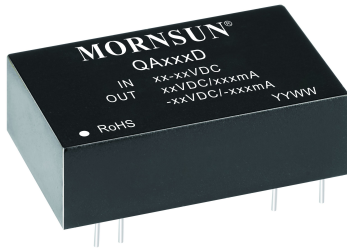


DC/DC Converter for IGBT driver



RoHS



FEATURES

- Efficiency up to 87%
- DIP package
- Isolation voltage : 4KVAC
- Isolation capacitance : 3pF
- Operating temperature range: -40°C~+85°C
- Input under-voltage protection

QAxxxD series are DC-DC converters for IGBT drivers, offer 4.8W rated output power. The built-in common-ground mode of the unique asymmetric voltage output mode reduces the driver loss of IGBT driver. They feature under-voltage protection, and can be widely used in:

1. General inverter
2. AC servo drive system
3. Electric welding machine
4. Uninterruptible power supply (UPS)

Selection Guide

Part No.	Input		Output		Efficiency (%Min./Typ) @ Full Load	Max. Capacitive Load (μF)
	Input Voltage(VDC)	Input Current(mA, Typ.) full load/no-load	Output Voltage (VDC)+Vo/-Vo	Output Current (mA)+Io/-Io		
	Nominal(Range)					
QA152D	15 (13.5-16.5)	368/20	+15/-9	+200/-200	83/87	1000

Note:*The capacitive loads of positive and negative outputs are identical.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Under-voltage Protection Voltage	Full load	--	12	--	VDC
Input Filter		Filter capacitor			
Hot Plug		Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Current*	+Io	Vin=15VDC	20	200	250	mA
	-Io	Vin=15VDC	-20	-200	-250	
Output Voltage	+Vo	Vin=15VDC, Pin16 & Pin14 +Io=+200mA	13.5	15	16.5	VDC
	-Vo	Vin=15VDC, Pin11 & Pin9 -Io=-200mA	-8.1	-9	-9.9	
Output Voltage Accuracy			See tolerance envelope graph (Fig. 1)			
Line Regulation	Full load		--	±1.2	±1.5	--
Load Regulation	10%-100% load		--	±8	±10	%
Temperature Coefficient	Full load		--	--	±0.03	%/°C
Ripple & Noise**	Full load,20MHz bandwidth		--	80	120	mVp-p

Note: *The typical output current is the rated full-load current of the product, the maximum output current is the maximum over-load current which the product allowed.

** Ripple and noise are measured by "parallel cable" method, please see DC-DC Converter Application Notes for specific operation.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output, with the test time of 1 minute and the leak current lower than 1mA	4000	--	--	VAC
Isolation Resistance	Input-output, Isolation voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output, 1MHz/0.1V	--	3.0	--	pF

Operating Temperature	Full load	-40	--	85	°C
Storage Temperature		-55	--	125	
Pin Welding Resistance Temperature	Welding spot is 1.5mm away from the casing, 10 seconds	--	--	300	
Casing Temperature Rise	Ta=25°C, nominal input, full load output	--	30	--	
Storage Humidity	Non-condensing	5	--	95	%RH
Switching Frequency	Full load, nominal input voltage	--	280	--	KHz
MTBF	MIL-HDFK-217F@25°C	1000	--	--	K hours

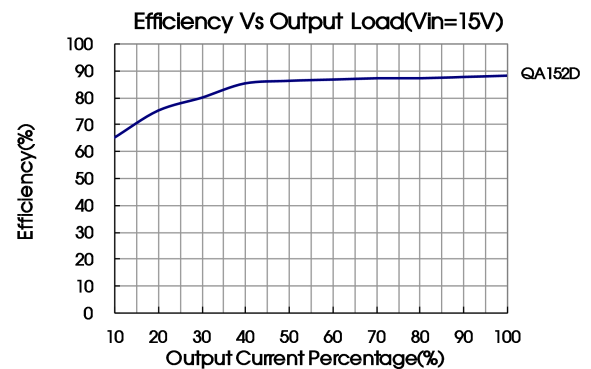
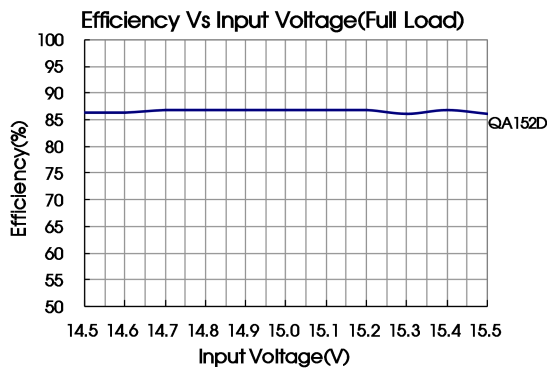
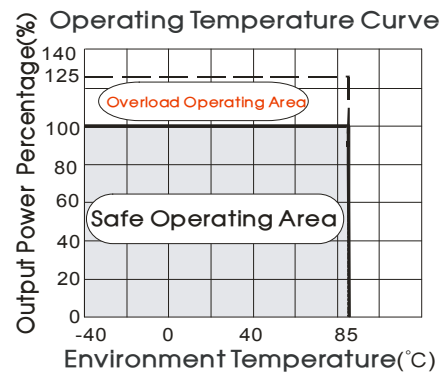
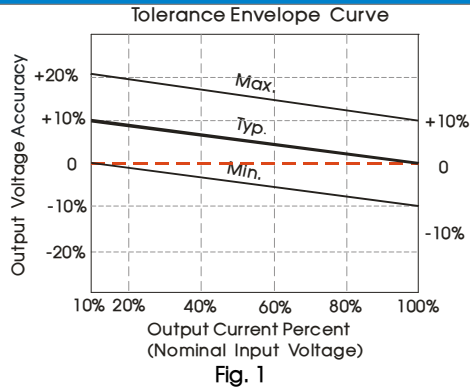
Physical Specifications

Casing Material	Black flame-retardant and heat-resistant plastic (UL94-V0)
Dimension	31.60*20.30*10.20mm
Weight	11.4g (Typ.)
Cooling Method	Free air convection

EMC Specifications

EMS	ESD	IEC/EN61000-4-2	Contact ±4KV	perf. Criteria B
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Product Characteristic Curve



Design Reference

1. Typical application

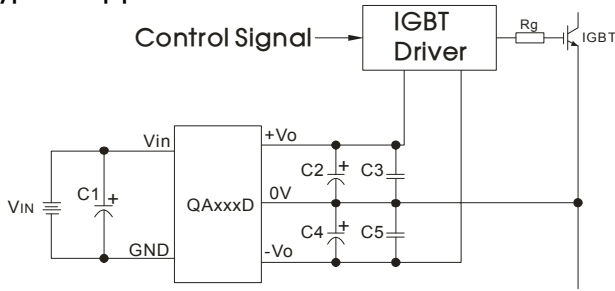


Fig. 2

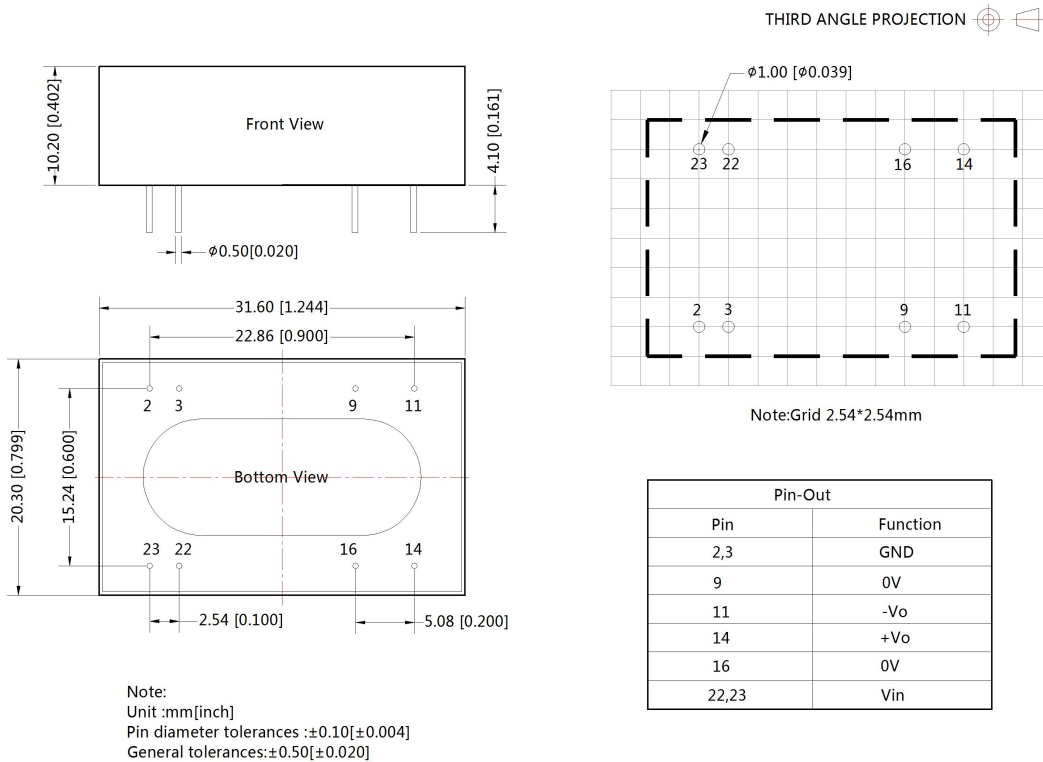
C1/ C2 /C4
100uF/35V (Low internal resistance capacitance)

Note: C3 and C5 can be select a capacitance value in 1uF~10uF ceramic capacitors. Can be appropriately increased values of C2 and C4 ,but less than Max. Capacitive Load of the product ,in order to reduce the ripple&noise.

2. It is not allowed to connect modules output in parallel to enlarge the power

3. For more information please find DC-DC converter application notes on www.mornsun-power.com

Dimensions and Recommended Layout



Notes:

1. Packing information please refer to Product Packing Information which can be downloaded from www.mornsun-power.com. Packing bag number: 58210008;
2. The lead wire connecting the power supply module and IGBT driver should be as short as possible during use;
3. The input&output filtering capacitor should be as close as possible to the power supply module and IGBT driver;
4. The peak of the IGBT driver gate drive current is high, so low internal resistance electrolytic capacitor is recommended to be used for the power supply module output filter capacitor;
5. The average output power of the driver must be lower than that of the power supply module;
6. Consider fixing in place with glue near the module if being used in vibration occasions;
7. The maximum capacitive load offered were tested at nominal input voltage and full load;
8. Unless otherwise specified, parameters in this datasheet were measured under the conditions of $T_a=25^{\circ}\text{C}$, humidity<75% with nominal input voltage and rated output load;
9. All index testing methods in this datasheet are based on our Company's corporate standards;
10. The performance parameters of the product models listed in this manual are as above, but some parameters of non-standard model products may exceed the requirements mentioned above. Please contact our technicians directly for specific information;
11. We can provide product customization service;
12. Specifications are subject to change without prior notice.

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