SKYPER 12 press-fit C 450A

SKYPER®

SEMIX P Plug & Play Driver Board

Order Nr. L5066902

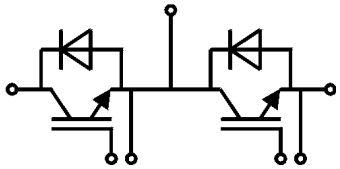
SKYPER 12 press-fit C 450A

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

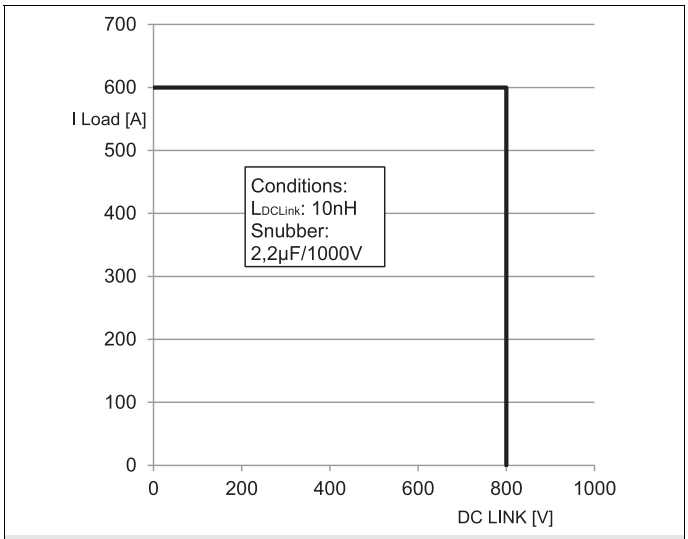
Symbol	Conditions		Values	Unit
V_s	Supply voltage primary		15	V
V_{iH}	Input signal voltage (HIGH)		Vs + 0.4	V
V_{iL}	Input signal voltage (LOW)		GND - 0.4	V
$Iout_{PEAK}$	Output peak current		15	A
$Iout_{AVmax}$	Output average current		50	mA
f_{max}	Max. switching frequency	85 °C	13	kHz
		75 °C	20	kHz
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
$V_{isol\ IO}$	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_{S0}	Supply current primary (no load)		100		mA
	Supply current primary side (max.)			350	mA
V_i	Input signal voltage on / off		Vs/0		V
V_{IT+}	Input treshold voltage (HIGH)	8.6		10	V
V_{IT-}	Input threshold voltage (LOW)	5		6.7	V
R_{IN}	Input resistance (switching/HALT 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 Ta = 40°C		7.5		10^6h

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



Safe Operating Area

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.