International **IOR** Rectifier

IRMCS201
Single Axis Servo Drive Design Platform
Accelerator™ based System Manual

Features

- ■ **Low cost complete AC servo drive design platform**
- ■ **Low cost FPGA (Spartan2) based closed loop torque 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**
- ■ **High bandwidth torque loop response**
- ■ **Flexible drive configuration (PMAC or induction motor)**
- ■ **Scalable output power rating (500W/1kW)**
- ■ **Quadrature encoder interface**
- ■ **Low cost A/D interface with multiplexer**
- ■ **ServoDesigner™ tool for easy operation**
- ■ **RS232C/RS422 and fast SPI interface (standard)**
- ■ **Built-in trace buffer memory 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**
- ■ **Discrete I/Os (START, STOP, FAULT, FLTCLR, SYNC, DIR, PWMEN)**
- ■ **Configuration data retention at power up/down**

Description

IRMCS201 is a complete servo drive design platform for AC servo drive applications up to 1.5kW. 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. IRMCO201 downloadable object code is also available for volume usage of IRMCS201 design. User can evaluate high performance servo drive with a specific motor, and tailor the drive design

Product Summary

Current loop bandwidth (-3dB)	5 kHz(typ)
Speed loop bandwidth (adjustable)	400 Hz(typ)
PWM carrier frequency	70 kHz max
Hardware current loop execution time	6 usec
Improved low speed regulation by 1/T algorithm	
Continuous output current	3/6 Arms (.5/1kW)
Overload output current	8/16 Arms (.5/1kW)
Maximum modulation index	1.2
Max SPI comm. speed	6 MHz
Slave SPI configuration	
Max RS232C speed	57.6 kbps
Optional RTS/CTS control for RS232C	
Trace buffer memory	8 kbyte