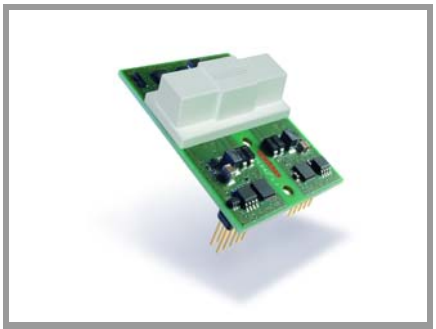
SKYPER 42 LJ R



SKYPER®

IGBT Driver Core

SKYPER 42 LJ R

Features

- Two output channels
- Integrated power supply
- Separated failure/signal transmission
- Adjustable dead time
- Dynamic short cirucit protection with SoftOff
- Adjustable filter setting
- Multi failure management
- ROHS, UL recognized
- 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

Isolation test voltage with external high voltage diode
The isolation test is not performed as a series test at SEMIKRON
The driver power can be expanded to 20µC with external boost capacitors

Isolation coordination in compliance with EN50178 PD2
Operating temperature is real ambient temperature around the driver core

Driver Core

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
V_s	Supply voltage primary	15.6	V
V_{iH}	Input signal voltage (HIGH)	Vs + 0.3	V
V_{iL}	Input signal voltage (LOW)	GND - 0.3	V
$Iout_{PEAK}$	Output peak current	20	A
$Iout_{AVmax}$	Output average current	120	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
$V_{isol\ IO}$	Isolation voltage in - out (AC, rms, 60s) type test	4000	V
V_{isolPD}	Partial discharge extinction voltage, rms, $Q_{PD} \leq 10pC$	1460	V
V_{isol12}	Isolation test voltage out 1 - out 2 (AC, rms, 2s)	2500	V
$R_{Gon\ min}$	Minimum rating for total R_{Gon}	1.6	Ω
$R_{Goff\ min}$	Minimum rating for total R_{Goff}	1.6	Ω
$Q_{out/pulse}$	Max. rating for output charge per pulse	20	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)		65		mA
	Supply current primary side (max.)			700	mA
V_i	Input signal voltage on / off		15 / 0		V
V_{IT+}	Input treshold voltage HIGH	8.6			V
V_{IT-}	input threshold voltage (LOW)	6.7			V
R_{IN}	Input resistance (switching/HALT signal)		10		kΩ
$V_{G(on)}$	Turn on output voltage		14.8		V
$V_{G(off)}$	Turn off output voltage		-8		V
f_{ASIC}	Asic system switching frequency		40		MHz
$t_{d(on)IO}$	In-out turn-on delay time (analogue SPS)		0.5		µs
$t_{d(off)IO}$	In-out turn-off delay (analogue SPS)		0.5		µs
$t_{d(err)}$	Error input-output propagation time		0.7		µs
t_{pRESET}	Error reset time	0.03			ms
t_{TD}	Top-Bot dead time (adjustable)		2		µs
C_{ps}	Coupling capacitance prim sec		3.5		pF
w	weight		22		g
MTBF	Mean Time Between Failure Ta = 40°C, max load		7.5		10^6h

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

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.