

#### *MOTION*™ Reference Designs

IRMCS1271	IRMCS1671	IRMCS1043
<ul style="list-style-type: none"> <li>Complete PM motor design platform</li> <li>Featuring IRMCF171 Digital Control IC</li> <li>230V input</li> <li>Up to 1100W depending on module</li> <li>Features SIP1A module</li> <li>Single or Leg Shunt</li> <li>MCE Wizard</li> <li>MCE Designer</li> <li>Software support files including 8051 sample code</li> </ul>	<ul style="list-style-type: none"> <li>Complete PM motor design platform</li> <li>Featuring IRMCF171 Digital Control IC</li> <li>230V input</li> <li>Up to 100W depending on module</li> <li>Features 12x12mm <math>\mu</math>IPM surface mount module</li> <li>Leg Shunt</li> <li>MCE Wizard</li> <li>MCE Designer</li> <li>Software support files including 8051 sample code</li> </ul>	<ul style="list-style-type: none"> <li>Complete PM motor design platform with input PFC control</li> <li>Featuring IRMCF143 Digital Control IC</li> <li>230V input</li> <li>1500W</li> <li>Features SIP1A module</li> <li>Single Shunt</li> <li>MCE Wizard</li> <li>MCE Designer</li> <li>Software support files including 8051 sample code</li> </ul>

\*For additional reference designs, please contact your sales representative.

# International Rectifier

THE POWER MANAGEMENT LEADER

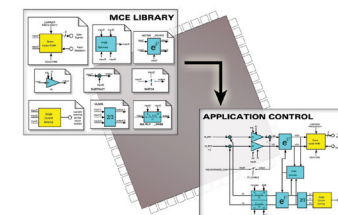
MOTOR CONTROL

## *MOTION*™ Integrated Design Platform

#### Features at a Glance

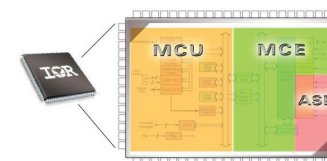
##### Digital Control

- Motion Control Engine™ eliminates hall effect sensors
- Integrated microcontroller enables application layer software development
- Graphical algorithm eliminates coding



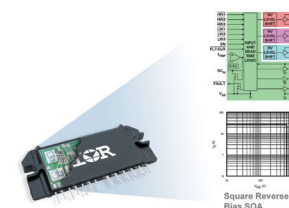
##### Analog Interface

- Embedded Analog Signal Engine™ integrates all signal conditioning and conversion circuits for single, current shunt
- Industry-leading high voltage ICs



##### Power Modules

- Utilize three-phase monolithic gate driver IC matched with highly efficient Trench IGBTs
- Insulated metal substrate technology for reduced EMI
- Replaces over 20 discrete parts



#### Variable Speed, Sensorless Motor Control

IR's *iMOTION*™ delivers everything you need to design a complete motion control subsystem for variable-speed three-phase motor applications.

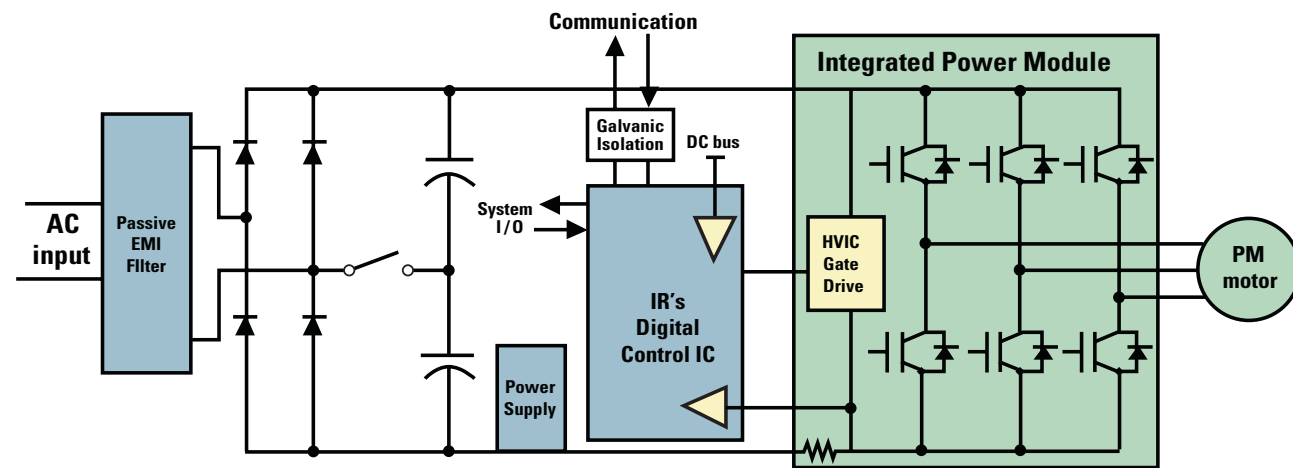
From the front panel and power entry to the motor terminals, *iMOTION*™ brings powerful digital, analog and power silicon complete with algorithms, development software and design tools.

#### With *iMOTION*\* you can design a system that:

- Turns a motor for evaluation in days instead of weeks
- Performs more efficiently without added system cost
- Helps you meet if not beat aggressive design schedules

\* IR's *iMOTION*™ (ai mo shan), representing the intelligent motion control, is a trademark of International Rectifier Corp.

## ***iMOTION*** Features and Benefits



### Variable Speed Drive

- Optimum control
- Maximum efficiency
- Retrofit a fixed speed system

## Built-In Field-Oriented Control

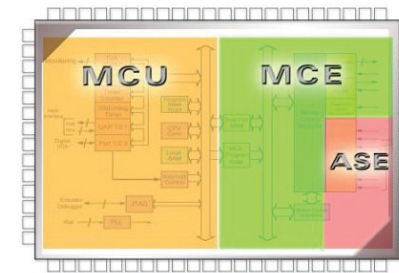
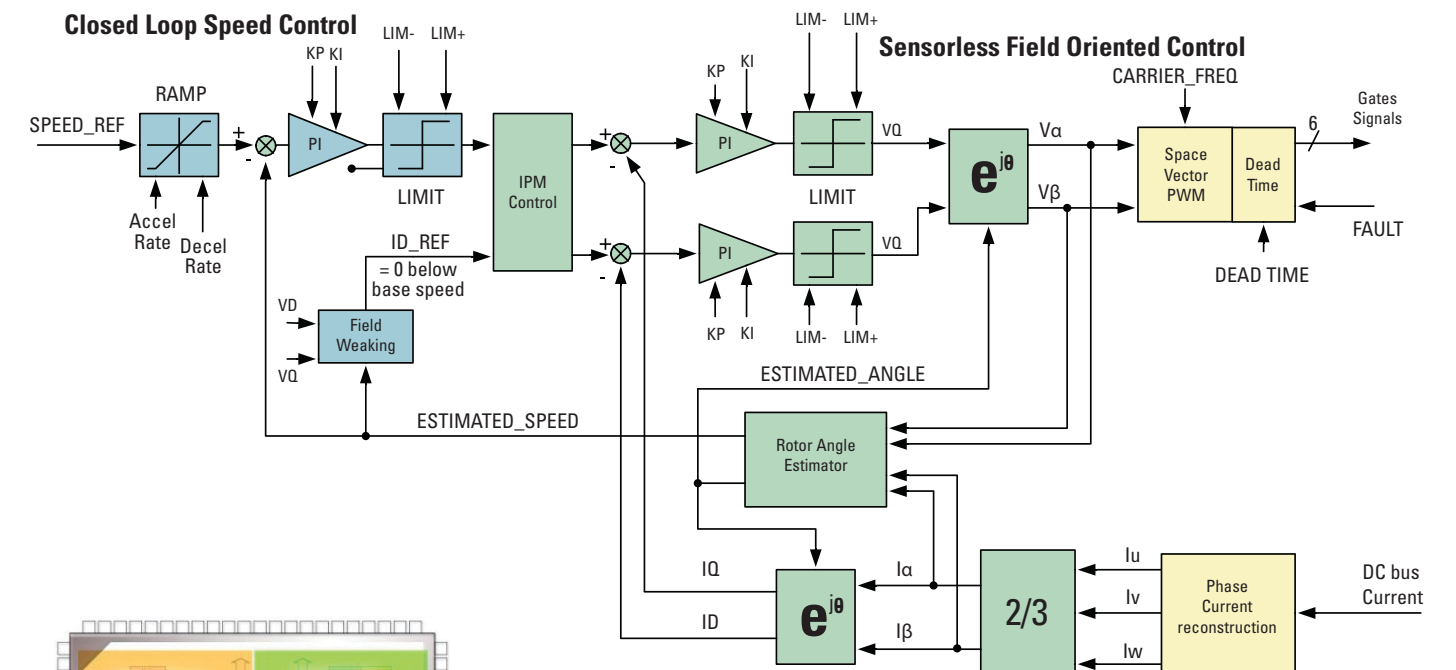
- Maximum torque-per-amp
- Torque and speed feedback for higher level features and protections
- For induction motors, lower currents than V/Hz control
- Zero speed controller

### Add Power Factor Correction

- Meet the latest PFC regulations

## Control Up To Two Motors & PFC

- Choose the right controller for your needs



### Suitable for a Diverse Range of Applications :

- Fans
- Pumps
- Compressors
- Power Tools
- Industrial Motors
- Washers

### Customize for General Purpose Power Inverter Applications :

- Power Generation
- 3-phase PFC

## Fast, Simplified Design Process

- Configuration utility to quickly get your motor running
- Control algorithms embedded in the control IC
- Move on to application testing and hardware design quickly

## Delivering Energy Savings

- Designed for energy efficient Permanent Magnet motors
- Field Oriented Control reduces AC Induction motor currents
- Variable speed to run system at optimum condition

## Sensorless Drive

- Eliminates Encoders/Hall Sensors
- Provides higher reliability
- Offers lower cost
- Single shunt for minimum component count

### Novel Two-Core Architecture

- Highly customizable algorithm
- Graphical design eliminates motor control coding
- Integrated MCU offers monitoring, fault handling, and communication independent of Motor control