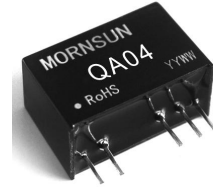


QA04

Application Design For IGBT Driver DC-DC Converter



QA04 is an application-designed power supply for the IGBT driver which needs two outputs isolated from the input. With two outputs, it can be better to drive IGBT effectively. The module also provides functions of short-circuit protection and auto-recovery capability.

FEATURES

- Input: 9~15VDC
- Output: 15V, 100mA
- Efficiency up to 80%
- Small footprint
- SIP package
- Output short circuit protection
- 3000VAC isolation
- Operation temperature: -40°C ~ +105°C
- no preload requirement
- RoHS compliance

Absolute Maximum Ratings

Item	Test Conditions	Limit	Units
Supply Voltage	Vin DC	15	V
Output Current	Io1 Vin=12VDC, PIN6&PIN7	100	mA
	Io2 Vin=12VDC, PIN5&PIN6	80	mA
Isolation Voltage (input/output)	Viso Sine wave voltage 50Hz/60 Hz, 1mA max, 1 minute	3000	Vrms
Operation Temperature	Topr	-40 ~ +105	°C
Storage Temperature	Tstg	-50 ~ +125	°C

Notes: 1. Ta=25°C, unless otherwise specified;
2. Modules with different input voltages can be customized in our company.

APPLICATION

- General-purpose Inverter
- AC Servo Systems
- Uninterruptable Power Supplies(UPS)
- Welding Machines

Electrical Characteristic

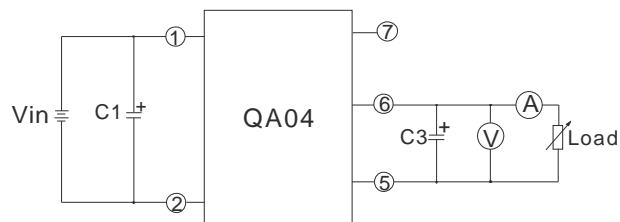
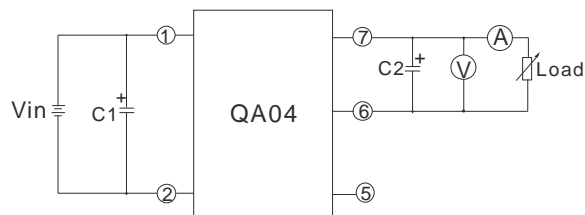
Item	Test Conditions	Limit			Units
		Min.	Typ.	Max.	
Supply Voltage	Vin Recommended Range	9	12.0	15	V
Output Voltage	Vo1 Vin=12VDC PIN6&PIN7 Io1=100mA	14	15	16	V
	Vo2 Vin=12VDC PIN5&PIN6 Io2=80mA	7	8	9	V
Line Regulation	Vin change of 25%		1.2	1.5	%
Efficiency	η PIN6&PIN7 Io1=100mA	77	80		%
Isolation Capacitor (input/output)	C Sine wave voltage 1kHz, 1V		10		pF
Ripple & Noise*	Vp-p PIN6&PIN7 Io1=100mA		100	200	mV

Notes: Ta=25°C; V_D=12V, unless otherwise specified.

RECOMMENDED TO SUPPLY THE FOLLOWING IGBT DRIVERS

- QC962
- M57962 Series

Testing Circuit



C1, C2, C3: 100μF/35V (Low impedance)

MORNSUN Science & Technology Co.,Ltd.

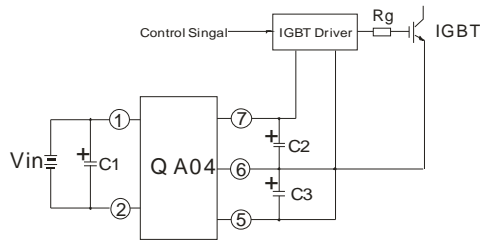
Address: No. 5, Kehui St. 1, Kehui development center, Science Ave., Guangzhou Science City, Luogang district, Guangzhou, P.R.China.

Tel: 86-20-28203030

Fax: 86-20-28203068

[Http://www.mornsun-power.com](http://www.mornsun-power.com)

Application Circuit

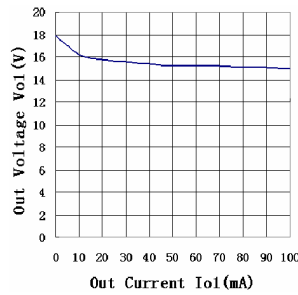
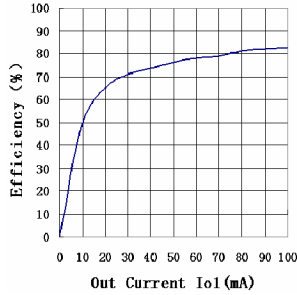


Vin: 12VDC
 C1: 100 μ F/35V(Low impedance)
 C2: 100 μ F/35V(Low impedance)
 C3: 100 μ F/35V(Low impedance)

Application Notes

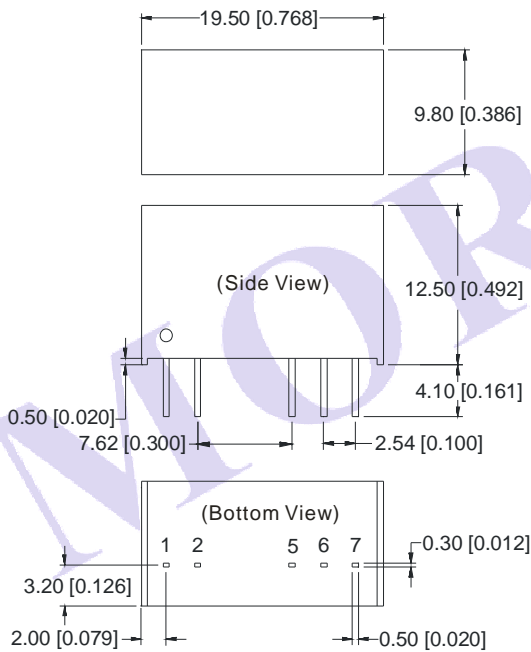
1. The wire between the converter and IGBT driver should be as short as possible;
2. External filter capacitors should be placed as close as possible to the converter and the IGBT driver;
3. To ensure the high peak gate current, the filter capacitors should be with low impedance.
4. The output average power of the IGBT driver should be less than the output power of DC-DC module.
5. In order to avoid over-temperature damage for long time short-circuit, the recommended duration time of short-circuit is less than ten minutes at 25°C.

Efficiency and Out Voltage to Out Current Characteristics



Outline Dimensions

MECHANICAL DIMENSIONS

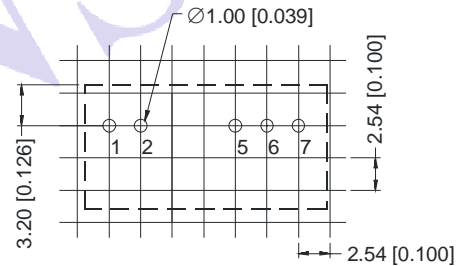


FOOTPRINT DETAILS

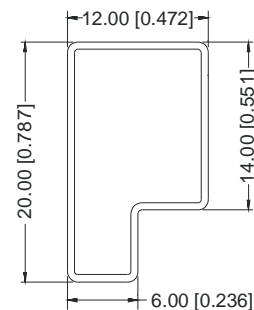
Pin	Function
1	Vin
2	GND
5	-Vo
6	0V
7	+Vo

Note:
 Unit:mm[inch]
 Pin section tolerances: 0.10mm[0.004inch]
 General tolerances: 0.25mm[0.010inch]

RECOMMENDED FOOTPRINT (TOP VIEW)



TUBE OUTLINE DIMENSIONS



Note:
 Unit :mm[inch]
 General tolerances: \pm 0.50mm[\pm 0.020inch]
 L=530mm[20.866inch] pcs/tube: 25pcs
 L=220mm[8.661inch] pcs/tube: 10pcs
 Short tube inside package dimensions: 255*170*80mm Net weight:115g
 Short tube outside package dimensions:375*280*270mm Net weight:625g
 Long tube inside package dimensions: 580*200*100mm Net weight:270g
 Long tube outside package dimensions(install two inside package box): 600*215*220mm Net weight:520g
 Long tube outside package dimensions(install three inside package box):600*215*325mm Net weight:660g