



## SEMIDRIVER™

### Sevenpack IGBT and MOSFET Driver

#### SKHI 71

Preliminary Data

#### Features

- CMOS-compatible input buffers at  $V_{DD}=5V$
- Short-circuit protection by  $V_{CE}$ -monitoring and Soft-turn-Off
- Drive interlock top/bottom
- Signal transmission by opto-couplers
- Supply undervoltage protection (13V)
- Error latch / output

#### Typical Applications

- Driver for IGBT and MOSFET modules in three-phase-bridge circuits, inverter drives, UPS-facilities, etc.

1) At  $T_a < -25^\circ C$  the current consumption can be 1,6 times the rated maximum current for the first three operating minutes.

#### Absolute Maximum Ratings

Symbol	Conditions	Values	Units
$V_S$	Supply voltage primary	15,6	V
$V_{iH}$	Input signal voltage	$V_S + 0,3$	V
$I_{out\_PEAK}$	Output peak current	2	A
$I_{out\_AVmax}$	Output average current ( $T_a = 85^\circ C$ )	20	mA
$f_{max}$	Max. switching frequency ( $C_{GE} < 9nF$ )	50	kHz
$V_{CE}$	Collector emitter voltage sense across the IGBT (for 1200V-IGBTs)	900	V
dv/dt	Rate of rise and fall of voltage (secondary to primary side)	15	kV/ $\mu s$
$V_{isol10}$	Isolation test voltage input - output (2 sec. AC)	2500	V
$V_{isol12}$	Isolation test voltage output 1 - output 2 (2 sec. AC)	1500	V
$R_{Gonmin}$	Minimum rating of $R_{Gon}$	10	$\Omega$
$R_{Goffmin}$	Minimum rating for $R_{Goff}$	10	$\Omega$
$Q_{out/pulse}$	Max. rating for gate $T_a = 85^\circ C$ charge per pulse $T_a = 55^\circ C$	0,7	$\mu C$
$T_{op}$	Operating temperature	- 40 ... + 85	$^\circ C$
$T_{stg}$	Storage temperature	- 40 ... + 85	$^\circ C$

#### Characteristics

$T_a = 25^\circ C$ , unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
$V_S$	Supply voltage primary	14,4	15,0	15,6	V
$I_{SO}^{1)}$	Supply current no load	230		290	mA
	primary side normal op.			550	mA
$V_{iT+}$	Input threshold voltage (High)	4,0	5,0		V
$V_{iT-}$	Input threshold voltage (LOW)			1,5	V
$R_{in}$	Input resistance		60		k $\Omega$
$V_{G(on)}$	Turn on gate voltage output		14,9		V
$V_{G(off)}$	Turn off gate voltage output		-6,5		V
$R_{GE}$	Internal gate-emitter resistance		20		k $\Omega$
$f_{ASIC}$	ASIC system switching frequency		8		MHz
$td(on)_{IO}$	Input-output turn-on propagation time	0,3	0,45	0,6	$\mu s$
$td(off)_{IO}$	Input-output turn-off propagation time	0,3	0,45	0,6	$\mu s$
$t_{d(Err)}$	Error input-output propagation time	1,15	1,3	1,5	$\mu s$
$t_{pERRRESET}$	Error memory reset time	7	15	27	$\mu s$
$t_{TD}$	Interlock dead time	no interlock		4,1	$\mu s$
$V_{CEstat}$	Reference voltage for $V_{CE}$ -monitoring		5,8		V
$t_{blank}$	Blanking time		3,5		$\mu s$
$C_{ps}$	Coupling capacitance primary-secondary		40		pF
MTBF	Mean Time Between Failure $T_a = 40^\circ C$		1		$10^6$ h
w	weight		99		g
H x B x T	Dimensions		20x57x114		mm

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