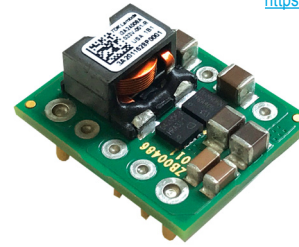


100W, 9 to 53V Input Non-Isolated Step-Down DC-DC Buck Converter

<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	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 Agency Certifications	-	IEC/UL/CSA/EN 62368-1, 60950-1, CE 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	

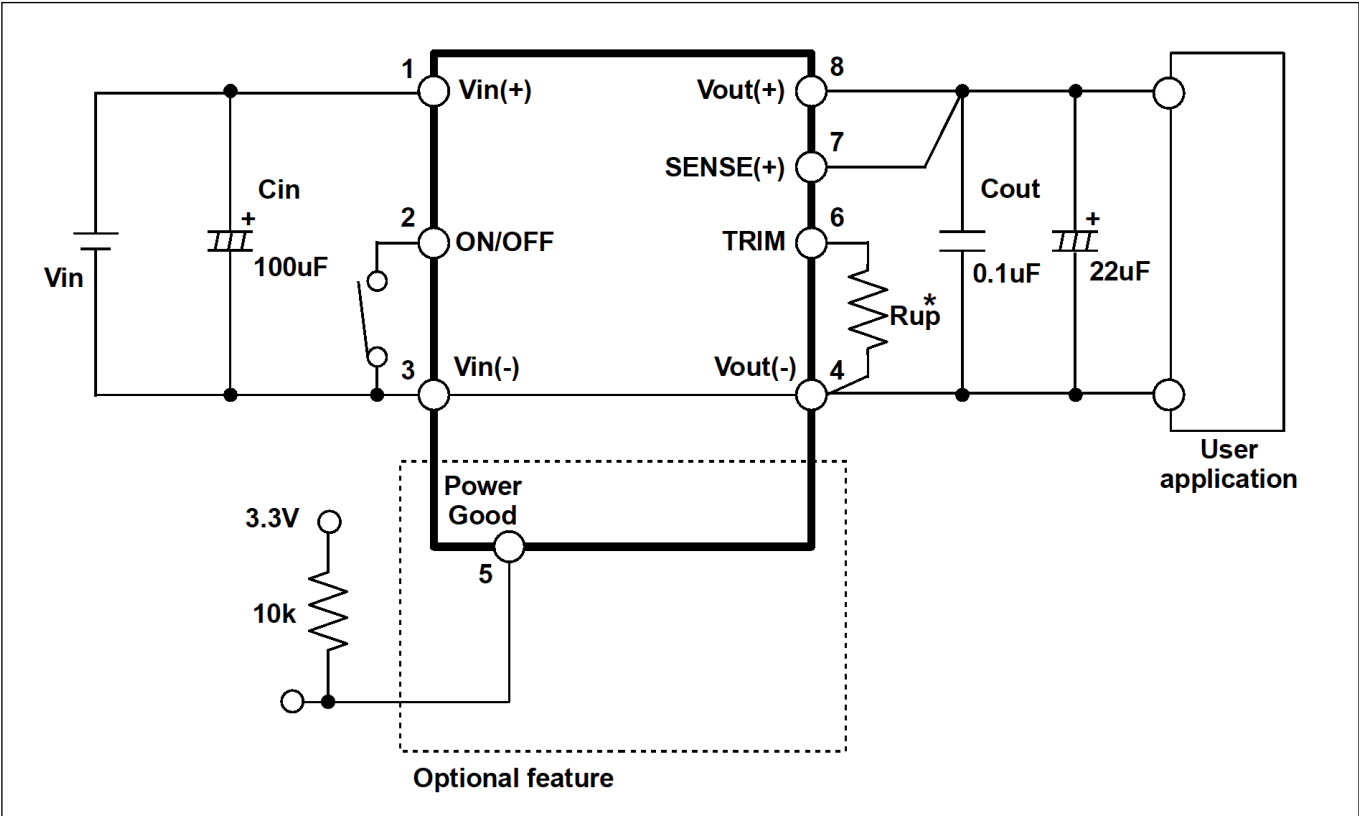
(1) For Vo ≥ 8Vdc, minimum Cout = 200 µF.

(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 (+)

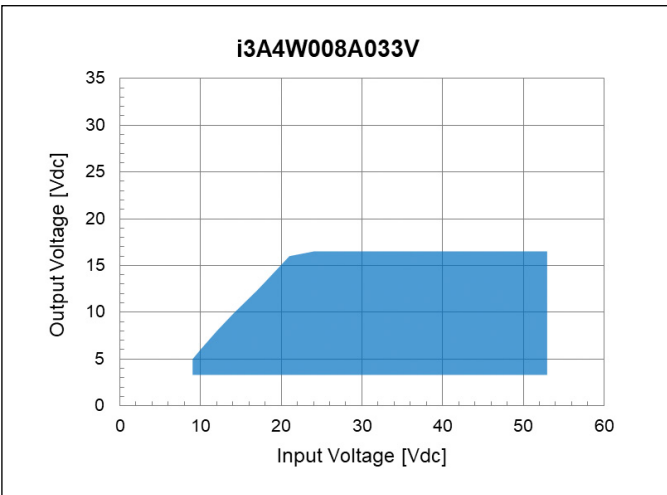
Pin base material is brass or copper with gold over nickel plating.

Typical Application Circuit (i3A)

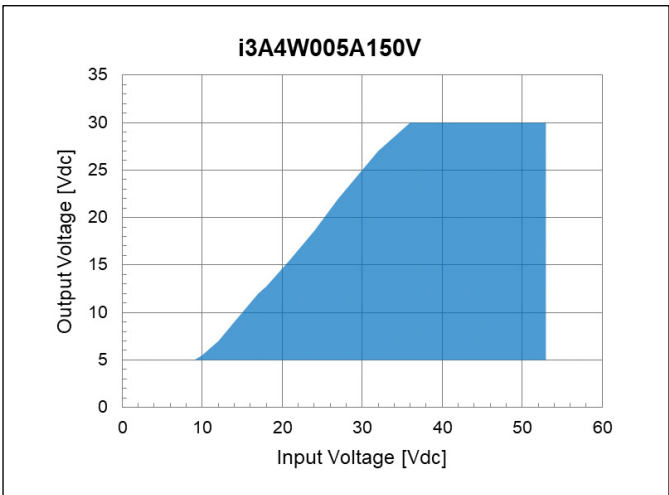


Recommendations:
 1) TRIM resistor R_{up} should be connected to the i3A module as close as possible.

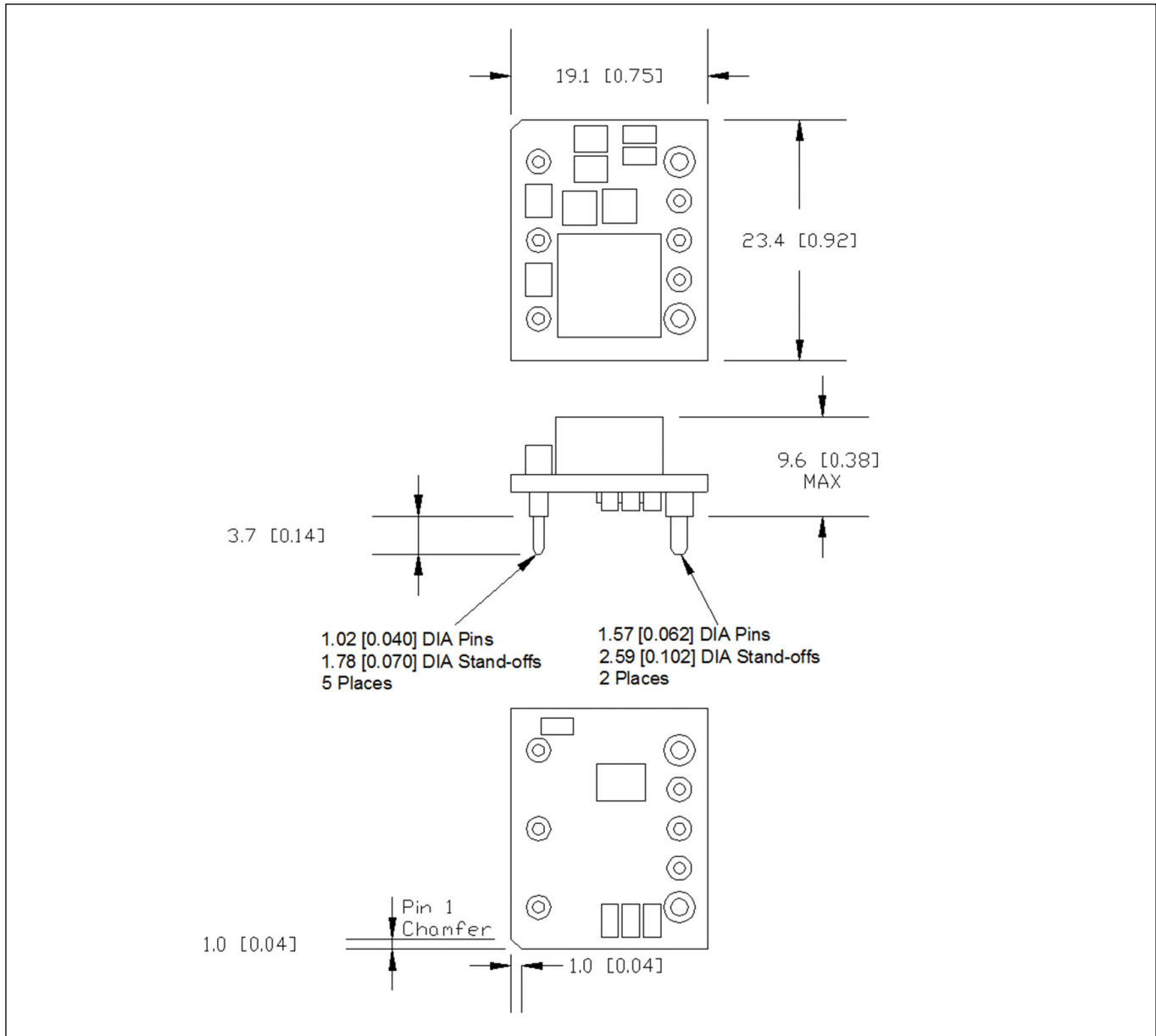
Output vs. Input Voltage Operating Range



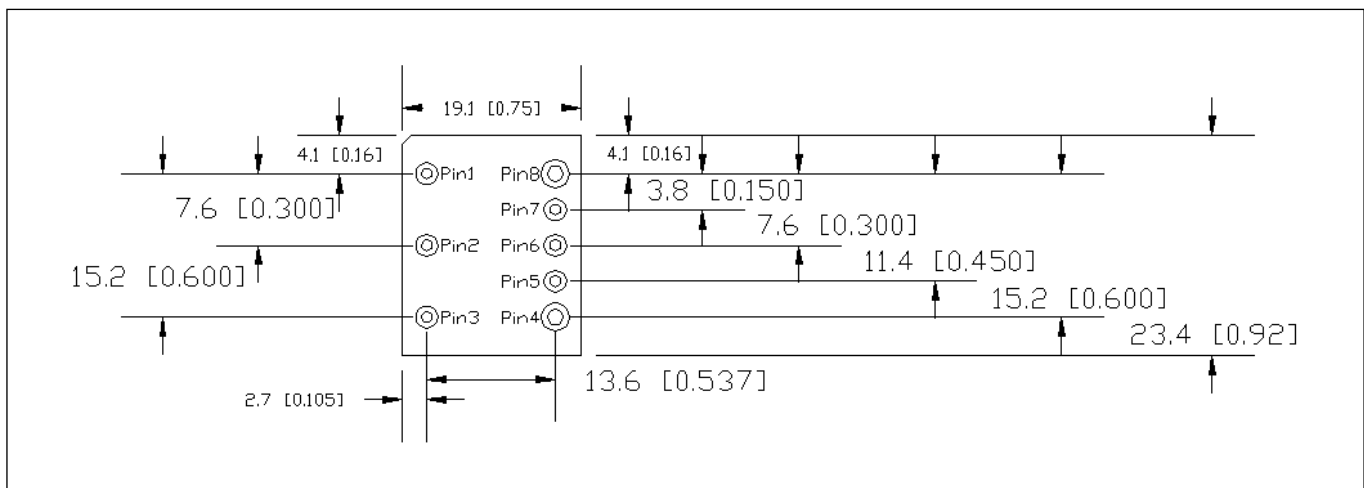
Output vs. Input Voltage Operating Range



Mechanical Specification



Recommended PCB Hole Pattern





TDK-Lambda France SAS

Tel: +33 1 60 12 71 65
france@fr.tdk-lambda.com
www.emea.lambda.tdk.com/fr



Italy Sales Office

Tel: +39 02 61 29 38 63
info.italia@it.tdk-lambda.com
www.emea.lambda.tdk.com/it



Netherlands

info@nl.tdk-lambda.com
www.emea.lambda.tdk.com/nl



TDK-Lambda Germany GmbH

Tel: +49 7841 666 0
info.germany@de.tdk-lambda.com
www.emea.lambda.tdk.com/de



Austria Sales Office

Tel: +43 2256 655 84
info@at.tdk-lambda.com
www.emea.lambda.tdk.com/at



Switzerland Sales Office

Tel: +41 44 850 53 53
info@ch.tdk-lambda.com
www.emea.lambda.tdk.com/ch



Nordic Sales Office

Tel: +45 8853 8086
info@dk.tdk-lambda.com
www.emea.lambda.tdk.com/dk



TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66
info@uk.tdk-lambda.com
www.emea.lambda.tdk.com/uk



TDK-Lambda Ltd.

Tel: +9 723 902 4333
info@tdk-lambda.co.il
www.emea.lambda.tdk.com/il



C.I.S.

Commercial Support:

Tel: +7 (495) 665 2627

Technical Support:

Tel: +7 (812) 658 0463
info@tdk-lambda.ru
www.emea.lambda.tdk.com/ru



TDK-Lambda Americas

Tel: +1 800-LAMBDA-4 or 1-800-526-2324
powersolutions@us.tdk-lambda.com
www.us.lambda.tdk.com



TDK Electronics do Brasil Ltda

Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en



TDK-Lambda Corporation

Tel: +81-3-6778-1113
www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd.

Tel: +86 21 6485-0777
powersolutions@cn.tdk-lambda.com
www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd.

Tel: +65 6251 7211
tts.mkt@sg.tdk-lambda.com
www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division

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