



SEMIDRIVER™

Sevenpack IGBT and MOSFET Driver

SKHI 71 (R)

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/ μs
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	Ω
$R_{Goffmin}$	Minimum rating for R_{Goff}	10	Ω
$Q_{out/pulse}$	Max. rating for gate $T_a = 85^\circ C$ charge per pulse $T_a = 55^\circ C$	0,7	μC
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 Ω
$V_{G(on)}$	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 Ω
f_{ASIC}	ASIC system switching frequency		8		MHz
$td(on)_{IO}$	Input-output turn-on propagation time	0,3	0,45	0,6	μs
$td(off)_{IO}$	Input-output turn-off propagation time	0,3	0,45	0,6	μs
$t_{d(Err)}$	Error input-output propagation time	1,15	1,3	1,5	μs
$t_{pERRRESET}$	Error memory reset time	7	15	27	μs
t_{TD}	Interlock dead time	no interlock		4,1	μs
V_{CEstat}	Reference voltage for V_{CE} -monitoring		5,8		V
t_{blank}	Blanking time		3,5		μs
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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