

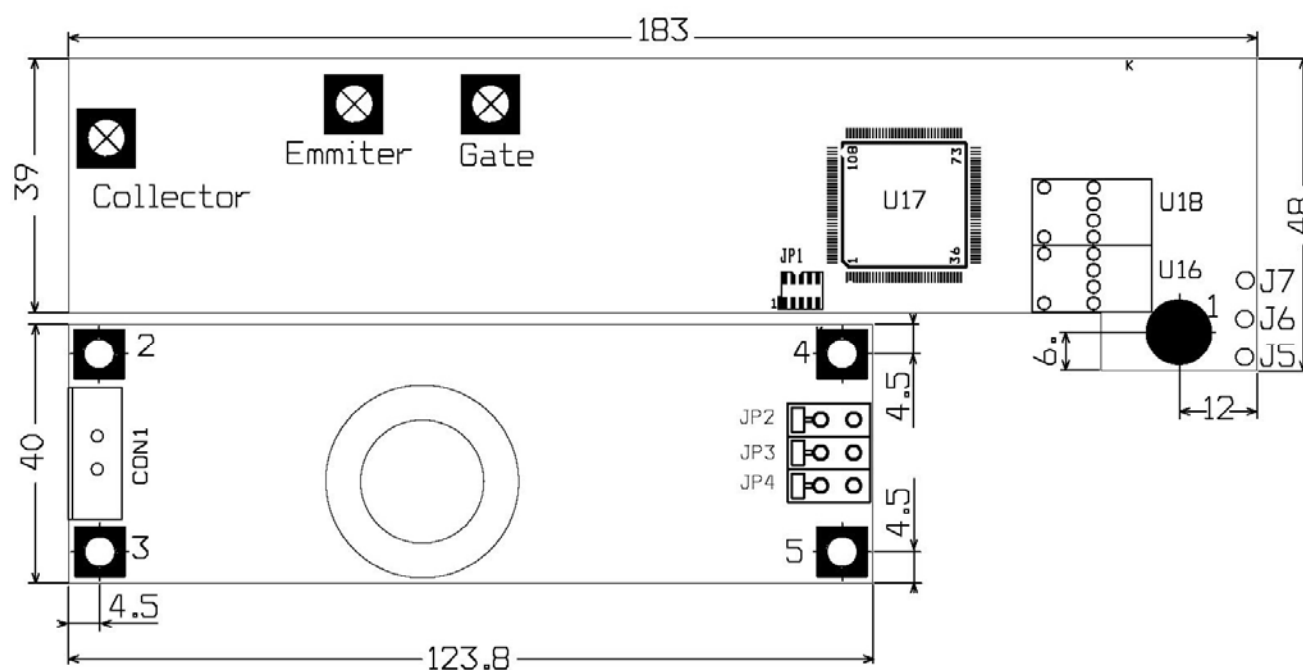
## DIGITAL HIGH POWER IGBT GATE DRIVER

### 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
- Screw connection with high power IGBT modules  
(base plate 130x140mm or 190x140mm)



### Mechanical Dimensions



# DATASHEET 1IPSE1S45-60



## 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	$V_{ON}/V_{OFF}$	$\pm 15V$
Isolation testing voltage ( $V_{AC}$ RMS 50Hz / 1 min)	$V_{ISOL}$	6000V
Switching frequency (max.)	$f_{S\ max}$	120kHz
Peak output current	$I_G$	$\pm 70A$
Peak output power	$P_{DC/DC}$	4W
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	$C_{io}$	typ. 1pF, max. 2pF
Switching frequency of isolated converter	$f_{SMPC\ max}$	0.5MHz
Creepage distance		>30mm
Frequency of logic controller	$f$	20MHz
Operating temperature (measured close to 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 <a href="http://www.avagotech.com">www.avagotech.com</a>
Optical Transmitter	HFBR-1531Z (Avago)	
DC supply on PCB	FKC 2,5/2-STF-5,08 (Phoenix )	Connector: 1 x MSTBV 2,5/2-GF-5,08 (part no. 1777073) (Phoenix)

## Connections

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.