

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



Industrial



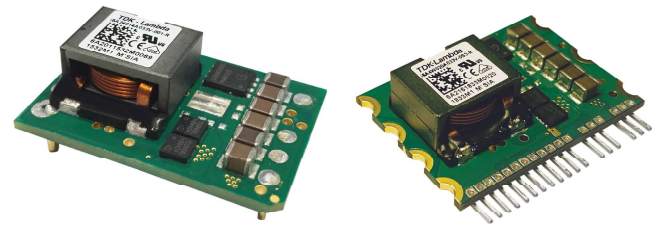
Test



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-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

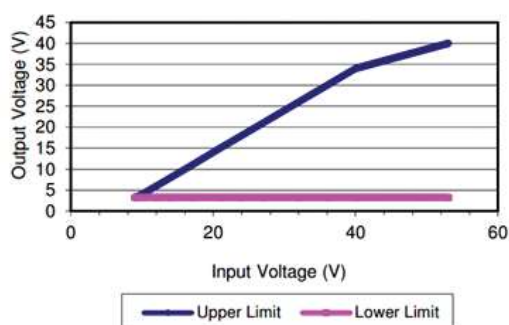
See website for detailed specifications, test methods and installation manual

(1) Output voltage cannot exceed input voltage (see graphs below).

(2) Full Feature module but without the SEQ pin installed.

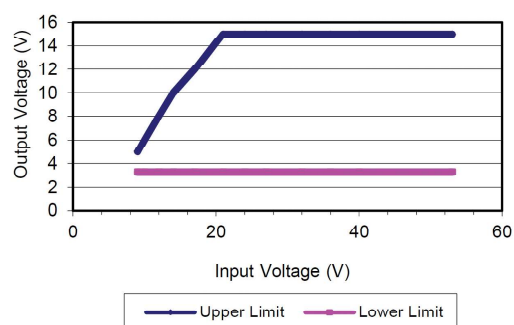
Output vs Input Voltage Operating Range

i6A4W10A



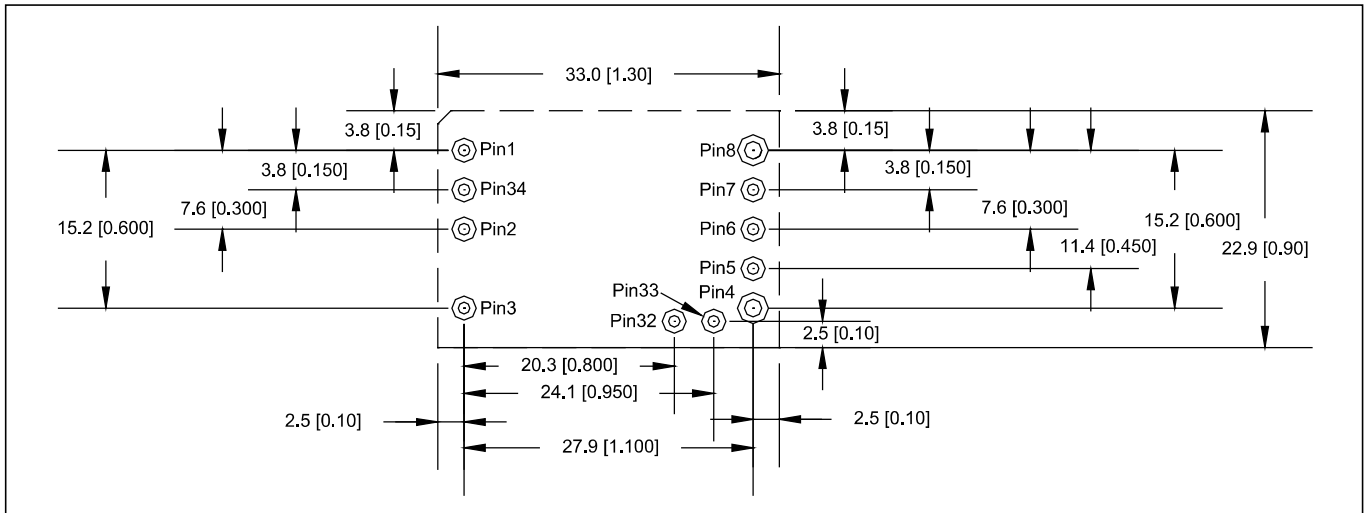
Output vs Input Voltage Operating Range

i6A4W20A



Mechanical Specification (DIP Style)

Recommended Hole Pattern (top view)



Pinout

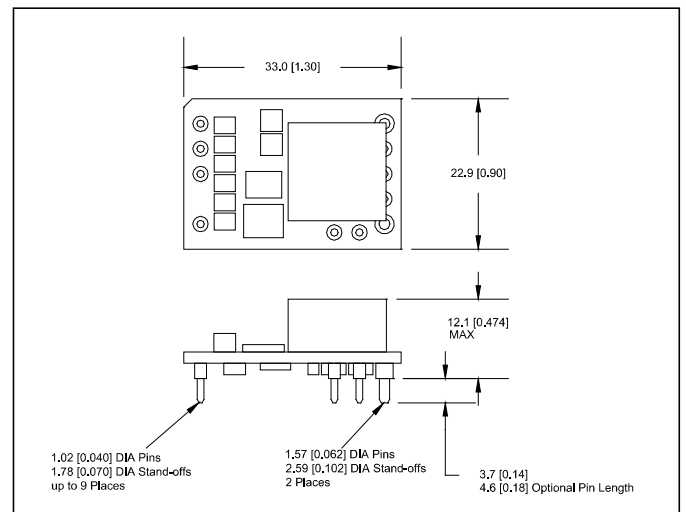
PIN	Function	PIN	Function
1	VIN (+)	7	SENSE (+)
2	ON / OFF	8	VOUT (+)
3	VIN (-)	32	Sync (Option)
4	VOUT (-)	33	MS (Option)
5	PWR GOOD (Option)	34	SEQ (Option)
6	TRIM		

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



Technical drawing of a mechanical part with dimensions in inches and millimeters. The drawing includes a top view and a side view. The top view shows a rectangular part with a central hole and a series of smaller holes along the bottom edge. The side view shows the profile of the part with a vertical dimension of 30.7 [1.21] and a horizontal dimension of 33.0 [1.30]. The drawing also includes a note for the minimum plated through hole diameter and a keepout area.

Dimensions (Inches [Millimeters]):

- 30.7 [1.21]
- 15.8 [0.62]
- 15.1 [0.59]
- 9.0 [0.36]
- 7.8 [0.31]
- 4.6 [0.18]
- 33.0 [1.30]
- 8.2 [0.32]
- 3.4 [0.13]
- 1.5 [0.06]
- 3.00 [0.118] X 2
- 1.50 [0.059] X 15
- 28.5 [1.121] REF.
- 2.9
- 1.0

Notes:

- Minimum Plated Through Hole Diameter *2
- Keepout *1

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 (+)

The image displays three technical drawings of a rectangular electronic component, likely a microcontroller or similar integrated circuit, showing top, side, and bottom views.

Top View: The component has a rectangular body with a width of 33.0 ± 0.38 [1.300 $\pm$ 0.015] and a height of 24.8 ± 0.38 [0.976 $\pm$ 0.015]. A central square area is labeled 14.9 [0.59]. There are several rectangular pads and a row of pins along the top edge.

Side View: This view shows the component's profile. The total height is 10.0 [0.393] MAX. The width of the main body is 14.9 [0.59]. The distance from the left edge to the start of the pins is 15.8 [0.62]. The pin pitch is 1.4 [0.06]. The pins are centered on a "Pin Centerline".

Bottom View: This view shows the underside of the component. It features a row of pins along the bottom edge. The pin pitch is 3.00 [0.118] X 2. The distance from the left edge to the start of the pins is 2.3 [0.09]. The distance from the left edge to the center of the pin array is 28.5 [1.121] REF. The distance from the center of the pin array to the right edge is 3.6 [0.14]. The pin height is 1.50 [0.059] X 15 TYP. The pin width is 0.51×0.64 [0.020 X 0.025] TYP. ALL PLACES.



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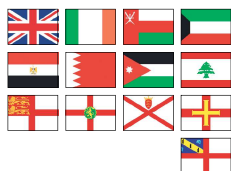
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