

**Typical product features**

- ◆ Fixed Voltage Input, Isolated Unregulated Output
- ◆ Conversion efficiency up to 83%
- ◆ Small SIP Package
- ◆ No additional components required
- ◆ Isolation voltage 3500VAC
- ◆ Working temperature: -40℃~+105℃
- ◆ Plastic housing, meet UL94 V-0 requirements



**Product Selection Guide**

Certificate	Part no.	Input Voltage Range (VDC)		Input current (mA)		Input Voltage/Current(Vo/Io)		Max capacitive load	Ripple noise (Max)	efficiency(%)
		Nominal value	range value	Full load Typ	No Load Typ	Voltage (V)	Current (mA)	uF	Mvp-p	Min/Typ
-	QA151M	15	13.5-16.5	155	18	+15/-5	+100/-100	220	120/80	80/83

Note 1: The test method of ripple and noise adopts the twisted pair test method. For the specific test method and collocation, please refer to the following (ripple & noise test description);

Note 2: Due to limited space, the above is only a partial list of products. If you need products other than the list, please contact the sales department of our company.

**Input characteristics**

	working conditions	MIN	TYP	MAX	UNIT
Input surge voltage (1sec max)	QA151M	-0.7	-	21	VDC
input filter	-	Capacitive filtering			

**Output characteristics**

		working conditions	MIN	TYP	MAX	UNIT
Output Voltage	QA151M	+Vo Vin=+15VDC,+Io=+100mA	14.4	15	15.9	VDC
		-Vo Vin=-5VDC,-Io=-100mA	-4.75	-5	-5.75	
Output Voltage Accuracy		Vin=+15VDC,+Io=+100mA	-4% to+6%			%
		Vin=-5VDC,-Io=-100mA	-5% to+15%			
		10%~100% load	See derating curve			
Load Regulation		10% to 100% load	+Vo	7	-	%
			-Vo	9	-	
Linear voltage regulation		input voltage change ±1%	-	±1.1	-	%
Ripple & Noise		Nominal input, full load, 20MHZ bandwidth	-	+Vo 120 -Vo 80	-	mVp-p
Temperature Drift Coefficient		100% load	-	-	±0.02	%/°C

Output short circuit protection	-	Continuous, self-recovery
Note: The test method of ripple & noise adopts twisted pair method.		

**General characteristics**

On-off frequency	TYP	100KHz (Typ)
Operating temperature	Reference temperature derating curve	-40℃ ~ +105℃
Storage temperature	-	-55℃ ~ +125℃
cover temperature rise during operation	Ta=25℃	30℃ (Typ)
Storage humidity	no condensation	5%~95%
cover material	-	Black flame retardant heat resistant plastic (UL94 V-0)
Weight	-	4.2g (Typ)
Isolation QA121C2	The test time is 1 minute, the leakage current is less than 1mA	3500VAC
Isolation QA151C3		3500VAC
Insulation resistance	Input-output, insulation voltage 500VDC	1000MΩ
Isolation Capacitor	Input/Output, 100KHz/0.1V	3.5pF (Typ)
mean time between	MIL-HDBK-217F 25℃	35X10 <sup>5</sup> Hrs

**Electromagnetic Compatibility Characteristics**

EMI	Conducted disturbance	CISPR22/EN55032, CLASS B (Recommended circuit diagram 2)
	Radiation harassment	CISPR22/EN55032, CLASS B (Recommended circuit diagram 2)
EMS	electrostatic discharge	IEC/EN61000-4-2 ±6KV Perf.Criteria B

**Package Dimensions, Pin Functions, Recommended Board Drawings**

Technical drawings showing front and side views of the IGBT driver package with dimensions in mm and inches. It includes two versions of the package: one with pins 1, 2, 5, 7 and another with pins 1, 2, 5, 6, 7. Printed board vertical views show the pin layout on a grid with 2.54mm spacing.

Packing Code	L x W x H	
-	19.50× 9.80 × 12.50mm	0.768 × 0.386 × 0.492inch

## Pin Definition

Pin Description	1	2	5	6	7
Dual Output	+Vin	GND	-Vo	COM	+Vo

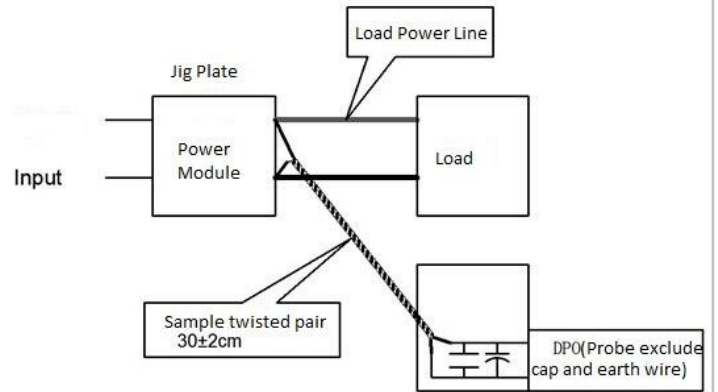
## Ripple & Noise Test Instructions (Twisted Pair Method 20MHz Bandwidth)

Test Method:

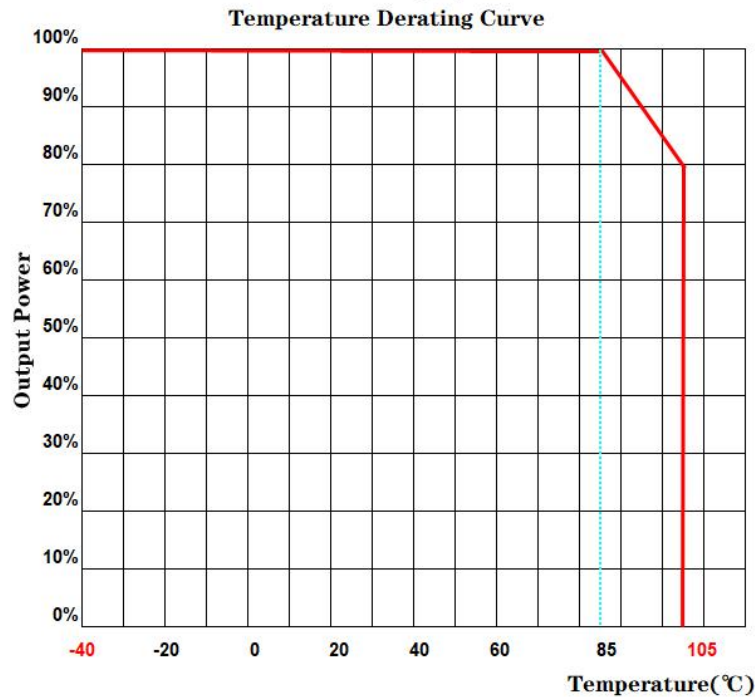
1. 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 47uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

2. Output Ripple& Noise Test Method:

Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2 cm sampling line, Power line selected from corresponding diameter wire with insulation according to the flow of output current.

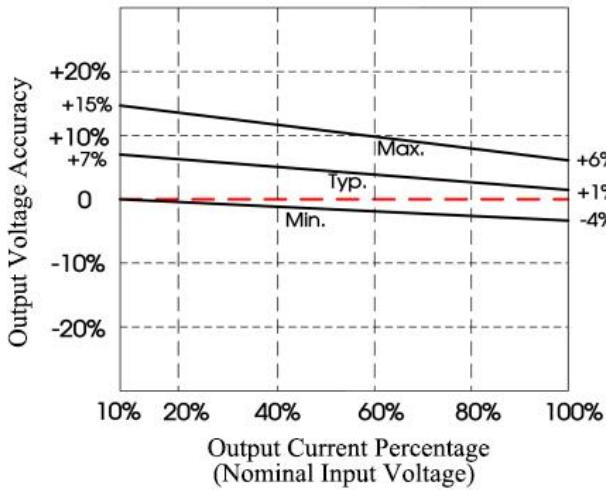


## Temperature Derating Curve



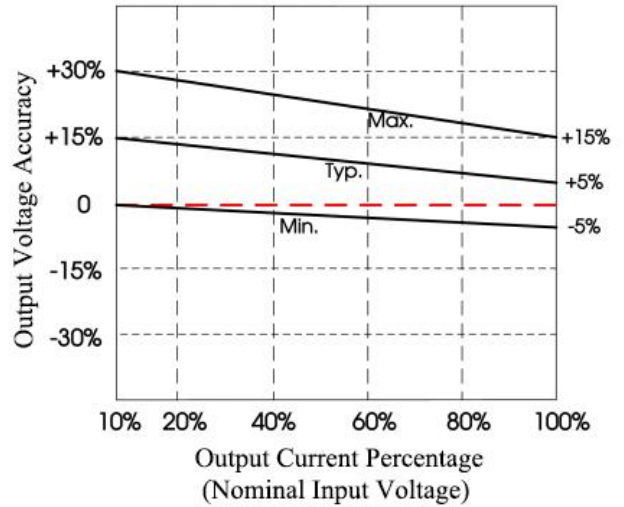
## Product Characteristic Curve

Output Regulation Curve



+Vo output regulation curve

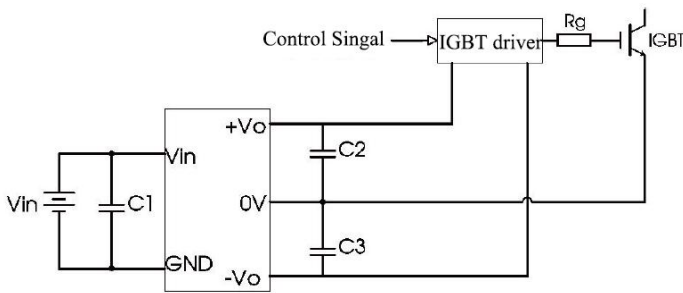
Output Regulation Curve



-Vo output regulation curve

**Design and Application Reference**

Typical application

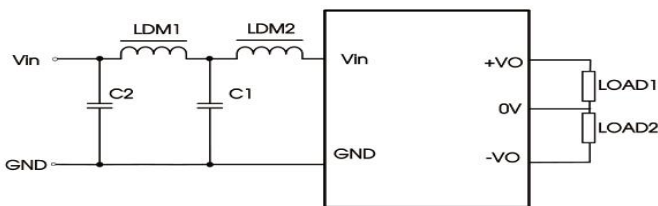


<b>C1/ C2 /C3</b>
100uF/35V (Low internal resistance capacitor)

Note: A ceramic capacitor with a capacitance of 1uf-10uf can be connected in parallel with the two sections of capacitors C2 and C3 to reduce ripple noise.

Diagram 1

EMC Recommended circuit



Input voltage (VDC)		12/15/24
EMI	C1、C2	4.7μF /50V
	LDM1	12μH
	LDM2	47μH

Diagram 2

**Note:**

1. The product should be used within the specification range, otherwise it will cause permanent damage to the product;
2. This product cannot be used in parallel and does not support hot swapping;
3. The connection line between the module power supply and the IGBT driver should be as short as possible;
4. The output filter capacitor (low internal resistance electrolytic capacitor) is close to the module power supply and IGBT driver;
5. The average output power of the driver must be less than the output power of the power module;
6. If the product works below the minimum required load, it cannot be guaranteed that the product performance meets all the performance indicators in this manual;
7. All the index testing methods in this article are based on the company's corporate standards;
8. Our company can provide product customization;
9. Product specifications are subject to change without notice. Please pay attention to the latest manual published on our official website.

**Guangzhou Aipu Electron Technology Co., Ltd**

Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.

Tel: 86-20-84206763 Fax: 86-20-84206762 HOTLINE: 400-889-8821

E-mail: sales@aipu-elec.com Website: www.aipupower.com