

SKYPER 12 press-fit C 450A



SKYPER®

SEMIX P Plug & Play Driver Board

Order Nr. L5066902

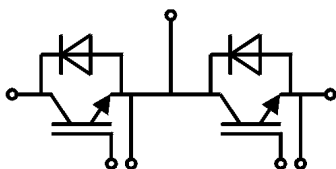
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Features

Dynamic short circuit detection with SoftOff
 Undervoltage protection prim/sec
 Over temperature trip
 Internal power supply
 ROHS, UL recognized
 20P – Second Source Interface
 DC BUS up to 1200V

Typical Applications*

Solar inverters
 Power supplies
 Motor drives



Two channel driver

Absolute Maximum Ratings				
Symbol	Conditions	Values	Unit	
V_s	Supply voltage primary	15	V	
V_{iH}	Input signal voltage (HIGH)	$V_s + 0.4$	V	
V_{iL}	Input signal voltage (LOW)	GND - 0.4	V	
$I_{outPEAK}$	Output peak current	15	A	
$I_{outAVmax}$	Output average current	50	mA	
f_{max}	Max. switching frequency	85 °C	13	kHz
		75 °C	20	kHz
V_{CE}	Collector emitter voltage sense across the IGBT	1200	V	
dv/dt	Rate of rise and fall of voltage secondary to primary side	50	kV/μs	
V_{isolIO}	Insulation test voltage input - output (AC, rms, 2s)	4000	V	
$Q_{out/pulse}$	Max. rating for output charge per pulse	8	μC	
T_{op}	Operating temperature	-40 ... 85	°C	
T_{stg}	Storage temperature	-40 ... 85	°C	

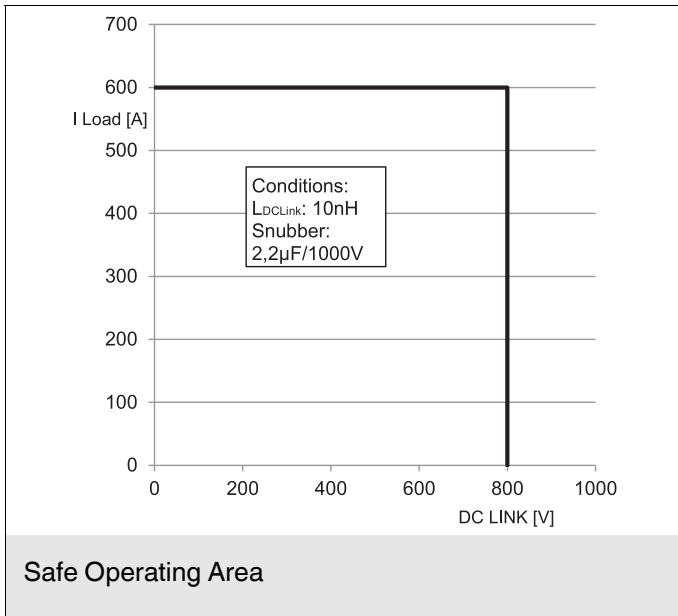
Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
V_s	Supply voltage primary side	14.4	15	15.6	V
I_{SO}	Supply current primary (no load)		100		mA
	Supply current primary side (max.)			350	mA
V_i	Input signal voltage on / off		$V_s/0$		V
V_{IT+}	Input threshold voltage (HIGH)	8.6		10	V
V_{IT-}	Input threshold voltage (LOW)	5		6.7	V
R_{IN}	Input resistance (switching/HAULT signal)		30		kΩ
C_{IN}	Input capacitance (switching signals)		1		nF
$V_{G(on)}$	Turn on output voltage		14.6		V
$V_{G(off)}$	Turn off output voltage		-9		V
$t_{d(on)IO}$	Input-output turn-on propagation time		1		μs
$t_{d(off)IO}$	Input-output turn-off propagation time		1		μs
$t_{d(Err)SCP}$	Error sec - prim propagation time		0.6		μs
$t_{d(Err)HALT}$	Error primary - secondary side propagation time		0.6		μs
t_{TD}	Top-Bot interlock dead time		2		μs
t_{jitter}	Signal transfer prim - sec (total jitter)		25	n.a.	ns
t_{SIS}	Short pulse suppression		0.395		μs
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		7.5		V
t_{bl}	VCE monitoring blanking time		6.5		μs
T_{tp}	Over temperature protection level		135		°C
R_{Gon}	External gate series resistor at switch-on (MOSFET, IGBT)		1.306		Ω
R_{Goff}	External gate series resistor at switch-off (MOSFET, IGBT)		8.1		Ω
MTBF	Mean Time Between Failure $T_a = 40^\circ\text{C}$		7.5		10^6h

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Signal Connector

PIN	Signal	Function	Specifications
X10:01	reserved		Open pin
X10:02	IF_PWR_GND	GND	To be connected to ground
X10:03	reserved	ERROR output	Open pin
X10:04	IF_PWR_GND	GND	To be connected to ground
X10:05	IF_PWR_15P	Drive power supply	Stabilised +15V±4%
X10:06	IF_PWR_GND	GND	To be connected to ground
X10:07	PRIM_nERROR_IN	ERROR input	LOW (GND) = External error HIGH (VP) = No error
X10:08	IF_PWR_GND	GND	To be connected to ground
X10:09	IF_nERROR_OUT	ERROR_OUT	HIGH = NO ERROR ; open collector output; max. 30V / 10mA (external pull up resistor)
X10:10	IF_PWR_GND	GND	To be connected to ground
X10:11	IF_HB_TOP	Switching input (TOP)	15V CMOS logic LOW = TOP switch off; HIGH = TOP switch on
X10:12	IF_PWR_GND	GND	To be connected to ground
X10:13	IF_nERROR_OUT	ERROR output	HIGH = NO ERROR ; open collector output; max. 30V / 15mA (external pull up resistor)
X10:14	IF_PWR_GND	GND	To be connected with ground
X10:15	IF_HB_BOT	Switching input (BOTTOM)	15V CMOS logic, LOW = BOT switch off; HIGH = BOT switch on
X10:16	IF_PWR_GND	GND	To be connected to ground
X10:17	reserved		To be connected to ground
X10:18	IF_PWR_GND	GND	To be connected to ground
X10:19	reserved		To be connected to ground
X10:20	IF_PWR_GND	GND	To be connected to ground

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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.