

## 75W, 9 to 40V Input Non-Isolated DC-DC Buck Converter with Negative Output

<https://product.tdk.com/en/power/i6a>  
[www.emea.lambda.tdk.com/i6a](http://www.emea.lambda.tdk.com/i6a)



The i6A -Nxx series is part of the [i6A](#) family of non-isolated DC-DC converters designed to provide a negative output. It is ideal for creating additional negative output voltage rails from a single output 12V or 24V AC-DC or DC-DC power supply. The highly efficient i6A-Nxx series accepts a wide positive DC input and has a wide negative output adjustment range from -3.3V to -30V. It comes with negative or positive logic remote On-Off, remote sense and output trim in a compact 1/16th brick package.

Features	Benefits
• Up to 75W in a 1/16th Brick Pin-Out	• High Power Density, Less Board Area Needed
• Efficiency - Up to 94%	• Longer Battery Life / Less Power Consumed
• Wide -3.3 to -30 V Output Adjustment	• One Part Supports Multiple System Voltages
• Wide 9 to 40V Input Range	• Can Operate From Different DC Source Voltages
• Low Component Count With Minimal External Components	• Low Cost

Model Selector						
Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Positive Logic On/Off
<a href="#">i6A24008A033V-N00-R</a>	9 - 40	-3.3 to - 30	8	75	-	Yes
<a href="#">i6A24008A033V-N01-R</a>	9 - 40	-3.3 to - 30	8	75	Yes	-

Preferred model

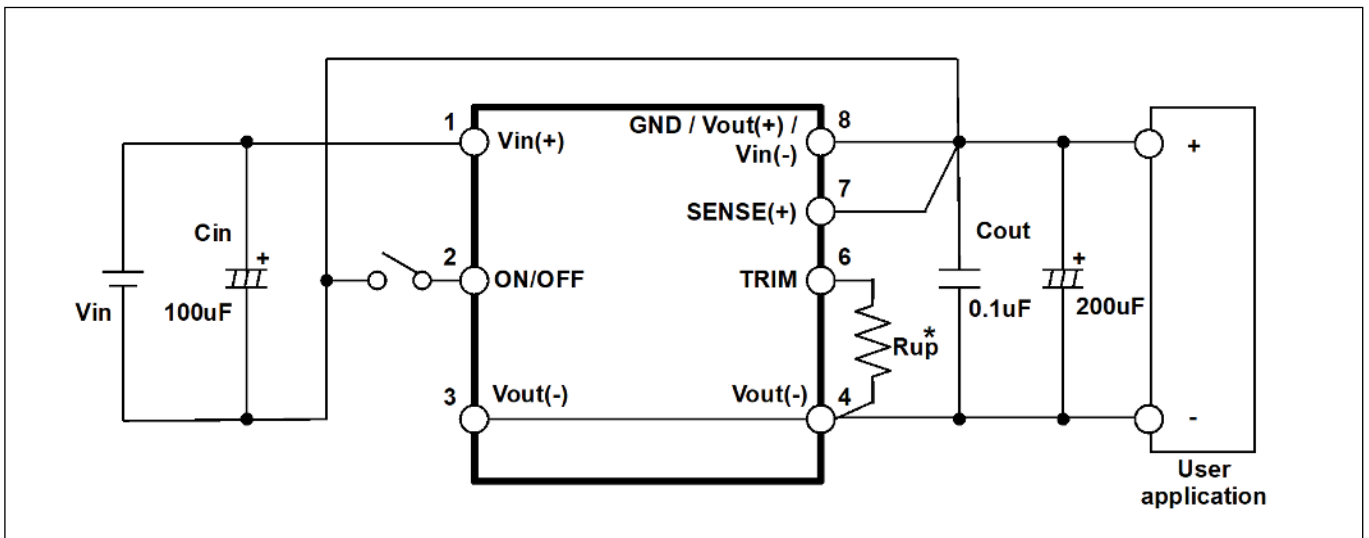
Related Products		
Type	Part Number	Description
DC-DC Buck Converter	<a href="#">i3A</a>	100W, Input 9-53V, Output 5-30V 4.5A or 3.3-16.5V 8A
DC-DC Buck Converter	<a href="#">i6A4W</a>	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	<a href="#">i6A24</a>	250W, Input 9-40V, Output 3.3-24V 14A
DC-DC Buck Converter	<a href="#">i7A</a>	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	<a href="#">i7C</a>	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	<a href="#">i6A14A-001-EVK-D2PN</a>	Evaluation kit with i6A24014A033V-001-R and i6A24008A033V-N01-R modules

Specification		
Model		i6A24008A033V-Nxx-R
<b>Input</b>		
Input Voltage Range	Vdc	9 - 40
Input Current (max)	A	15
Turn-ON Input Voltage	Vdc	8
Turn-OFF Input Voltage	Vdc	7 - 9
Efficiency	%	90 - 94
Safety Certifications and Markings	-	IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark and UKCA Mark
<b>Output</b>		
Output Voltage Tolerance	%	± 4
Line Regulation	%	0.5
Load Regulation	%	0.6
External Load Capacitance	µF	200 - 1600
Ripple & Noise	mVpp	20
Switching Frequency	kHz	400
Overcurrent Protection Threshold (typ)	A	15
Overtemperature Protection	-	Yes
Output Voltage Adjustment Range	-	-3.3 to - 30
		See product <a href="#">specifications</a> for output trim equation
Remote Sense	-	(+) Sense, compensating up to 5% of output voltage
Remote On/Off	-	Negative or Positive Logic
<b>Environmental</b>		
Operating Temperature (Tref)	°C	-40 to 125
Storage Temperature	°C	-55 to 125
Humidity (non condensing)	%RH	5 - 95 (Operating & Storgae)
Cooling	-	Convection or forced air
<b>Other</b>		
Weight (Typ)	g	15
Size (LxWxH)	mm	33.0 x 22.9 x 12.1
Size (LxWxH)	Inches	1.30 x 0.90 x 0.47
MTBF - Telcordia SR-332	-	> 10 Mhrs; 100% Load; Ta = 40 °C
Warranty	ysr	3 years

## Notes

See website for detailed product [specifications](#).

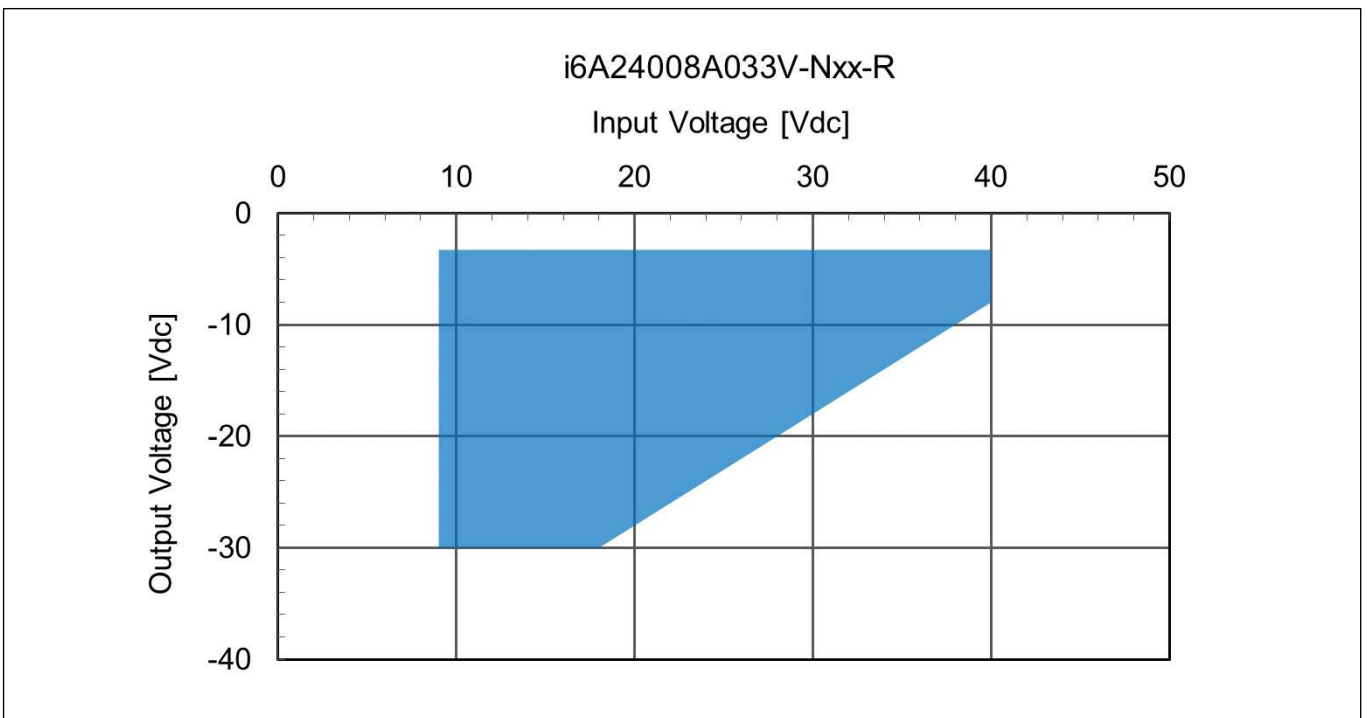
## Typical Application Circuit (i6AN)



Recommendation:

1. TRIM resistor  $R_{up}$  should be connected to the i6AN module as close as possible.

## Operating Range



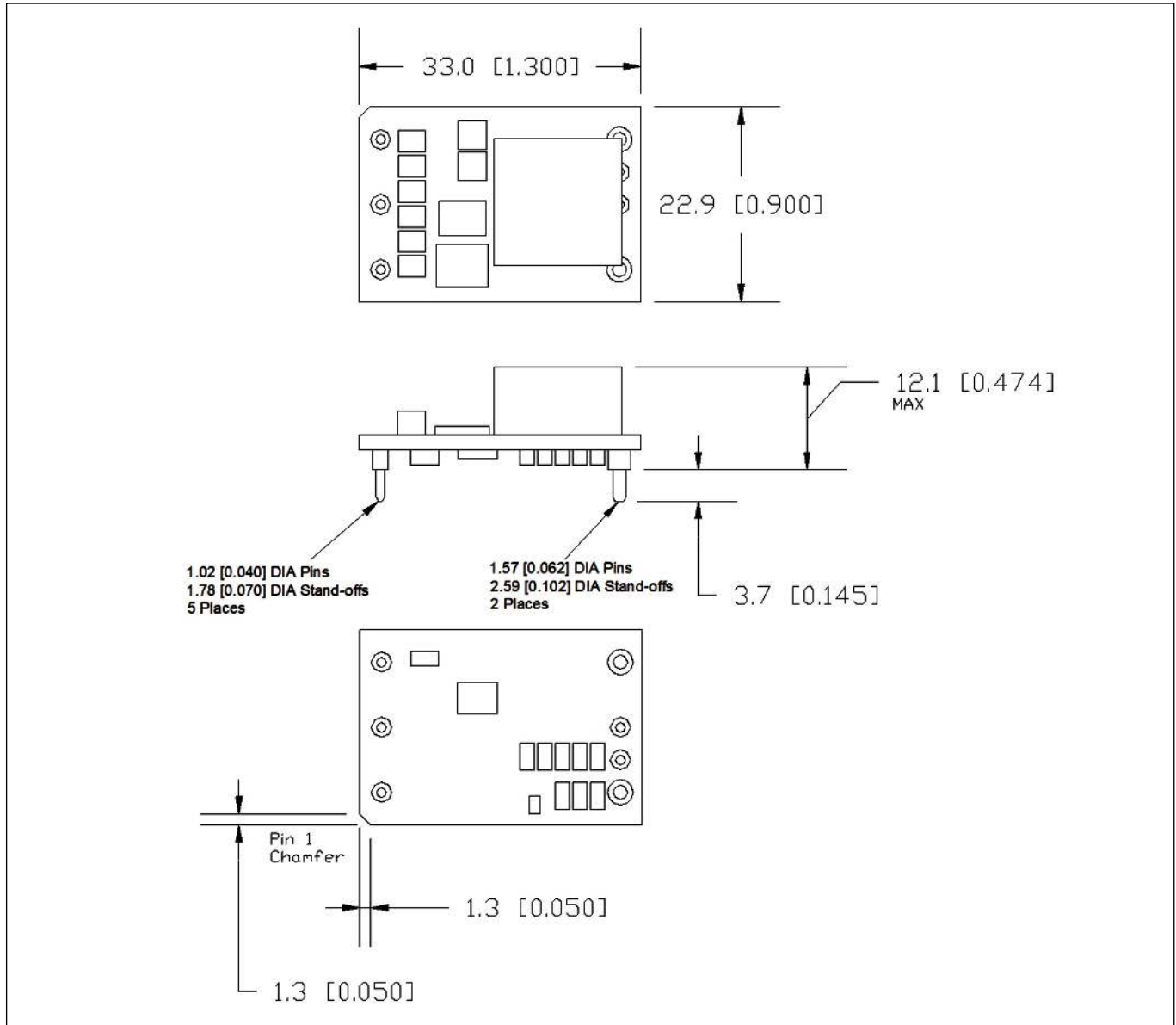
### Pinout

PIN	Function	PIN	Function
1	VIN (+)	6	TRIM
2	ON / OFF	7	VOUT (+)
3	VOUT (-)	8	GND / VOUT(+)/ VIN(-)
4	VOUT (-)		

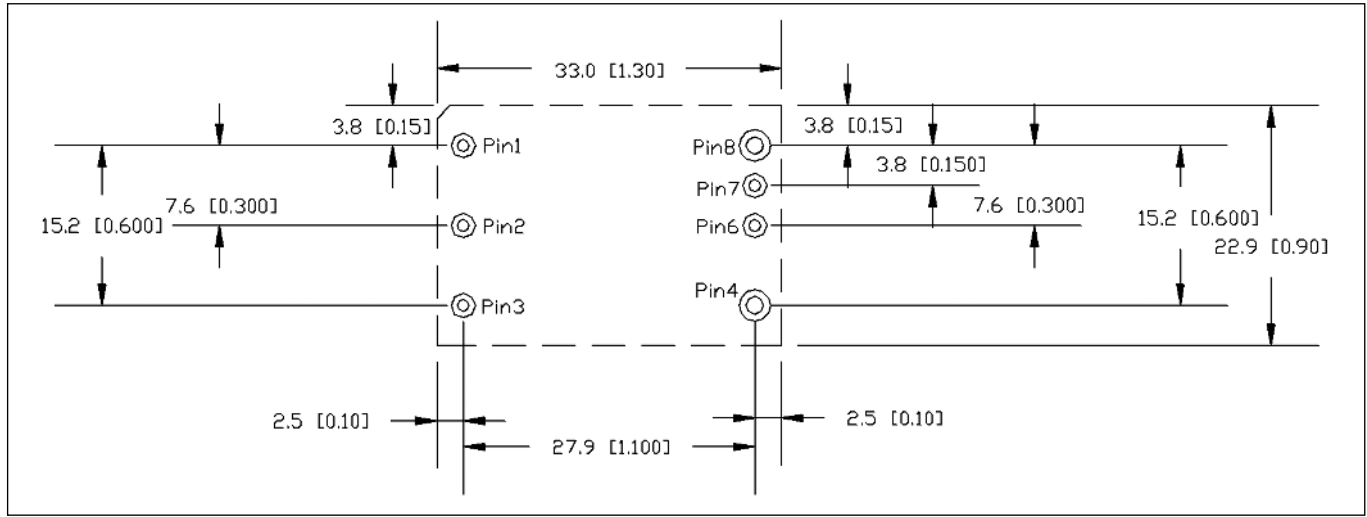
Pin base material is brass or copper with gold over nickel plating.

**Mechanical Specification**

Dimensions are in mm [in]. Unless otherwise specified tolerances are:  $x.x \pm 0.5$  [0.02],  $x.xx \pm 0.25$  [0.010]



**Recommended Hole Pattern (top view)**





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