SKHI 24 (R) ...

SEMIDRIVER™

Hybrid Dual IGBT Driver

SKHI 24 (R)

Preliminary Data

Features

- Dual driver for halfbridge IGBT modules
- For 1700 V - IGBT
- 5 V input level
- CMOS compatible inputs
- Short circuit protection by V_{CE} monitoring and switch off
- Drive interlock top/bottom
- Isolation by transformers
- Supply undervoltage protection (13 V)
- Error latch/output

Typical Applications

- Driver for IGBT and MOSFET modules in bridge circuits, drives, UPS and welding inverters
- DC bus voltage up to 1200 V

1) At R_{CE} = 18 kΩ, C_{CE} = 330 pF
2) At R_{CE} = 36 kΩ, C_{CE} = 470 pF, R_{VCE} = 1 kΩ

Absolute Maximum Ratings T_a = 25°C, unless otherwise specified

Symbol	Conditions	Values	Units
V_S	Supply voltage prim.	18	V
V_{iH}	Input signal volt. (High)	5 + 0,3	V
$I_{outPEAK}$	Output peak current	15	A
$I_{outAVmax}$	Output average current (max.)	80	mA
f_{max}	max. switching frequency	50	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_{isolIO}	Isolation test voltage input-output (2 sec. AC)	4000	V
V_{isol12}	Isolation test voltage output 1 - output 2 (2 sec. AC)	1500	V
R_{Gonmin}	Minimum rating for R_{Gon}	1,5	Ω
$R_{Goffmin}$	Minimum rating for R_{Goff}	1,5	Ω
$Q_{out/pulse}$	Max. rating for output charge per pulse	5	µC
T_{op}	Operating temperature	- 25 ... + 85	°C
T_{stg}	Storage temperature	- 40 ... + 85	°C

Characteristics T_a = 25°C, unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
V_S	Supply voltage primary side	14,4	15	15,6	V
I_{SO}	Supply current primary side (no load)		100		mA
	Supply current primary side (operation)			550	mA
V_i	Input signal voltage on / off		5 / 0		V
V_{iT+}	Input threshold voltage (High)	3,4	3,8	4,1	V
V_{iT-}	Input threshold voltage (Low)	1,5	1,9	2,2	V
R_{in}	Input resistance		3,3		kΩ
$V_{G(on)}$	Turn-on gate voltage output		+15		V
$V_{G(off)}$	Turn-off gate voltage output		-8		V
R_{GE}	Internal gate-emitter resistance		22		kΩ
f_{ASIC}	Asic system switching frequency		8		MHz
$t_{d(on)IO}$	Input-output turn-on propagation time	0,85	1	1,25	µs
$t_{d(off)IO}$	Input-output turn-off propagation time	0,85	1	1,25	µs
$t_{d(err)}$	Error input-output propagation time		0,6		µs
$t_{pERRRESET}$	Error reset time		12		µs
t_{TD}	Top-Bot Interlock Dead Time	fig.2			µs
V_{CEstat}	Reference voltage for V_{CE}-monitoring		5[1] / 6[2]	10	V
C_{ps}	Coupling capacitance primary secondary		18		pF
MTBF	Mean Time Between Failure T_a = 40°C		1,6		10^6 h
m	weight		115		g
HxBxT	Dimensions		20x57x114		mm

