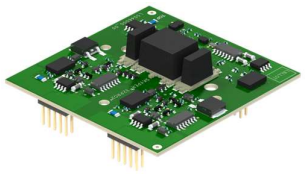
SKYPER 32 PRO 2nd Edition 12111



SKYPER®

IGBT Driver Core

Order Nr.: L5046001

SKYPER 32 Pro 2nd Edition 12111

Features*

- Two output channels
- Integrated potential free power supply
- Under voltage protection prim/sec
- Driver interlock top / bottom
- Dynamic short circuit protection
- Halt status with failure management
- External failure input (sec.)
- Soft turn-off
- IEC 60068-1 (climate) 40/085/56, no condensation and no dripping water permitted, non-corrosive, climate class 3K3 acc. EN60721
- Coated with varnish

Typical Applications

- Driver for IGBT modules in bridge circuits in industrial application
- DC bus voltage up to 1200V

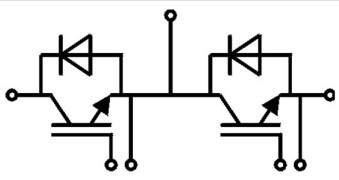
Footnotes

The insulation test is not performed as a series test at SEMIKRON and must be performed by the user

Isolation coordination in compliance with EN 61800-5-1 PDII, OVC III

Operating temperature is real ambient temperature around the driver core

Environmental conditions and detailed technical information are described in the Technical Explanation



Driver Core

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
V_S	Supply voltage primary	16	V
V_{iH}	Input signal voltage (HIGH)	V_s + 0.3	V
V_{iL}	Input signal voltage (LOW)	GND - 0.3	V
$I_{out(peak)}$	Output peak current	20	A
$I_{out(avg)}$	Output average current	90	mA
f_{max}	Max. switching frequency	50	kHz
V_{CE}	Collector emitter voltage sense across the IGBT	1700	V
dv/dt	Rate of rise and fall of voltage secondary to primary side	50	kV/µs
$V_{isol\ IO}$	Insulation test voltage input - output (AC, rms, 2s)	4000	V
V_{imp}	Impulse withstand voltage	8000	V
V_{isolPD}	Partial discharge extinction voltage, rms, $Q_{PD} \leq 10pC$	1500	V
$Q_{out/pulse}$	Max. rating for output charge per pulse	15	µC
T_{op}	Operating temperature	-40 ... 105	°C
T_{stg}	Storage temperature	-40 ... 105	°C

Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
V_s	Supply voltage primary side	14.4	15	15.6	V
I_S	Supply current primary (no load)	90		140	mA
	Supply current primary side (full load)			850	mA
V_I	Input signal voltage on/off		15/0		V
V_{IT+}	Input threshold voltage (HIGH)	10.8			V
V_{IT-}	Input threshold voltage (LOW)			4.6	V
$R_{IN(sw)}$	Input resistance (switching/HALT signals)		100		kΩ
$C_{IN(sw)}$	Input capacitance (switching signals)			0.01	nF
$V_{G(on)}$	Turn on output voltage		15		V
$V_{G(off)}$	Turn off output voltage		-7		V
f_{ASIC}	ASIC system switching frequency		8		MHz
$t_{d(on)IO}$	Input-output turn-on propagation time		1.2		µs
$t_{d(off)IO}$	Input-output turn-off propagation time		1.2		µs
$t_{d(err)}$	Error input-output propagation time	3.1		5.8	µs
t_{pRESET}	Error reset time		0.009		ms
t_{TD}	Top-Bot interlock dead time	0		4.3	µs
C_{ps}	Coupling capacitance prim sec		12		pF
$l_{clear(PS)}$	Shortest distance in air, primary side to secondary side	12.2			mm
$l_{clear(SS)}$	Shortest distance in air, secondary sides	6.1			mm
$l_{creep(PS)}$	Shortest distance along the surface, primary side to secondary side (CTI ≥ 175)	12.2			mm
$l_{creep(SS)}$	Shortest distance along the surface, secondary sides (CTI ≥ 175)	6.1			mm
w	Weight		34		g
MTBF	Mean Time Between Failure		3.5		10^6h

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

***IMPORTANT INFORMATION AND WARNINGS**

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