

DC-DC CONVERTER

Rev: 00, April 2015, www.variturn.com

5v, 12v, 15v - 30W



Key Features:

- 10 to 36 V input.
- Efficiency up to 94%
- Standard case J5 Package.
- Fixed frequency switching.
- Inhibit function.
- Non-isolated.
- Short circuit protection.
- Over Temperature Shutdown.
- -40° to +85°C operation.
- Compact in size.
- Soft start time of 4.1 ms typical.

Description:

VN30 Series DC/DC converter is an easy-to-use step-down DC-DC solution capable of driving up to 30W. These series of DC/DC converters are available in standard J5 package. The VN30 Series DC/DC converters can accept an input voltage rail between 18V and 36V and delivers a constant output voltage depending on model.

No external capacitors/ resistors required. VN30 Series DC/DC converter has reliable and robust design with following protection features: Output short circuit , Over Temperature Shutdown.

Applications:

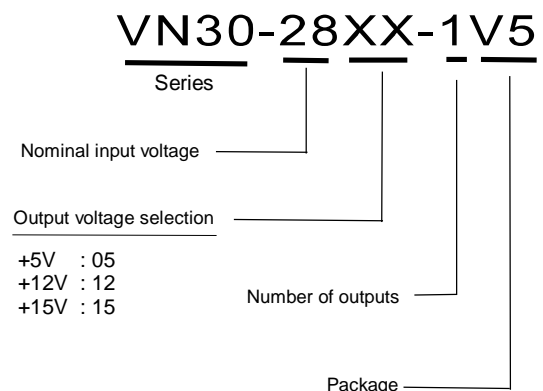
- Industrial power supplies.
- Telecommunication systems
- DC– DC Conversion.
- Point of Load Conversions from 24V.
- High Efficiency Point-Of-Load Regulation
- High thermal requirement applications.



Size : 2.72 x 1.35 x 0.505 inches

(69.09 x 34.29 x 12.83mm)

Model selection:



Inhibit function:

An inhibit is provided to allow a logic low input to shut down the converter. An open circuit on the inhibit pin allows disable operation. A connection between the inhibit pin and the input common (pin 10) disables the internal oscillator, shuts down the output.

	Voltage	VN30-28051-V5	VN30-2812-V5	VN30-2815-1V5
Logic low/ Open	0 to 0.7V	Output Disabled	Output Disabled	Output Disabled
Logic high	3.3 to 5V	Output Enabled	Output Enabled	Output Enabled

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Electrical Specifications:

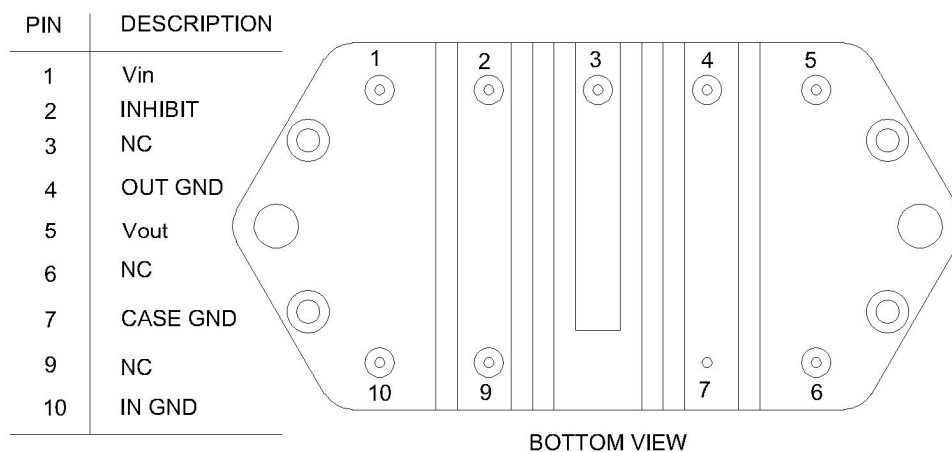
Parameter	Condition	VN30-2805-1V5			VN30-2812-1V5			VN30-2815-1V5			Units
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Input voltage	No load to full	10	28	36	16	28	36	18	28	36	VDC
Input current	No Load	—	25	50	—	20	30	—	20	30	mA
	Full Load	—	—	1310	—	—	1230	—	—	1230	mA
	Inhibit	—	—	5	—	—	5	—	—	5	mA
Output voltage		4.90	5.0	5.10	11.80	12	12.20	14.85	15	15.15	VDC
Output power	-40°C to +85°C	—	—	30	—	—	30	—	—	30	W
Output current		—	—	6.0	—	—	2.5	—	—	2.0	A
Output ripple		—	40	80	—	50	100	—	50	110	mVp-p
Efficiency		83	85	88	88	90	93	88	91	95	%
Line regulation	Min to Max Vin	—	7	25	—	10	40	—	10	40	mV
Load regulation	No load to full	—	5	25	—	10	40	—	10	40	mV
Start up delay	—	—	1.6	2	—	4.1	5	—	4.1	5	ms

Mechanical Specifications:

	Length (mm)	Width (mm)	Height (mm)
Overall specifications	68.15 ±0.2	34.18 ±0.1	12.82 ±0.1

Absolute Maximum ratings:

	VN30-28051V5	VN30-28121V5	VN30-28151V5
Input voltage	-0.3V to 40V	-0.3V to 42V	-0.3V to 42V
Output power	40 W	30 W	30 W
Output current	8 A	2.8 A	2.5 A
Storage temperature	-65°C to +150°C		



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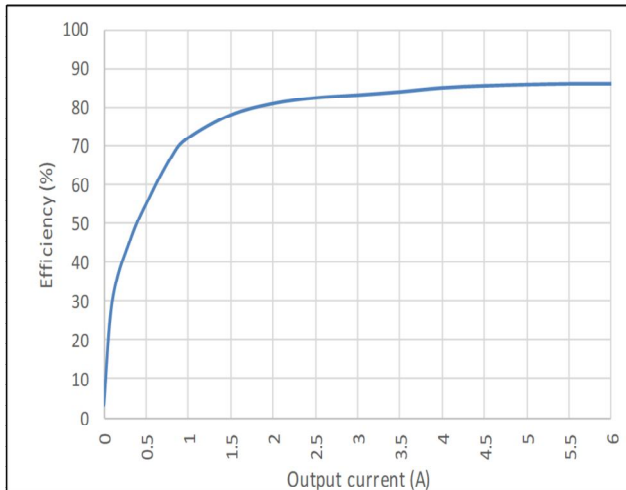
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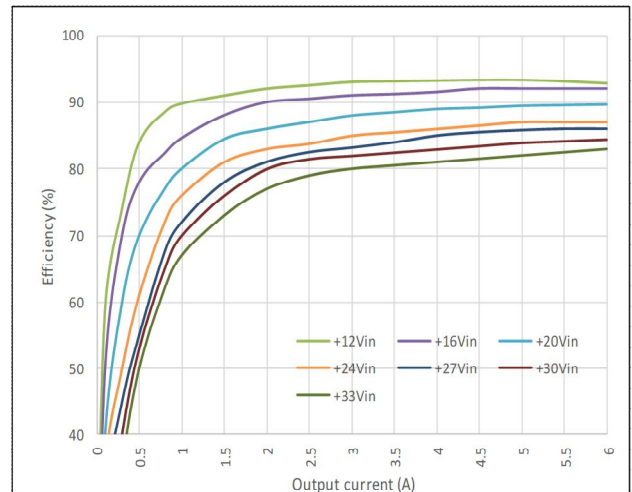
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Performance Graphs:

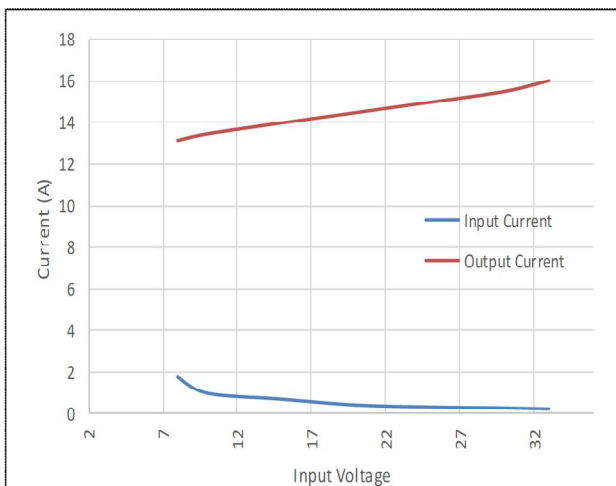
Efficiency: $V_{IN} = 27V$, $V_{OUT} = 5V$



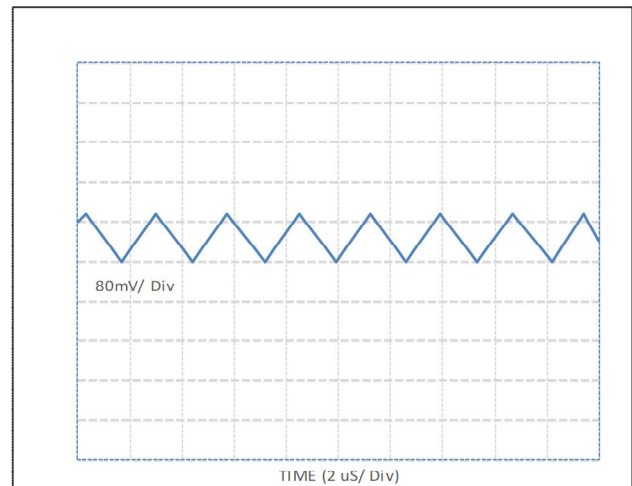
Efficiency: $V_{OUT} = 5V_{DC}$ @ $25^{\circ}C$



Short circuit current



12VIN, 5VOUT @ Full Load, BW = 20 MHz



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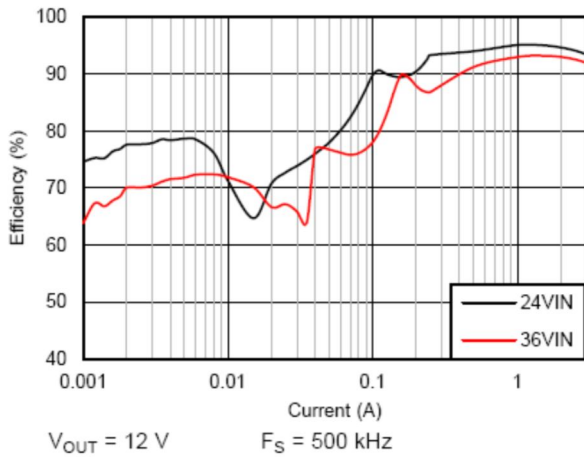
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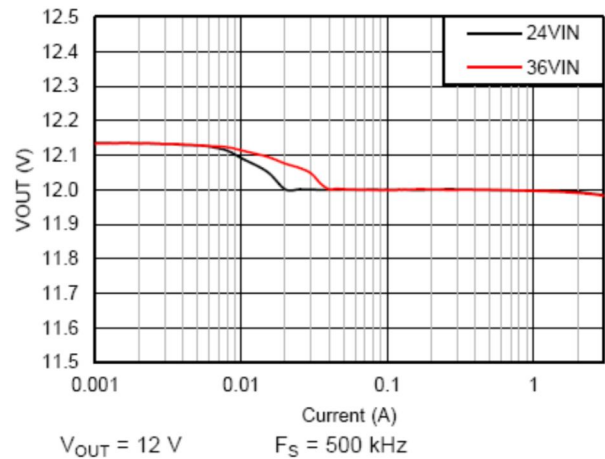
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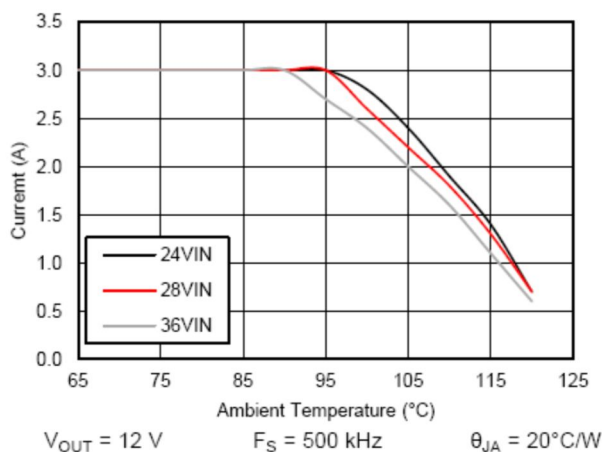
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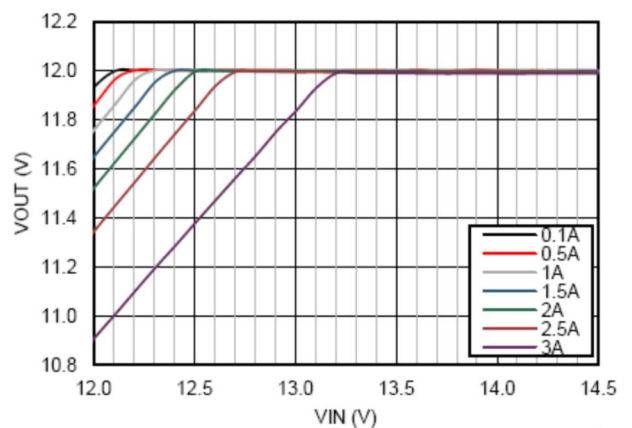
Output voltage regulation:



Derating curve:



Dropout curve:



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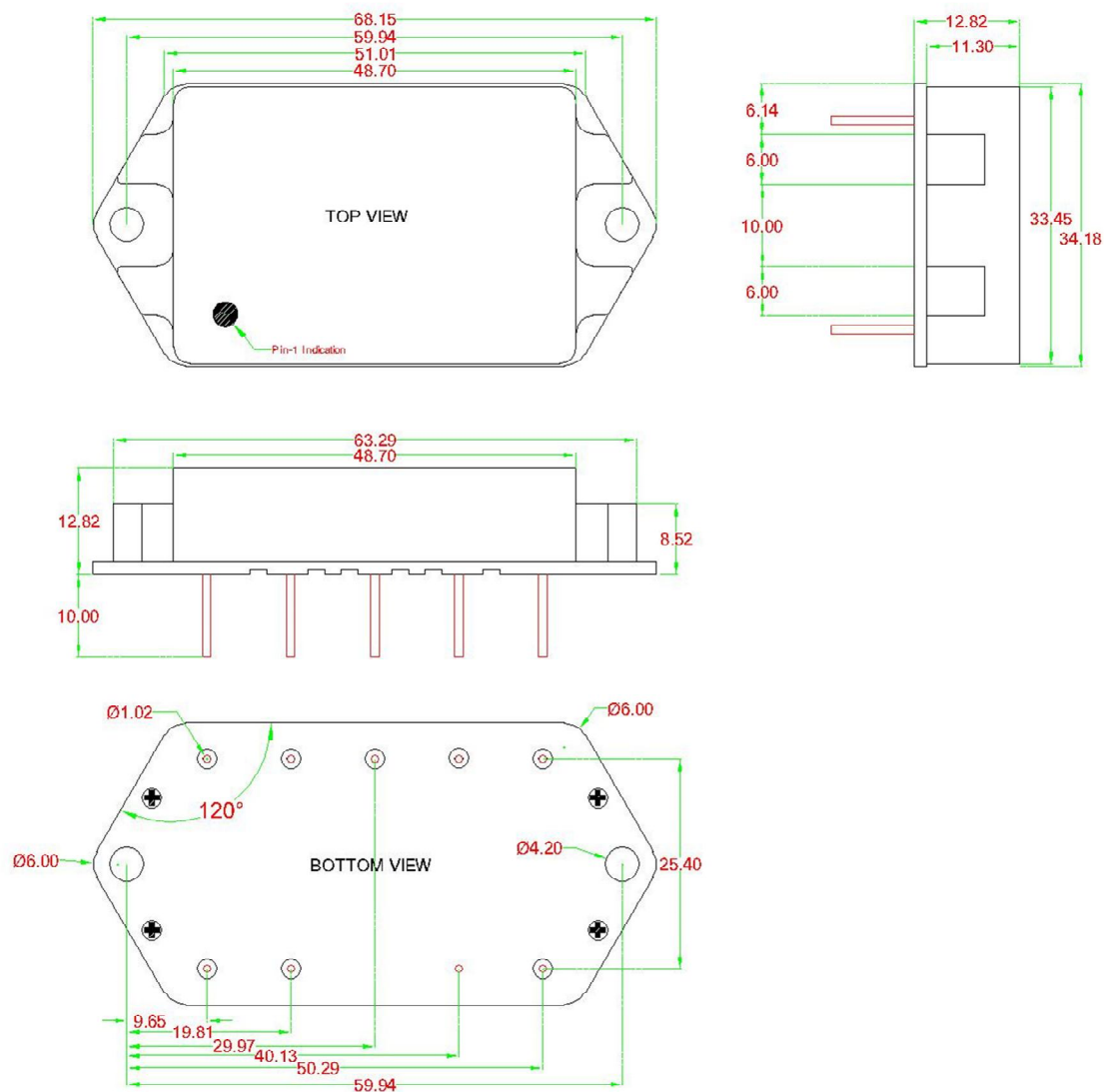
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Dimensions:



Note: 1. All dimensions are in mm, unless otherwise specified.

2. Tolerance: $\pm 0.1\text{mm}$.

3. Not to scale

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