

SKYPER PRIME 1000A



SKYPER®

IGBT Driver for Primepack and SEMITRANS 10

Order Nr. L5066801

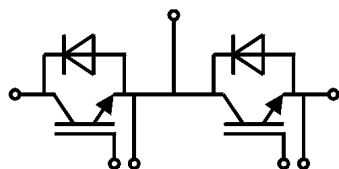
SKYPER PRIME 1000A

Features

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

Typical Applications*

Regenerative inverters
Traction
Large drives
Marine



Two channel driver

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
$I_{outPEAK}$	Output peak current	15	A
$I_{outAVmax}$	Output average current	150	mA
f_{max}	Max. switching frequency	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/ μ s
V_{isolIO}	Isolation test voltage input - output (AC, rms, 2s)	5000	V
$Q_{out/pulse}$	Max. rating for output charge per pulse	10	μ C
T_{op}	Operating temperature	-40 ... 85	$^{\circ}$ C
T_{stg}	Storage temperature	-40 ... 85	$^{\circ}$ C

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
V_s	Supply voltage primary side	14.4	15	15.6	V
I_{SO}	Supply current primary (no load)		100		mA
	Supply current primary side (max.)			1000	mA
V_i	Input signal voltage on / off		$V_s/0$		V
V_{IT+}	Input threshold voltage HIGH	8.6		10	V
V_{IT-}	input threshold voltage (LOW)	5		6.7	V
R_{IN}	Input resistance (switching signal)		30		k Ω
C_{IN}	Input capacitance (switching signals)		1		nF
$V_{G(on)}$	Turn on output voltage		15		V
$V_{G(off)}$	Turn off output voltage		-9		V
$t_{d(on)IO}$	Input-output turn-on propagation time		0.8		μ s
$t_{d(off)IO}$	Input-output turn-off propagation time		0.8		μ s
$t_{d(Err)SCP}$	Error sec - prim propagation time		0.6		μ s
$t_{d(Err)HALT}$	Error primary - secondary side propagation time		0.6		μ s
t_{TD}	Top-Bot interlock dead time		4		μ s
t_{jitter}	Signal transfer prim - sec (total jitter)		25	n.a.	ns
t_{SIS}	Short pulse suppression		0.2		μ s
t_{POR}	Power-On-Reset completed		0.15		s
t_{pRESET}	Error reset time	0.03			ms
V_{CEstat}	Reference voltage for V_{CE} -monitoring		8.5		V
t_{bl}	VCE monitoring blanking time		4		μ s
T_{tp}	Over temperature protection level		135		$^{\circ}$ C
R_{Gon}	External gate series resistor at switch-on (MOSFET, IGBT)		0.4		Ω
R_{Goff}	External gate series resistor at switch-off (MOSFET, IGBT)		10		Ω
MTBF	Mean Time Between Failure $T_a = 40^{\circ}$ C		3		10^6 h

Signal Connector

PIN	Signal	Function	Specifications
X1:01	IF_PWR_15P	Drive power supply	Stabilised +15V \pm 4%
X1:02	IF_DC_LINK	Digitised DC Link signal	PWM output, 15V
X1:03	IF_PWR_15P	Drive power supply	Stabilised +15V \pm 4%
X1:04	IF_GND	GND	To be connected to ground
X1:05	IF_PWR_15P	Drive power supply	Stabilised +15V \pm 4%
X1:06	IF_GND	GND	To be connected to ground
X1:07	IF_nERROR_IN	ERROR input	LOW (GND, U_{TH} 1V) = External error HIGH (VP, U_{TH} 14V) = No error Max input current 1,8mA, can be connected with IF_nERROR_OUT
X1:08	IF_GND	GND	To be connected to ground
X1:09	IF_nERROR_OUT	ERROR output	HIGH = NO ERROR ;open collector output 15V / 10mA (external pull up Resistor necessary)
X1:10	IF_GND	GND	To be connected to ground
X1:11	IF_HB_TOP	Switching signal input (TOP switch)	Positive 15V CMOS logic, LOW = TOP switch off ; HIGH = TOP switch on
X1:12	IF_GND	GND	To be connected to ground
X1:13	IF_nERROR_OUT	ERROR output	HIGH = NO ERROR; open collector output; max. 15V / 10 mA (external pull up resistor necessary)
X1:14	IF_GND	GND	To be connected to ground
X1:15	IF_HB_BOT	Switching signal input (BOTTOM switch)	Positive 15V CMOS logic, LOW = BOT switch off; HIGH = BOT switch on
X1:16	IF_GND	GND	To be connected to ground
X1:17	IF_CFG_SELECT	Interlock set up	HIGH (VP) = No interlock LOW (GND) = Interlock 4 μ s
X1:18	IF_GND	GND	To be connected to ground
X1:19	IF_TEMP	Digitised NTC signal	PWM output, 15V
X1:20	IF_GND	GND	To be connected to ground

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.