (EPM78Vx) and up to 14.4 Vdc (EPM12V)
- Higher conversion efficiencies up to 96% (EPM78Vx) and 91% (EPM12V)
- Programmable output voltage with remote ON/OFF features (EPM12V)
- Continuous short circuit protection safeguards against overcurrent events
- High operating temperature range for reliable performance in harsh environments
- Compliance with the EN62368 safety standard

\* Please refer to our [product datasheets](#) for more information about our EPM line and [engineering evaluation kits](#)



Powering Business Worldwide

## EPM12V1 Selection guide

Part number	Input voltage	Output voltage	Output current @ full load	Input current @ no load	Efficiency <sup>1</sup> typical	Capacitive load <sup>2</sup> maximum
EPM12V1-05R5-01R0P	3 - 14 Vdc 12 Vdc nominal	0.9 - 5.5 Vdc 5 Vdc nominal	1000 mA	15 mA	89.5%	200 µF

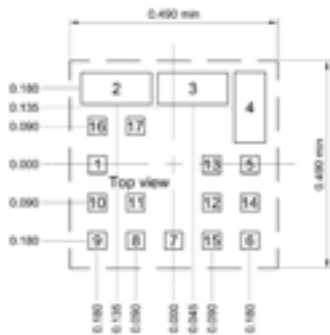
## EPM12V2 Selection guide

Part number	Input voltage	Output voltage	Output current @ full load	Input current @ no load	Efficiency <sup>1</sup> typical	Capacitive load <sup>2</sup> maximum	ON/OFF Logic
EPM12V2-05R5-12R0P	3 - 14.4 Vdc	0.6 - 5.5 Vdc	12 A	30 mA	91%	200 µF	Positive
EPM12V2-05R5-12R0N	3 - 14.4 Vdc	0.6 - 5.5 Vdc	12 A	30 mA	91%	200 µF	Negative

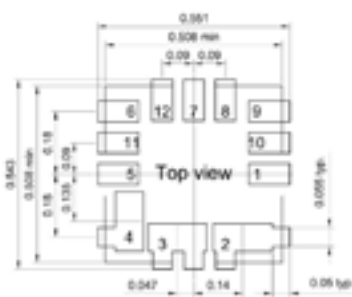
## EPM78Vx Selection guide

Part number	Input voltage	Output voltage	Output current @ full load	Input current @ no load	Efficiency (typical) <sup>1</sup> Vin minimum/ Vin maximum	Capacitive load <sup>2</sup> maximum
EPM78V1-01R8-01R0R	4.75 - 26 Vdc	1.8 Vdc	1000 mA	10 mA	86.0/77.5%	470 µF
EPM78V2-03R3-01R0R	4.75 - 32 Vdc	3.3 Vdc	1000 mA	12 mA	90.0/82.5%	470 µF
EPM78V2-05R0-01R0R	6.5 - 32 Vdc	5.0 Vdc	1000 mA	16 mA	93.0/86.0%	470 µF
EPM78V2-06R5-01R0R	8 - 32 Vdc	6.5 Vdc	1000 mA	20 mA	94.0/88.0%	470 µF
EPM78V2-12R0-01R0R	15 - 32 Vdc	12 Vdc	1000 mA	23 mA	95.0/92.0%	470 µF
EPM78V2-15R0-01R0R	18 - 32 Vdc	15 Vdc	1000 mA	25 mA	96.0/93.0%	330 µF

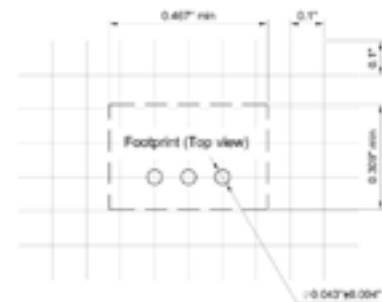
EPM12V2 pad layout



EPM12V1 pad layout



EPM78Vx pad layout



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