

DIGITAL, PROGRAMMABLE, PLUG & PLAY,

IGBT DRIVER

2IPSE1S17-60

FOR MEDIUM AND HIGH POWER IGBTs

D A T A S H E E T

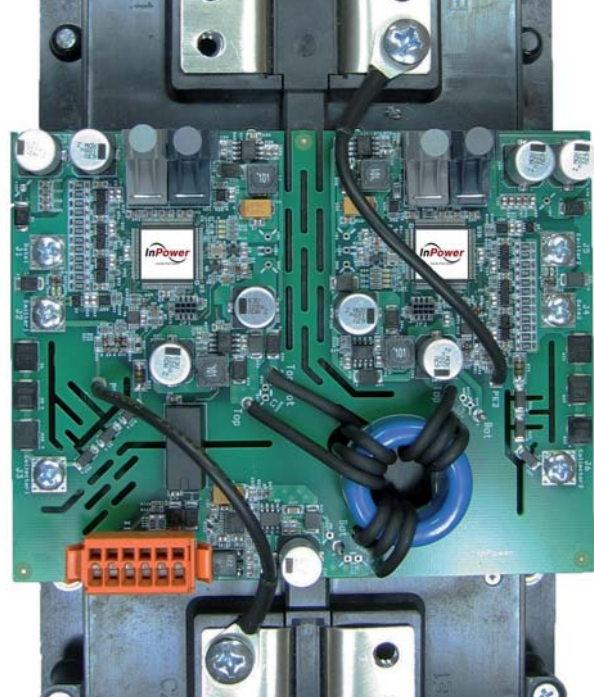
InPower Systems GmbH

Am Kornfeld 11
D-86932 Pürgen, Germany
Tel: +49-(0)8196-93000
Fax: +49-(0)8196-930020
Email: info@inpower-sys.com
VAT-Id: DE 221021830

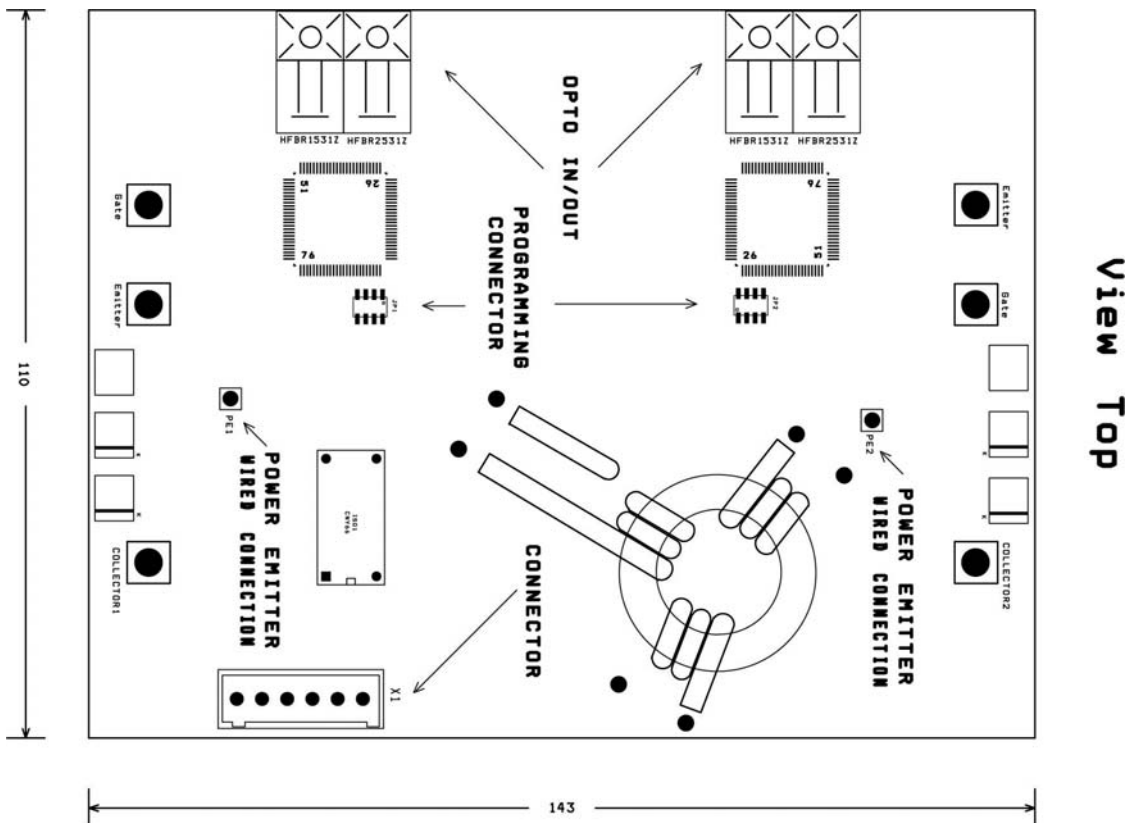
Prepared by: M. Wendt
Approved by: P. Kviz
Date of publication: July 2010
Revision: 1.2
Status: production

1. MAIN FEATURES

- Dual channel for dual- and multilevel topology
- Smart switching with variable gate resistors
- Tuned according to the application
- Reliable protection against
 - over-current in all short circuit conditions
 - over-voltage during turn-off
- Advanced control and protection functions
 - fdesaturation monitoring
 - di/dt monitoring
 - feedback clamping with active function
 - multiple soft shut down
 - supply voltage monitoring
 - digital input filter for switching signals
- DC/DC converter included
- Screw connection with Mega Power Dual IGBT modules (CM1100DY-34S and CM1800DY-34S)



2. MECHANICAL DIMENSIONS



3. KEY DATA

| <i>Parameter</i> | <i>Symbol</i> | <i>Value (at +25°C)</i> |
|--|------------------|-------------------------|
| Max. collector-emitter voltage | V_{CE} | 1700V |
| Input supply voltage range | V_{DC} | +14 to +30V |
| Output voltage: ON/OFF voltage | V_{ON}/V_{OFF} | $\pm 15V$ |
| Isolation testing voltage (V_{AC} RMS 50Hz / 1 min) | V_{ISOL} | 6000V |
| Switching frequency (max.) | $f_{S\ max}$ | 120kHz |
| Peak output current (per channel) | I_G | $\pm 70A$ |
| Peak output power (per channel) | $P_{DC/DC}$ | 3W |
| Quiescent current typically (at 15V) | I_{DC} | 0.3A |
| Quiescent current typically (at 30V) | I_{DC} | 0.24A |
| Max. input current at max. load (at 15V) | $I_{DC\ max}$ | 0.8A |
| Max. input current at max. load (at 24V) | $I_{DC\ max}$ | 0.65A |
| Coupling capacitance primary/secondary side (max.) | C_{io} | 2pF |
| Switching frequency of isolated converter | $f_{SMPC\ max}$ | 0.5MHz |
| Creepage distance (primary-secondary side) | | >16mm |
| Creepage distance (secondary LOW – secondary HIGH) | | >16mm |
| Frequency of logic controller | f | 20MHz |
| Operating temperature (measured on driver surface) | T_{OP} | -40 to +85°C |
| Storage temperature | T_{ST} | -40 to +85°C |
| Input driving and output error signal | optical | 660nm |
| Turn-on delay time | t_{pdON} | 400nsec |
| Turn-off delay time | t_{pdOFF} | 400nsec |
| Typical time of soft shut down | t_{SSD} | 1-2 μ sec |
| Max. system time between fault detection and error notification | t_{SYS} | 100nsec |
| Time between detection of desaturation and gate voltage falling edge | t_{pDES} | 300nsec |

4. INTERFACES

| <i>Interface</i> | <i>Part Type</i> | <i>Remarks</i> |
|---------------------|-------------------------------|---|
| Optical Receiver | HFBR-2531Z (Avago) | For suitable connectors see www.avagotech.com |
| Optical Transmitter | HFBR-1531Z (Avago) | |
| DC supply on PCB | FKC 2,5/2-STF-5,08 (Phoenix) | Connector: MSTBV 2,5/2-GF-5,08 (Phoenix) |

5. CABLE LENGTH

For the connection between DC/DC converter and the driver board as well as for the power emitter connection we recommend normal cable as short as possible.