

## 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
  - two level desaturation 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
- Wire connection with every type of IGBT module



### Mechanical Dimensions



### Interfaces

Input signal:	Fibreoptical TORX 194 (Toshiba)
Used optocoupler for ERROR feedback signal:	CNY66
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)

# DATASHEET 1IPSE1W17-50



## Key Data

Parameter	Symbol	Value (at +25°C)
Max. collector-emitter voltage	$V_{CE}$	1700V
Input supply voltage range	$V_{DC}$	+15 to +30V
Output voltage: ON/OFF voltage	$V_{ON}/V_{OFF}$	+15/-7V
Isolation testing voltage ( $V_{AC}$ RMS 50Hz / 1 min)	$V_{ISOL}$	5000V
Switching frequency (max.)	$f_{S\max}$	200kHz
Peak output current	$I_G$	±70A
Peak output power	$P_{DC/DC}$	15W
Quiescent current typically	$I_{DC}$	0.25A (at 24V)
Max. input current at max. load	$I_{DC\max}$	0.95A (at 24V)
Coupling capacitance primary / secondary side	$C_{io}$	typ. 1pF, max. 2pF
Switching frequency of isolated converter	$f_{SMPC\max}$	0.5MHz
Creepage distance		>15mm
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 signal	optical	660nm
Output error signal	electrical	
Turn-on / turn-off delay time	$t_{pdON} / t_{pdOFF}$	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

## 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<sup>2</sup>.