

DIGITAL, PROGRAMMABLE, PLUG & PLAY,

IGBT DRIVER

1IPSE1A45-105

FOR MEDIUM AND HIGH POWER IGBTs

D A T A S H E E T

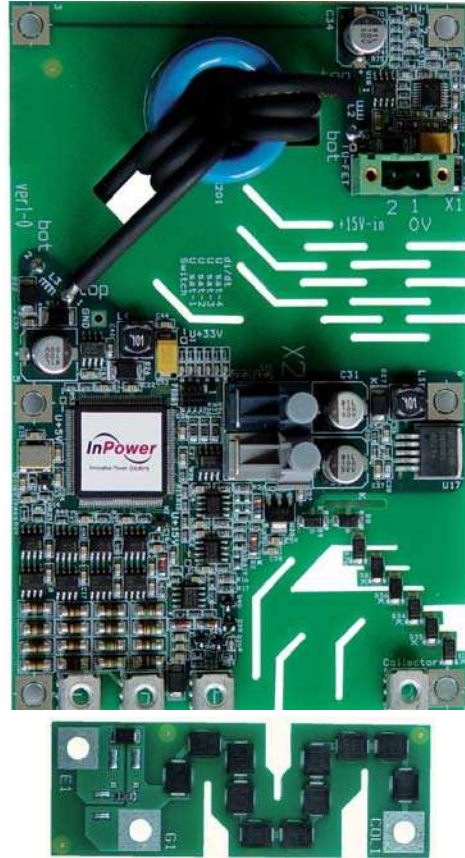
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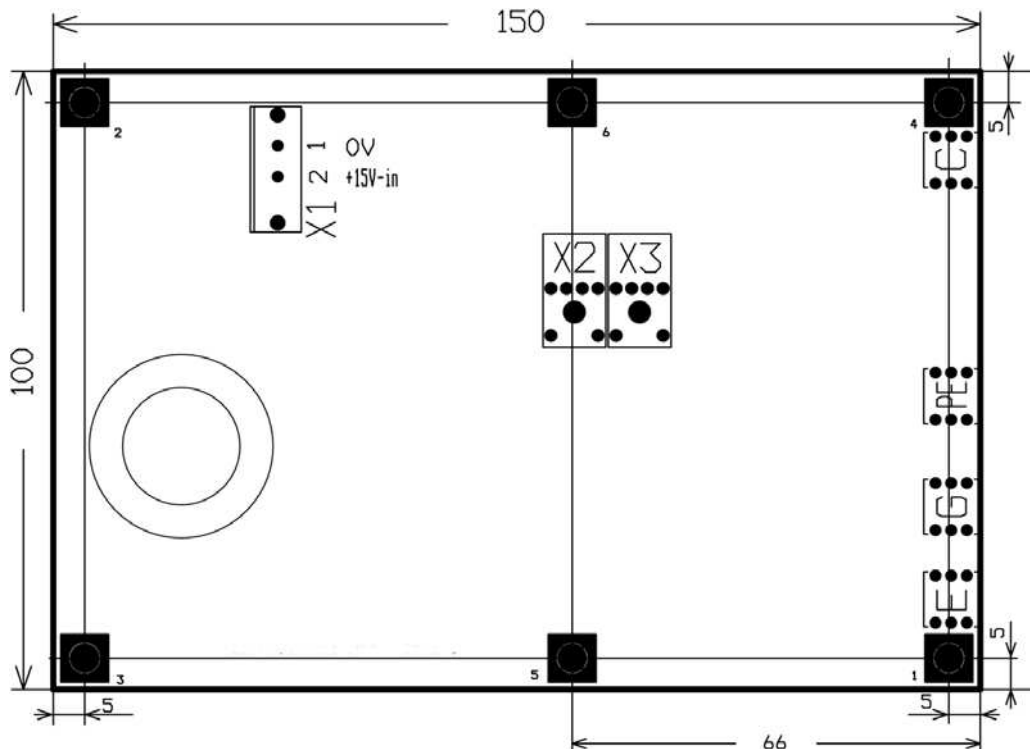
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1. MAIN FEATURES

- 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



2. MECHANICAL DIMENSIONS



3. 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}	10500V
Switching frequency (max.)	$f_{S\ max}$	120kHz
Peak output current	I_G	$\pm 70A$
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 (max.)	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}	1-2 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

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)

5. CABLE LENGTH

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 insulation cable, for instance Radox 9 GKW-AX, 1.5mm².