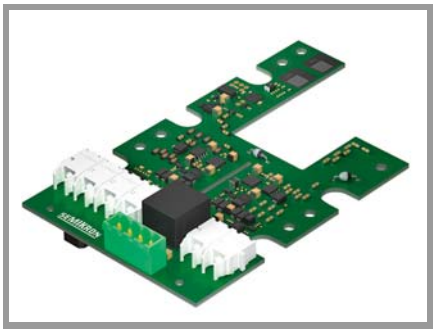
SKYPER PRIME O 1700V 1kA PP



SKYPER®

IGBT Driver for FF1000R17IE4

Order Nr. L5068111

SKYPER PRIME O 1700V 1kA PP

Features*

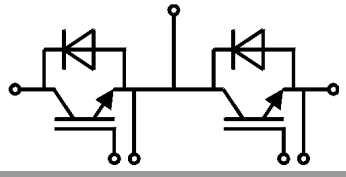
- Dynamic short circuit detection with SoftOff
- Galvanic isolated DC link measurement
- Galvanic isolated temp measurement
- PWM output for sensor signals
- Over voltage trip
- ROHS, UL compliant
- DC Bus up to 1200V
- Optical Interface

Typical Applications

- Regenerative inverters
- Traction
- Large drives

Remarks

- For environmental conditions please check technical explanation
- The driver has to be 100% tested for high voltage before use



Two channel driver

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
V_s	Supply voltage primary	30	V
P_{in}	Optical power (POF)	-24	dBm
P_{in_off}	Optical power off-state (POF)	-40	dBm
$Iout_{PEAK}$	Output peak current	15	A
$Iout_{AVmax}$	Output average current	100	mA
f_{max}	Max. switching frequency 85°C	10	kHz
			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)	5000	V
$Q_{out/pulse}$	Max. rating for output charge per pulse	10	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	23.3	24	24.7	V
I_{S0}	Supply current primary (no load)		85		mA
	Supply current primary side (max.)			1000	mA
V_{IT+}	Input treshold voltage			Light	V
V_{IT-}	Input treshold voltage	No light			V
$V_{G(on)}$	Turn on output voltage		15		V
$V_{G(off)}$	Turn off output voltage		-8		V
$t_{d(on)IO}$	Input-output turn-on propagation time		0.4		µs
$t_{d(off)IO}$	Input-output turn-off propagation time		0.4		µs
$t_{d(err)SCP}$	Error sec - prim propagation time		0.6		µs
t_{SIS}	Short pulse suppression - sec		0.4		µs
t_{POR}	Power-On-Reset completed		0.1		s
V_{CEstat}	Reference voltage for V_{CE}-monitoring		8.5		V
t_{bl}	VCE monitoring blanking time (dynamic)		4		µs
V_{DCtrip}	Over voltage trip level		1250		V
R_{Gon}	Driver gate resistor at switch-on		0.4		Ω
R_{Goff}	Driver gate resistor at switch-off		5		Ω
MTBF	Mean Time Between Failure Ta = 40°C		3		10^6h

Power Supply

PIN	Signal	Function	Specifications
X1:01	IF_PWR_24P	Driver power supply	Stabilized +24V ±3%
X1:02	IF_GND	GND	To be connected to ground
X1:03	IF_PWR_24P	Driver power supply-can be used for parallel power supply connection with other drivers	Stabilized +24V ±3%
X1:04	IF_GND	GND	To be connected to ground

Controller Interface

PIN	Signal	Function	Specifications
X10	IF_ERROR_TOP	ERROR output TOP	noLight = ERROR
X11	IF_HB_TOP	Switching signal input (TOP switch)	noLight=TOP switch off, Light=TOP switch on
X20	IF_ERROR_BOT	ERROR output BOT	noLight=ERROR
X21	IF_HB_BOT	Switching signal input (BOTTOM switch)	noLight=TOP switch off, Light=TOP switch on
X22	IF_TEMP	Digitized NTC signal	PWM output
X23	IF_DC_LINK	Digitized DC Link signal	PWM output

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

***IMPORTANT INFORMATION AND WARNINGS**

The specifications of SEMIKRON products may not be considered as guarantee or assurance of product characteristics ("Beschaffenheitsgarantie"). The specifications of SEMIKRON products describe only the usual characteristics of products to be expected in typical applications, which may still vary depending on the specific application. Therefore, products must be tested for the respective application in advance. Application adjustments may be necessary. The user of SEMIKRON products is responsible for the safety of their applications embedding SEMIKRON products and must take adequate safety measures to prevent the applications from causing a physical injury, fire or other problem if any of SEMIKRON products become faulty. The user is responsible to make sure that the application design is compliant with all applicable laws, regulations, norms and standards. Except as otherwise explicitly approved by SEMIKRON in a written document signed by authorized representatives of SEMIKRON, SEMIKRON products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury. No representation or warranty is given and no liability is assumed with respect to the accuracy, completeness and/or use of any information herein, including without limitation, warranties of non-infringement of intellectual property rights of any third party. SEMIKRON does not assume any liability arising out of the applications or use of any product; neither does it convey any license under its patent rights, copyrights, trade secrets or other intellectual property rights, nor the rights of others. SEMIKRON makes no representation or warranty of non-infringement or alleged non-infringement of intellectual property rights of any third party which may arise from applications. Due to technical requirements our products may contain dangerous substances. For information on the types in question please contact the nearest SEMIKRON sales office. This document supersedes and replaces all information previously supplied and may be superseded by updates. SEMIKRON reserves the right to make changes.