

International  
**IR** Rectifier

Plug N Drive™ Integrated Power  
Module for Appliance Motor Drive

**IRAMS06UP60B**  
**iMOTION™ Series**

**6A, 600V**  
**with Internal Shunt Resistor**

### Description

International Rectifier's IRAMS06UP60B is an Integrated Power Module developed and optimized for electronic motor control in appliance applications specifically for VF compressor drives for refrigerators and freezer or in heating and ventilation as electronic fan controls. The IRAMS06UP60B offers an extremely compact, high performance AC motor-driver in a single isolated package for a very simple design. An internal shunt is included and offers easy current feedback and overcurrent monitor for precise control and safe operation. A built-in temperature monitor and over-current protection, along with the short-circuit rated IGBTs and integrated under-voltage lockout function, deliver high level of protection and fail-safe operation. The integration of the bootstrap diodes for the high-side driver section, and the single polarity power supply required to drive the internal circuitry, simplify the utilization of the module and deliver further cost reduction advantages.

### Features

- Internal Shunt Resistor
- Integrated Gate Drivers and Bootstrap Diodes
- Temperature Monitor
- Overcurrent shutdown
- Fully Isolated Package.
- Low  $V_{CE(on)}$  Non Punch Through IGBT Technology
- Undervoltage lockout for all channels
- Matched propagation delay for all channels
- Schmitt-triggered input logic
- Cross-conduction prevention logic
- Lower di/dt gate driver for better noise immunity
- Motor Power range 0.1~0.5kW / 85~253 Vac
- Isolation 2000V<sub>RMS</sub> / 1min



### Absolute Maximum Ratings

Parameter	Description	Max. Value	Units
$V_{CES}$	Maximum IGBT Blocking Voltage	600	V
$V^+$	Positive Bus Input Voltage	450	
$I_o @ T_C=25^\circ C$	RMS Phase Current	6	A
$I_o @ T_C=100^\circ C$	RMS Phase Current	3	
$I_{pk}$	Max Peak Phase Current (tp<100ms) (see Note 1)	9	
$F_p$	Maximum PWM Carrier Frequency	20	kHz
$P_d$	Maximum Power dissipation per Phase	7.5	W
$V_{iso}$	Isolation Voltage (1min)	2000	V <sub>RMS</sub>
$T_J$ (IGBT & Diodes)	Operating Junction temperature Range	-40 to +150	°C
$T_J$ (Driver IC)	Operating Junction temperature Range	-40 to +150	
T	Mounting torque Range (M3 screw)	0.8 to 1.0	Nm

Note 1: Limited by current protection, see table "Inverter Section Electrical Characteristics" on page 3

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## Internal Electrical Schematic - IRAMS06UP60B

