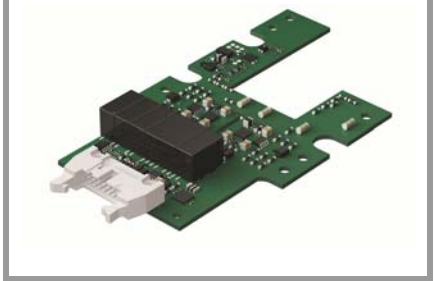
SKYPER PRIME 1700V 1400A ST10



SKYPER®

IGBT Driver for SKM1400GB17R8

Order Number
L5066802 – Driver
22290412 - Module

SKYPER PRIME 1700V 1400A ST10

Features*

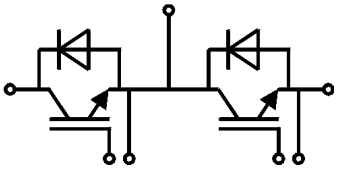
- Dynamic short circuit detection with SoftOff
- Galvanic isolated DC link measurement
- Galvanic isolated temp measurement
- PWM output for sensor signals
- Over voltage trip
- ROHS, UL recognized
- DC Bus up to 1200V

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	16	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	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	14.4	15	15.6	V
I_{S0}	Supply current primary (no load)		85		mA
	Supply current primary side (max.)			1000	mA
V_i	Input signal voltage on / off		Vs/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		kΩ
C_{IN}	Input capacitance (switching signals)		1		nF
$V_{G(on)}$	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		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		4		µs
t_{jitter}	Signal transfer prim - sec (total jitter)		25		ns
t_{SIS}	Short pulse suppression		0.4		µs
t_{POR}	Power-On-Reset completed		0.1		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 (dynamic)		4		µs
V_{DCtrip}	Over voltage trip level		1250		V
R_{Gon}	Driver gate resistor at switch-on		3		Ω
R_{Goff}	Driver gate resistor at switch-off		0		Ω
MTBF	Mean Time Between Failure Ta = 40°C		3		10^6h

Signal Connector

PIN	Signal	Function	Specifications
X1:01	IF_PWR_15P	Drive power supply	Stabilised +15V ±4%
X1:02	IF_DC_LINK	Digitised DC Link signal	PWM output, 15V
X1:03	IF_PWR_15P	Drive power supply	Stabilised +15V ±4%
X1:04	IF_GND	GND	To be connected to ground
X1:05	IF_PWR_15P	Drive power supply	Stabilised +15V ±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 4µs
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.

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