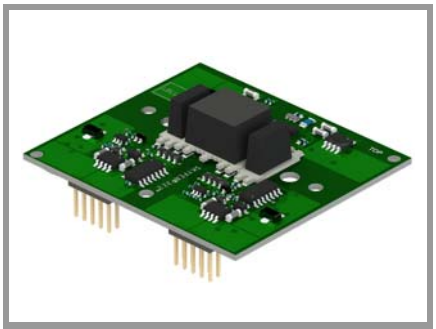
SKYPER 32 2nd edition



SKYPER®

IGBT Driver Core

Order Nr.: L5046101

Driver with cover - Order Nr.: L5046104

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Features*

- Two output channels
- Integrated potential free power supply
- Under voltage protection
- Driver interlock top / bottom
- Dynamic short circuit protection
- Shut down input
- Failure management
- RoHS compliant
- UL recognized, file no. E242581
- IEC 60068-1 (climate) 40/085/56, no condensation and no dripping water permitted, non-corrosive, climate class 3K3 acc. EN60721

Typical Applications

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

Footnotes

Please Note: the insulation test is not performed as a series test at SEMIKRON and must be performed by the user according to VDE 0110-20

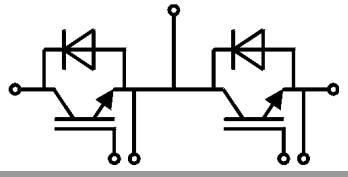
Isolation coordination in compliance with EN61800-5-1 PD2
Operating temperature is real ambient temperature around the driver core
Degree of protection: IP00

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
V_s	Supply voltage primary	16	V
V_{iH}	Input signal voltage (HIGH)	Vs + 0.3	V
V_{iL}	Input signal voltage (LOW)	GND - 0.3	V
$I_{outPEAK}$	Output peak current	20	A
$I_{outAVmax}$	Output average current	70	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_{isolPD}	Partial discharge extinction voltage, rms, $Q_{PD} \leq 10pC$	1500	V
V_{isol12}	Insulation test voltage output 1 - output 2 (AC, rms, 2s)	1500	V
$R_{Gon\ min}$	Minimum rating for external R_{Gon}	1.2	Ω
$R_{Goff\ min}$	Minimum rating for external R_{Goff}	1.2	Ω
$Q_{out/pulse}$	Max. rating for output charge per pulse	9	µC
T_{op}	Operating temperature	-40 ... 105	°C
T_{stg}	Storage temperature	-40 ... 85	°C

Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
V_s	Supply voltage primary side	14.4	15	15.6	V
I_{S0}	Supply current primary (no load)		80		mA
	Supply current primary side (max.)			700	mA
V_i	Input signal voltage on / off		15 / 0		V
V_{IT+}	Input threshold voltage (HIGH)			12.3	V
V_{IT-}	Input threshold voltage (LOW)	4.6			V
R_{IN}	Input resistance (switching/HALT signal)		10		kΩ
$V_{G(on)}$	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		1.1		µs
$t_{d(off)IO}$	Input-output turn-off propagation time		1.1		µs
$t_{d(err)}$	Error input-output propagation time	5.4		7.9	µs
t_{pRESET}	Error reset time		0.009		ms
t_{TD}	Top-Bot interlock dead time		3	4.3	µs
C_{ps}	Coupling capacitance prim sec		12		pF
w	weight		28		g
MTBF	Mean Time Between Failure		4.2		10^6h



Driver Core

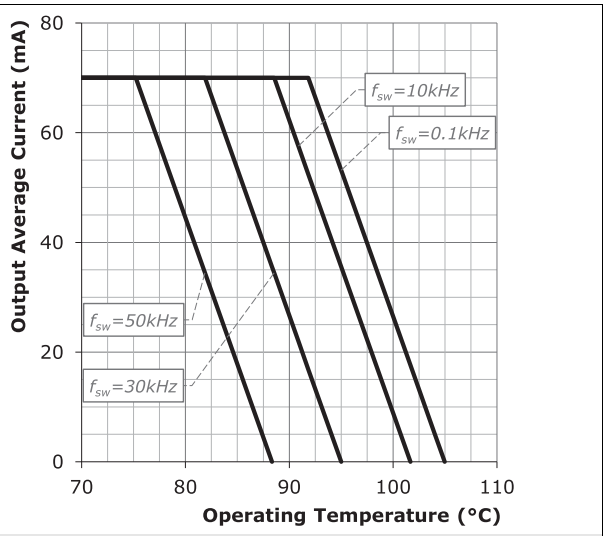


Fig. 1: Maximum Output Current

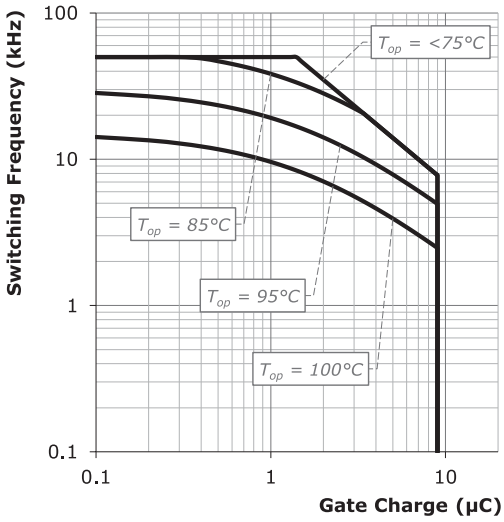


Fig. 2: Maximum Switching Frequency

This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

***IMPORTANT INFORMATION AND WARNINGS**

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