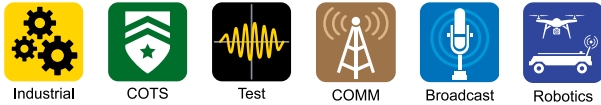
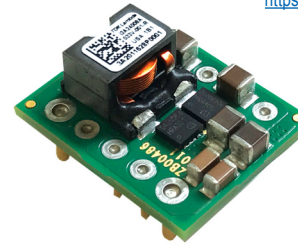


100W, 9 to 53V Input Non-Isolated Step-Down DC-DC Buck Converter

<https://product.tdk.com/en/power/i3a>
www.emea.lambda.tdk.com/i3a



The i3A series of non-isolated DC-DC step-down converters are ideal for creating additional output voltage rails from a single output 12V, 24V or 48V AC-DC or DC-DC power supply including battery sources. The highly efficient i3A series accepts a wide DC input and has a wide output adjustment range in a compact 1/32nd brick footprint. Output trim, remote sense and negative logic remote On-Off comes as standard features.

Features	Benefits
• Up to 100 W in a 1/32nd brick package	• High Power Density, Less Board Area Needed
• High Efficiency Up to 98%	• Longer Battery Life / Less Power Consumed
• Wide 3.3 to 16.5V or 5 to 30V Output Adjustment	• One Part Supports Multiple System Voltages
• 9 to 53V Input Range	• Can Operate From Different DC Source Voltages Including Batteries
• Low Component Count With Minimal External Components	• Low Cost
• Minimal Derating Requirements in Low Airflow Environments	• Easy to Cool in End System

Model Selector						
Model	Input Voltage (V)	Output Voltage (V)	Max Current (A)	Max Power (W)	Negative Logic On/Off	Positive Logic On/Off
i3A4W008A033V-001-R	9 - 53	3.3 - 16.5	8	100	Yes	-
i3A4W005A150V-001-R	9 - 53	5 - 30	4.5	100	Yes	-

Related Products		
Type	Part Number	Description
DC-DC Buck Converter	i6A4W	250W, Input 9-53V, Output 3.3-40V 10A or 3.3-15V 20A
DC-DC Buck Converter	i6A24	250W, Input 9-40V, Output 3.3-24V 14A
DC-DC Buck Converter	i6AN	75W, Input 9-40V, Negative Output -3.3 to -30V, 8A
DC-DC Buck Converter	i7A	500-750W, Input 18-60V or 18-32V, Output 3.3-24V 33A or 3.3-18V 45A
DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Evaluation Kit	i3A05A-C01-EVK-S1	Compact Evaluation kit with i3A4W005A150V-001-R module
Evaluation Kit	i3A08A-C01-EVK-S1	Compact Evaluation kit with i3A4W008A033V-001-R module
Evaluation Kit	i3A5A8A-001-VK-D2PP	Evaluation kit with i3A4W005A150V-001-R and i3A4W008A033V-001-R modules

Specification			
Model		i3A4W008A033V	i3A4W005A150V
Input			
Input Voltage Range	Vdc	9 - 53	
Input Current (max)	A	10 (max)	
Turn-ON Input Voltage	Vdc	8	
Turn-OFF Input Voltage	Vdc	7 - 9	
Efficiency	%	89 - 96.5	95.5 - 98
Safety Certifications and Markings	-	IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark and UKCA Mark	
Output			
Output Voltage Tolerance	%	± 4	
Line Regulation	%	0.3	0.2
Load Regulation	%	0.7	0.5
External Load Capacitance (1)	µF	0 - 1200	0 - 1000
Ripple & Noise	mVpp	20	40
Switching Frequency	kHz	450	400
Overcurrent Protection Threshold (typ)	A	14	9
Overtemperature Protection	-	Yes	
Output Voltage Adjustment Range	-	14	9
Remote Sense	-	(+) Sense, compensating up to 5% of output voltage	
Remote On/Off	-	Negative Logic	
Environmental			
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	
Other			
Weight (Typ)	g	8	
Size (LxWxH)	mm	19.1 x 23.4 x 9.6	
Size (LxWxH)	Inches	0.75 x 0.92 x 0.38	
MTBF - Telcordia SR-332	-	> 14 Mhrs; 100% Load; Ta = 40 °C	
Warranty	yrs	3 years	

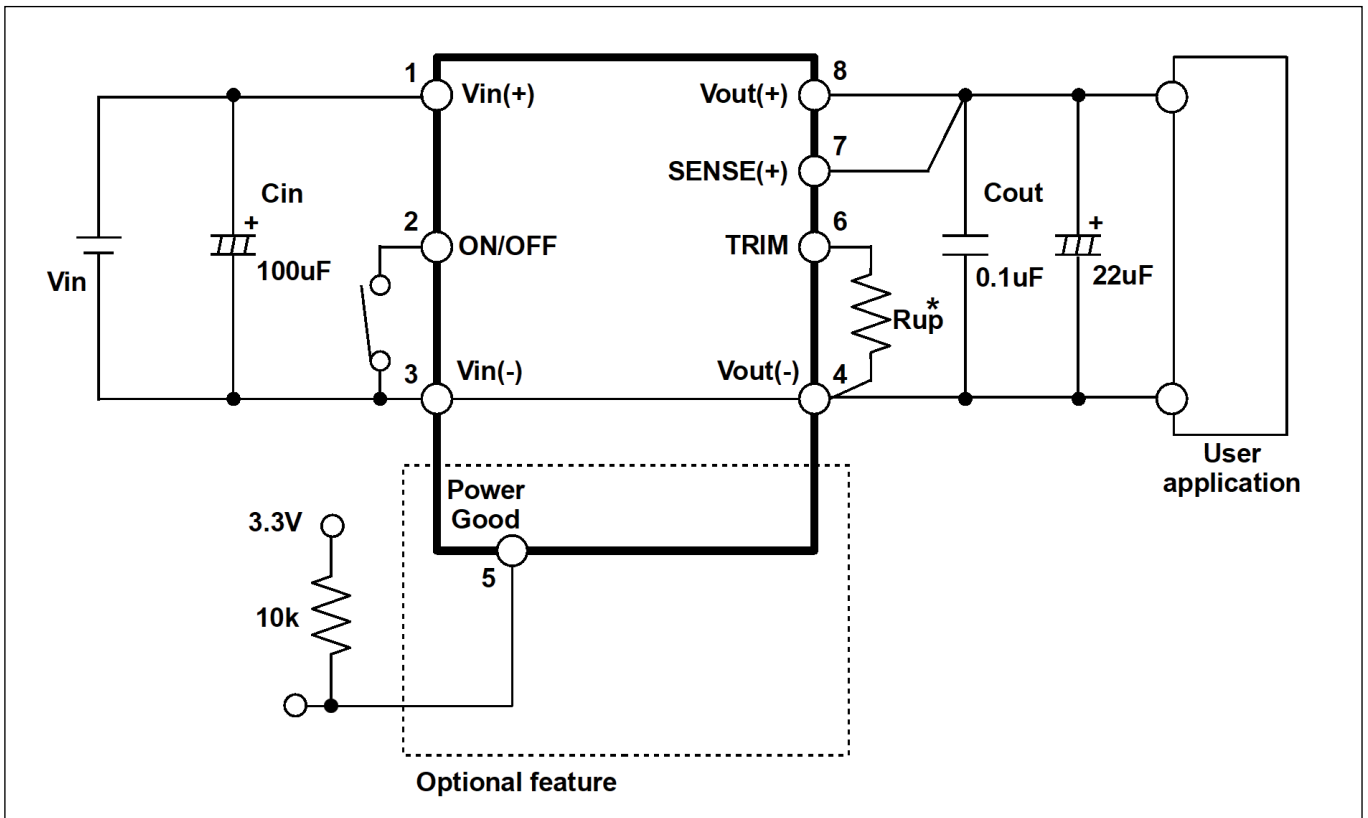
(1) For Vo ≥ 8Vdc, minimum Cout = 200 µF.

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

Pinout			
PIN	Function	PIN	Function
1	Vin (+)	5	Power Good (option)
2	On / Off	6	Trim
3	Vin (-) / GND	7	Sense +
4	Vout (-) / GND	8	Vout (+)

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

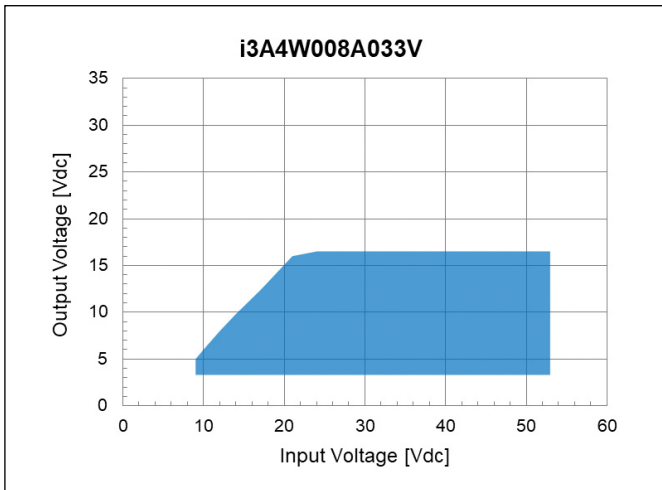
Typical Application Circuit (i3A)



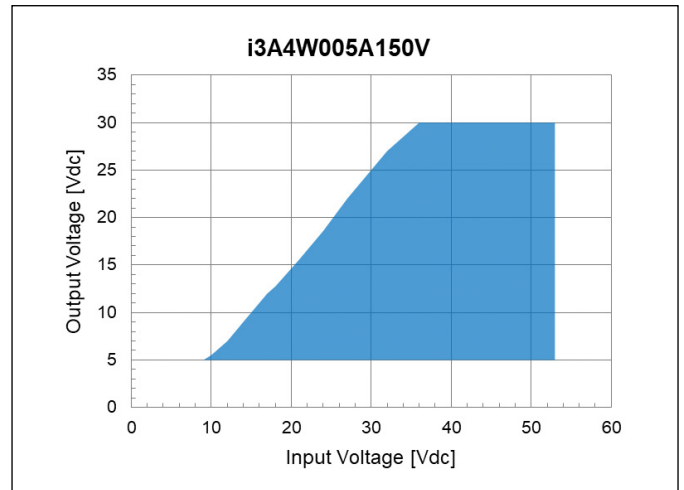
Recommendations:

- 1) TRIM resistor Rup should be connected to the i3A module as close as possible.

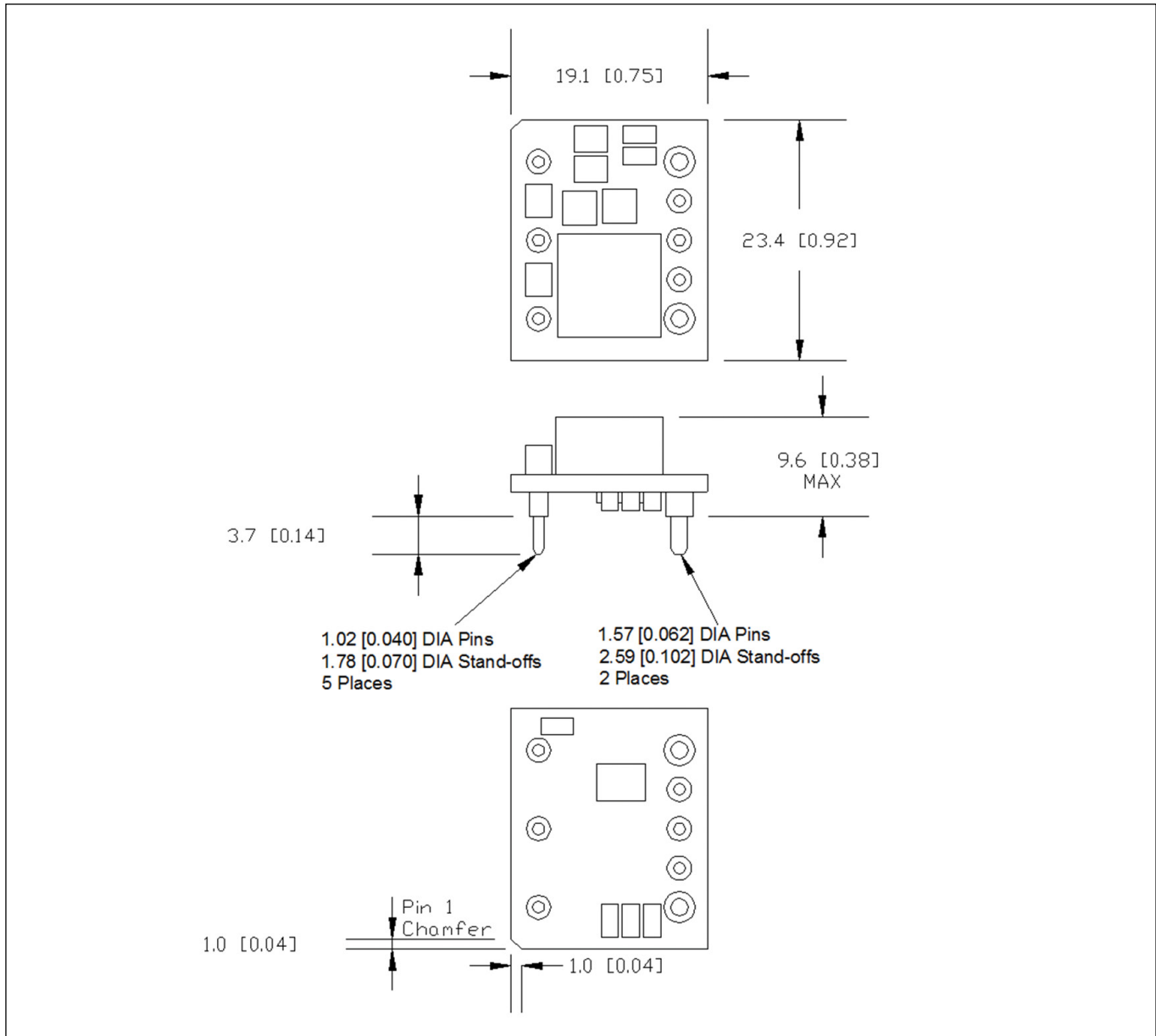
Output vs. Input Voltage Operating Range



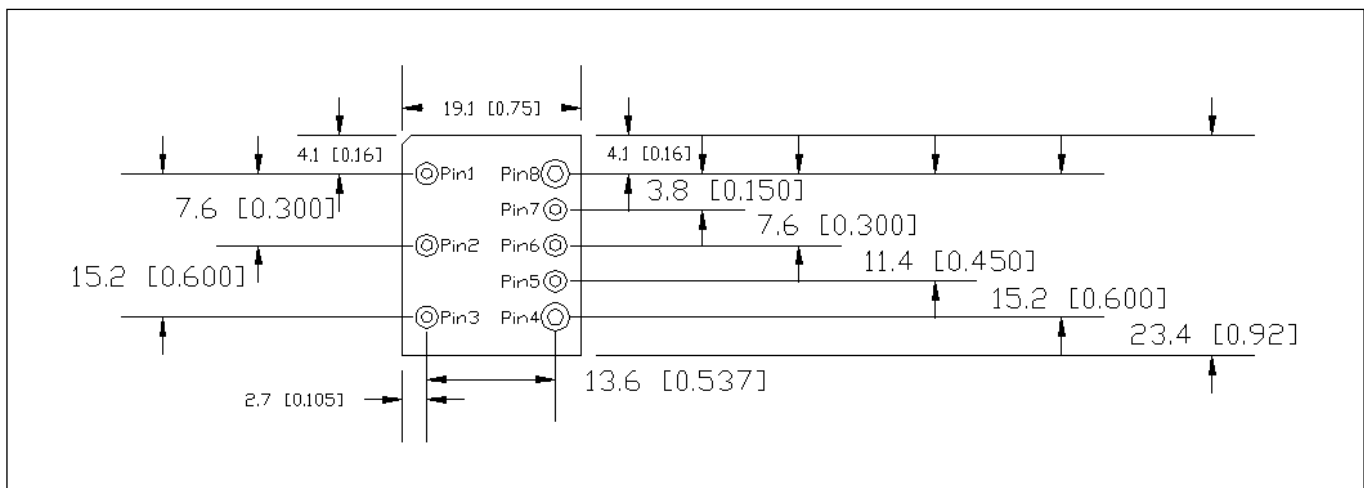
Output vs. Input Voltage Operating Range



Mechanical Specification



Recommended PCB Hole Pattern





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