International
IOR Rectifier

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IRMCS203

Sensorless Drive Design Platform
Accelerator™ based System Manual

Features

- **Low cost complete sensorless drive design platform**
- **Works with any types of PM motor**
- **No voltage feedback required**
- **Sinusoidal commutation**
- **Low cost FPGA (Spartan2E-300) based closed loop current and velocity control**
- **Simple design with IR2175 current sensing HVIC**
- **230V/1.0kW maximum output power with 600V/20A advanced Plug-N-Drive™ IGBT module**
- **Configurable architecture for motor/drive parameters**
- **Scalable output power rating (500W/1kW)**
- **Low cost A/D (ADS7818) interface with multiplexer**
- **ServoDesigner™ tool for easy operation**
- **RS232C/RS422 host interface**
- **4-channel D/A for diagnostics and monitor function**
- **Parallel interface for microcontroller expansion or debug port**
- **Over-current and ground fault protection**
- **Over-voltage / Under-voltage protection**
- **Dynamic Braking control with brake IGBT/FWD**

Product Summary

Speed operation range (typical)	5 to 100%
High speed operation	100,000rpm (2pole)
Speed accuracy	0.01%
Speed resolution	15bit
PWM carrier frequency	60 kHz max
Sensorless control computation time	10 usec
Continuous output current	3/6 Arms (.5/1kW)
Overload output current	8/16 Arms (.5/1kW)
Maximum modulation index	1.2
Max RS232C speed	57.6 kbps
Optional RS422 communication	1Mbps



Description

IRMCS203 is a complete sensorless drive design platform for AC permanent magnet motor applications. The drive is rated up to 1.0kW. The system contains complete hardware and preloaded object code for the FPGA, and the ServoDesigner™ software. Complete hardware schematics and B/Ms are provided so that user can adapt design into specific needs. IRMCO203 downloadable object code is also available for volume usage of IRMCS203 design. User can evaluate high performance servo drive with a specific motor, and tailor the drive design

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