## DATASHEET 1IPSE1A17-60

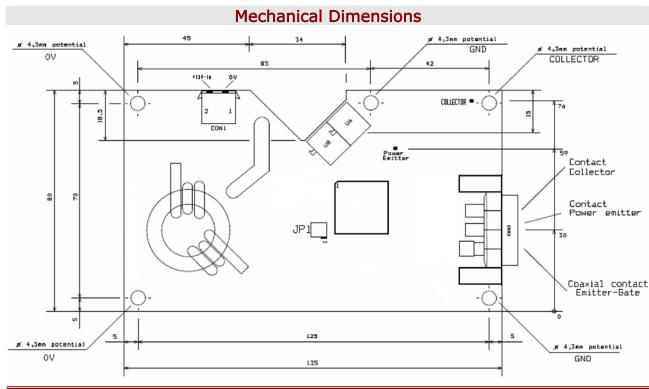


### DIGITAL HIGH POWER IGBT GATE DRIVER

#### **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





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Key Data			
Parameter	Symbol	Value (at +25°C)	
Max. collector-emitter voltage	V <sub>CE</sub>	1700V	
Input supply voltage range	$V_{DC}$	+14 to +30V	
Output voltage: ON/OFF voltage	V <sub>ON</sub> /V <sub>OFF</sub>	±15V	
Isolation testing voltage (V <sub>AC</sub> RMS 50Hz / 1 min)	V <sub>ISOL</sub>	6000V	
Switching frequency (max.)	f <sub>S max</sub>	120kHz	
Peak output current	I <sub>G</sub>	±70A	
Peak output power	P <sub>DC/DC</sub>	3W	
Quiescent current typically	I <sub>DC</sub>	0.25A (at 15V)	
Max. input current at max. load	I <sub>DC max</sub>	0.50A (at 15V)	
Coupling capacitance primary / secondary side	C <sub>io</sub>	typ. 1pF, max. 2pF	
Switching frequency of isolated converter	f <sub>SMPC max</sub>	0.5MHz	
Creepage distance		>30mm	
Frequency of logic controller	f	20MHz	
Operating temperature (measured close to driver surface)	T <sub>OP</sub>	-40 to +85°C	
Storage temperature	T <sub>ST</sub>	-40 to +85°C	
Input driving and output error signal	optical	660nm	
Turn-on delay time	t <sub>pdON</sub>	400nsec	
Turn-off delay time	t <sub>pdOFF</sub>	400nsec	
Typical time of soft shut down	t <sub>SSD</sub>	1-2µsec	
Max. system time between fault detection and error notification	t <sub>SYS</sub>	100nsec	
Time between detection of desaturation and gate voltage falling edge	t <sub>pDES</sub>	300nsec	

### **Interfaces**

<u>Interface</u>	Part Type	Remarks	
Optical Receiver	HFBR-2531Z (Avago)	For suitable connectors see	
Optical Transmitter	HFBR-1531Z (Avago)	www.avagotech.com	
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**

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>.

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