

250W, 9-53V Input Non-isolated DC-DC Converters



Industrial



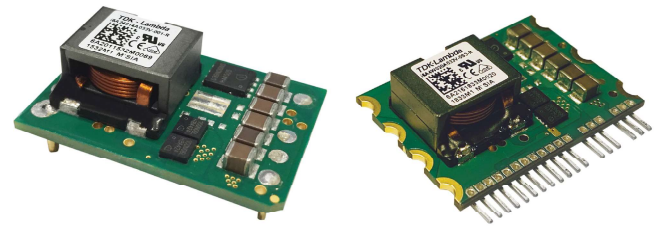
Test



COMM



Broadcast



The i6A 4W series of non-isolated step-down converters are ideal for creating additional high current output voltages from a single output 12V, 24V or 48V AC-DC power supply. The highly efficient i6A 4W series accepts a very wide DC input and has a wide output adjustment range, with a choice of 1/16th brick footprint or SIP package.

Features	Benefits
• Up to 250W in a 1/16th brick or SIP package	• Very High Power Density
• Very high Efficiency up to 97%	• Easier Thermal Management
• Wide Output Adjustment 3.3 to 15V & 3.3 to 40V	• One Part For Multiple Applications
• Minimal External Components Needed	• Less Board Area Required
• Low Airflow With Minimal Derating Requirements	• Easier To Cool In End System

Model Selector							
Model	Output Voltage (V) ⁽¹⁾	Max Current (A)	Max Power (W)	Positive Logic On/Off	Negative Logic On/Off	Full Feature	Package
i6A4W010A033V-001-R	3.3 to 40	10	250	-	Yes	-	DIP
i6A4W010A033V-0S1-R	3.3 to 40	10	250	-	Yes	-	SIP
i6A4W020A033V-000-R	3.3 to 15	20	250	Yes	-	-	DIP
i6A4W020A033V-001-R	3.3 to 15	20	250	-	Yes	-	DIP
i6A4W020A033V-0S1-R	3.3 to 15	20	250	-	Yes	-	SIP
i6A4W020A033V-002-R	3.3 to 15	20	250	Yes	-	Yes	DIP
i6A4W020A033V-003-R	3.3 to 15	20	250	Yes	-	Yes	DIP
i6A4W020A033V-0S3-R	3.3 to 15	20	250	-	Yes	Yes	SIP
i6A4W020A033V-005-R	3.3 to 15	20	250	-	Yes	Yes ⁽²⁾	DIP

Preferred model

Specification		
Model	i6A4W010A033V	i6A4W020A033V
Input		
Input Voltage range	Vdc	9 to 53V (Turn on at 10V or greater)
Input Current	A	20A maximum
Efficiency	-	94 - 97.5 90 - 97.0
Safety Agency Certifications	-	IEC/UL/CSA/EN 60950-1, CE Mark (LVD and RoHS)
Output		
Output Voltage Tolerance	%	±4
Switching Frequency	kHz	400
Line Regulation	%	0.3 0.4
Load Regulation	%	0.9 1.2
External Load Capacitance	uF	0 - 1500
Output Ripple & Noise (pk-pk)	mV	50 20
Overcurrent Protection Threshold	A	15 27
Overvoltage Protection	V	None
Remote On / Off		See options table
Remote Sense		(+) Sense, compensating up to 5% of output voltage
Power Good		Optional (Full Feature Version)
Sync & Sequencing	-	Optional (Full Feature Version)
Parallel Operation	-	Not possible
Series operation	-	Not possible

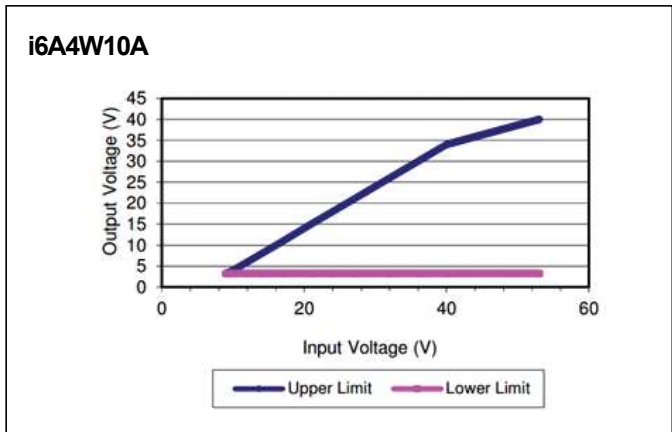
Specification		
Model	i6A4W010A033V	i6A4W020A033V
Environmental		
Operating Temperature	°C	-40 to 125 (see thermal data on website)
Storage Temperature	°C	-55 to 125
Cooling	-	Convection or forced air
Other		
Weight	g	15
Size (LxWxH)	mm	DIP Version: 33 x 22.9 x 12.1, SIP Version: 33 x 11.4 x 24.8
Size (LxWxH)	In	DIP Version: 1.30 x 0.9 x 0.74, SIP Version: 1.30 x 0.45 x 0.98
Warranty	yrs	3

Notes

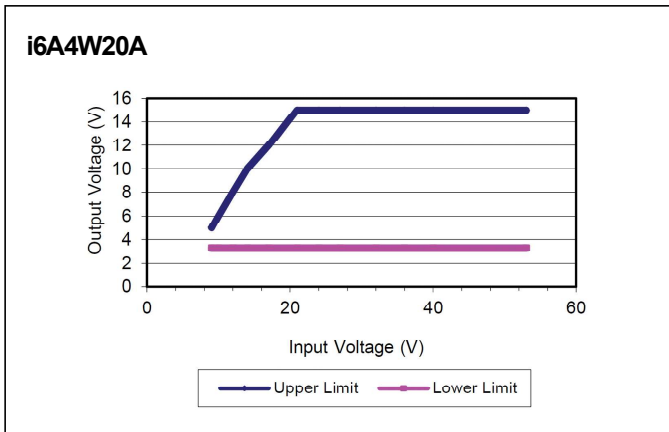
See website for detailed specifications, test methods and installation manual

- (1) Output voltage cannot exceed input voltage (see graphs below).
- (2) Full Feature module but without the SEQ (Sequencing) Pin 34 installed.
- (3) If the Sequencing feature will not be used, the SEQ Pin 34 needs to be tied to a 1.8-3.3V source via a 10k resistor. See Full specification for details.

Output vs Input Voltage Operating Range

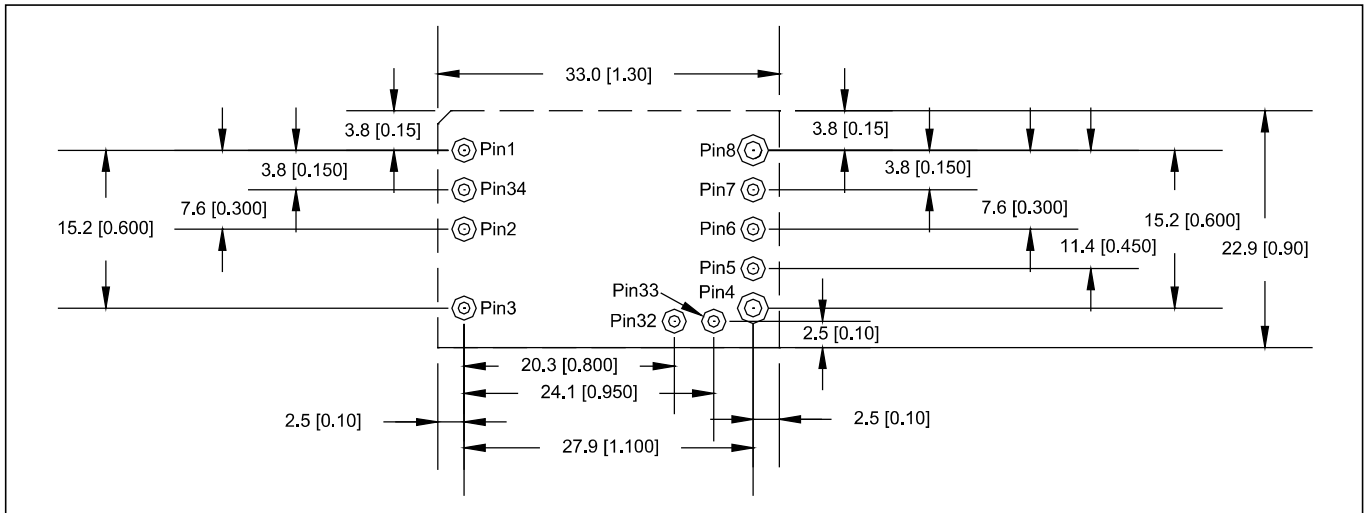


Output vs Input Voltage Operating Range



Mechanical Specification (DIP Style)

Recommended Hole Pattern (top view)



Pinout

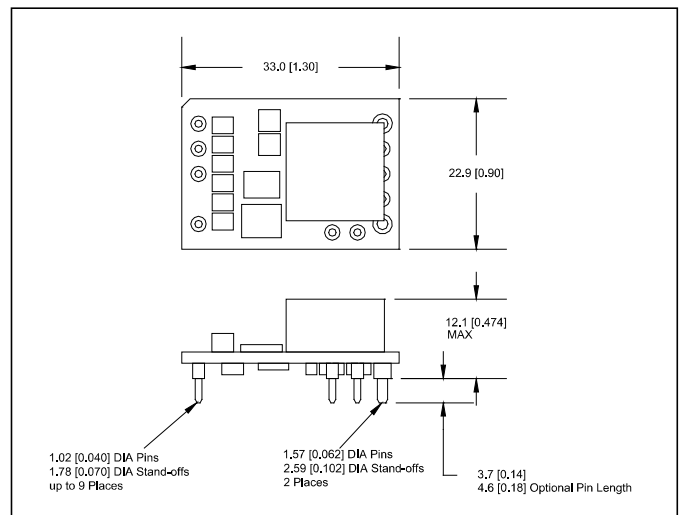
PIN	Function	PIN	Function
1	VIN (+)	7	SENSE (+)
2	ON / OFF	8	VOUT (+)
3	VIN (-)	32	Sync (Option)
4	VOUT (-)	33	MS (Option)
5	PWR GOOD (Option)	34	SEQ (Option)
6	TRIM		

Evaluation Boards (DIP Version)

Evaluation kit part #	Contents
i6A20A-001-EVK-S1PX	Populated with one piece of i6A4W020A033V-001-R
i6A20A-001-EVK-S1CC	Populated with one piece of i6A4W020A033V-001-R to set for constant current operation
i6A10A-001-EVK-S1PX	Populated with one piece i6A4W010A033V-001-R.
i6A10A-001-EVK-S1CC	Populated with one piece i6A4W010A033V-001-R set for constant current operation.

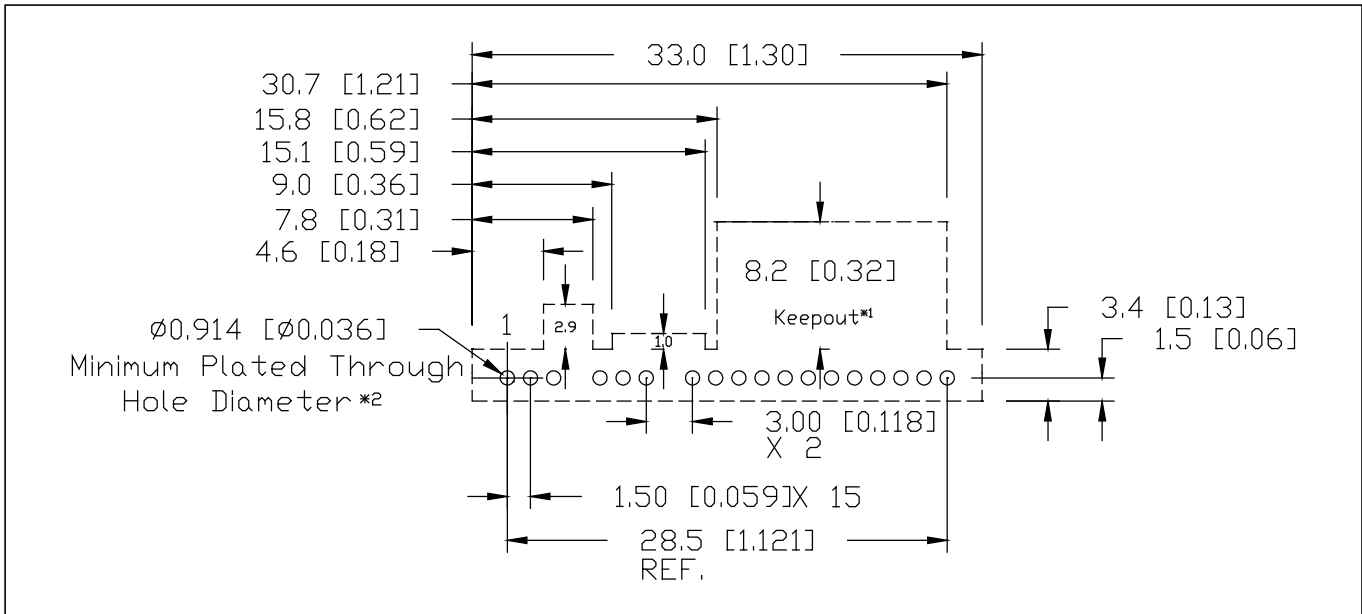
User manual available at I6A4W technical files in our website, contact technical support for more details on constant current version.

Mechanical Specification



Mechanical Specification (SIP Style)

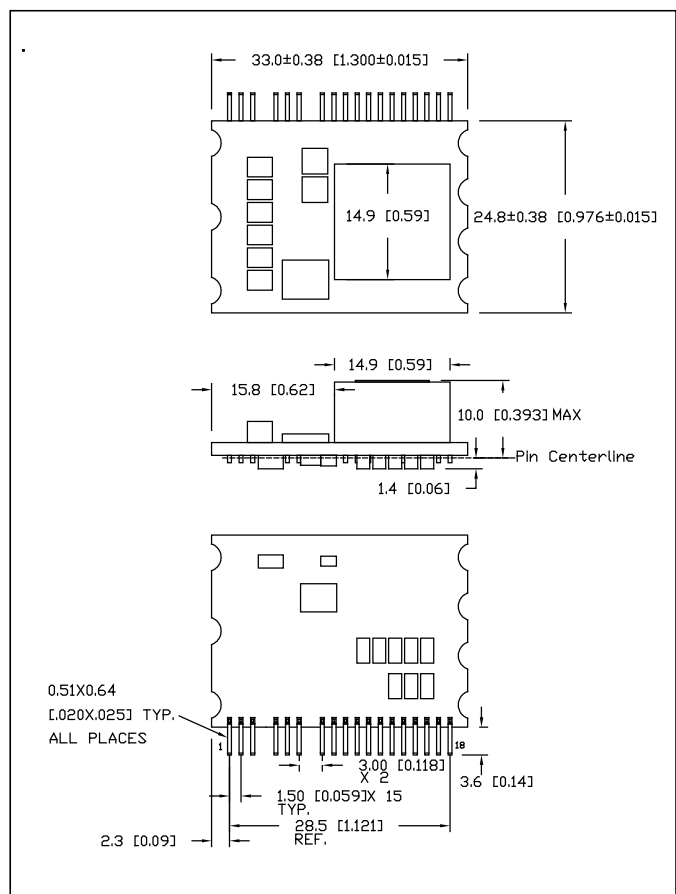
Recommended Hole Pattern (top view)



Pinout

PIN	Function	PIN	Function
1	VIN (+)	10	TRIM
2	VIN (+)	11	VOUT (-)
3	VIN (+)	12	VOUT (-)
4	VIN (-)	13	VOUT (-)
5	ON / OFF	14	SENSE (+)
6	MS (Option)	15	VOUT (+)
7	Sync (Option)	16	VOUT (+)
8	SEQ (Option)	17	VOUT (+)
9	PWR GOOD (Option)	18	VOUT (+)

Mechanical Specification





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



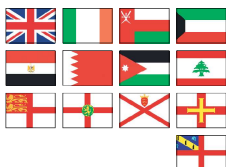
Switzerland Sales Office

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
powersolutions@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



Wuxi TDK-Lambda 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
tfs.mkt@sg.tdk-lambda.com
www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division

Tel: +91 80 4039-0660
mathew.philip@in.tdk-lambda.com
www.www.lambda.tdk.com

