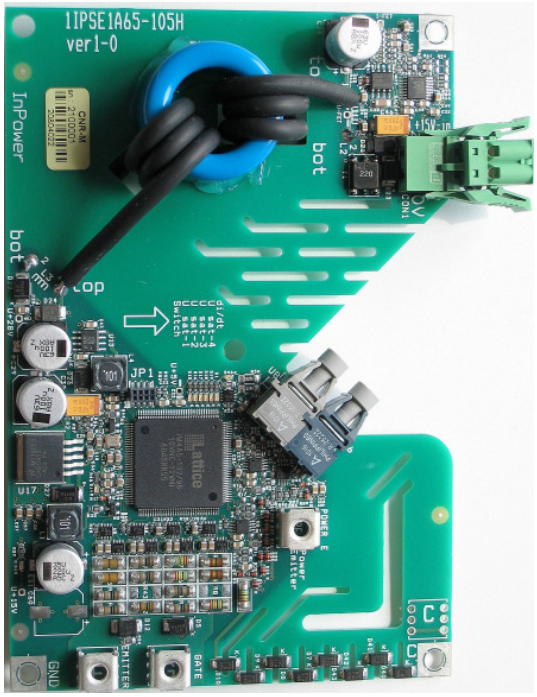
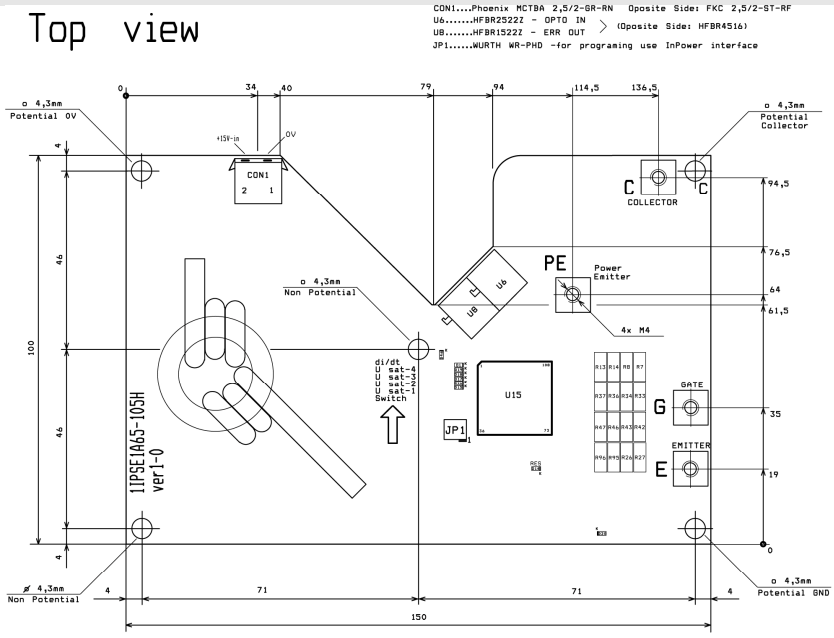
DIGITAL HIGH POWER IGBT GATE DRIVER

Main Features

- Single 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
  - four level desaturation monitoring
  - two level 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
- Cable connection with adaptation board matched for every type of IGBT module



Mechanical Dimensions



LEDs Diagnostic:

D1.....di/dt PROTECTION
D19.....Usat-4 PROTECTION
D18.....Usat-3 PROTECTION
D17.....Usat-2 PROTECTION
D16.....Usat-1 PROTECTION
D15.....SWITCH
D46.....+5V OK
D20.....+15V OK
D14.....RES RESET

InPower		
Size A4	Document DIM-1IPSE1A65-105H	Version ver1-0
Date 28/III 2011	Sheet 1 of 1	

Key Data

Parameter	*Symbol*	*Value (at +25°C)*
Max. collector-emitter voltage	V_{CE}	4500V
Input supply voltage range	V_{DC}	+14 to +30V
Output voltage: ON/OFF voltage	V_{ON}/V_{OFF}	±15V
Isolation testing voltage (V_{AC} RMS 50Hz / 1 min)	V_{ISOL}	10500V
Switching frequency (max.)	$f_{S\ max}$	120kHz
Peak output current	I_G	±70A
Peak output power	$P_{DC/DC}$	3W
Quiescent current typically	I_{DC}	0.25A (at 15V)
Max. input current at max. load	$I_{DC\ max}$	0.50A (at 15V)
Coupling capacitance primary/secondary side (typ.)	C_{io}	2pF
Switching frequency of isolated converter	$f_{SMPC\ max}$	0.5MHz
Creepage distance		>65mm
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}	1-2µsec
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

Interfaces

Interface	*Part Type*	*Remarks*
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)

Connections

Max. length of coaxial cable: 30cm. Max. length of simple cable: 7cm.
For gate and auxiliary emitter connections use coaxial cable RG58 C/U with auxiliary emitter connected to the shielding. For power emitter and auxiliary collector it is recommended to use HV isolation cable, for instance Radox 9 GKW-AX, 1.5mm^2.