SKYPER 42 R/02 (coated)



SKYPER®

IGBT Driver Core

Order Nr.: L5054305

SKYPER 42 R/02 (coated)

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
- UL recognized, ROHS
- IEC 60068-1 (climate) 40/085/56, no condensation and no dripping water permitted, non-corrosive, climate class 3K3 acc. EN60721

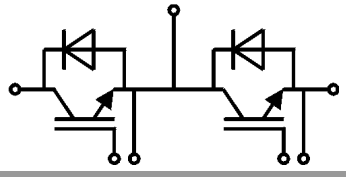
Typical Applications

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

Footnotes

Insulation test voltage with external high voltage diode
The insulation test is not performed as a series test at SEMIKRON
The driver power can be expanded to 50µC with external boost capacitors

Isolation coordination in compliance with EN50178 PD2
Operating temperature is real ambient temperature around the driver core
Degree of protection: IP00



Driver Core

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	30	A
$I_{outAVmax}$	Output average current	150	mA
f_{max}	Max. switching frequency	100	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	100	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}	0.8	Ω
$R_{Goff\ min}$	Minimum rating for external R_{Goff}	0.8	Ω
$Q_{out/pulse}$	Max. rating for output charge per pulse	50	µC
T_{op}	Operating temperature	-40 ... 85	°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)		125		mA
	Supply current primary side (max.)			800	mA
V_i	Input signal voltage on/off		15 / 0		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		-8		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		2.3		µs
t_{pRESET}	Error reset time		0.009		ms
t_{TD}	Top-Bot interlock dead time		2		µs
C_{ps}	Coupling capacitance prim sec		3		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		40		g
MTBF	Mean Time Between Failure Ta = 40°C		2.1		10^6h

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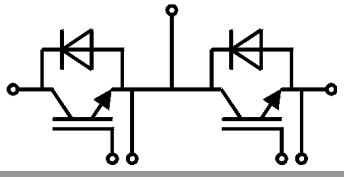
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This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

***IMPORTANT INFORMATION AND WARNINGS**

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