



**SEMIDRIVER™**

## Hybrid Dual MOSFET Driver

SKHI 21A R

Preliminary Data

### Features

- Drives MOSFET with  $V_{DS(on)} < 10\text{ V}$
- Is compatible to old SKHI 21
- 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 MOSFET modules in bridge circuits in industrial applications

### Footnotes

see fig. 6

At  $R_{CE} = 18\text{ k}\Omega$ ,  $C_{CE} = 330\text{ pF}$

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
$V_S$	Supply voltage primary	18	V
$V_{IH}$	Input signal voltage (HIGH)	$V_S+0.3$	V
$I_{outPEAK}$	Output peak current	8	A
$I_{outAVmax}$	Output average current (max.)	40	mA
$f_{max}$	max. switching frequency	50	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/ $\mu$ s
$V_{isol IO}$	Isolation test voltage input - output (2 sec. AC)	2500	V
$V_{isol12}$			V
$R_{Gon min}$	Minimum rating for external $R_{Gon}$	3	$\Omega$
$R_{Goff min}$	Minimum rating of external $R_{Goff}$	3	$\Omega$
$Q_{out/pulse}$	Max. rating for output charge per pulse	4	$\mu$ C
$T_{op}$	Operating temperature	- 40 ... + 85	$^{\circ}$ C
$T_{stg}$	Storage temperature	- 40 ... + 85	$^{\circ}$ C

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
$V_S$	Supply voltage primary side	14,4	15	15,6	V
$I_{SO}$	Supply current primary side (no load)		80		mA
	Supply current primary side (max.)			290	mA
$V_i$	Input signal voltage on / off		15 / 0		V
$V_{IT+}$	Input threshold voltage (High)	10,9	11,7	12,5	V
$V_{IT-}$	Input threshold voltage (Low)	4,7	5,5	6,5	V
$R_{IN}$	Input resistance		10		k $\Omega$
$V_{G(on)}$	Turn on gate voltage output		+ 15		V
$V_{G(off)}$	Turn off gate voltage output		0		V
$R_{GE}$	Internal gate-emitter resistance		22		k $\Omega$
$f_{ASIC}$	Asic system switching frequency		8		MHz
$t_{d(on)IO}$	Input-output turn-on propagation time	0,85	1	1,15	$\mu$ s
$t_{d(off)IO}$	Input-output turn-off propagation time	0,85	1	1,15	$\mu$ s
$t_{d(terr)}$	Error input-output propagation time		0,6		$\mu$ s
$t_{pERRRESET}$	Error reset time		9		$\mu$ s
$t_{TD}$	Top-Bot Interlock Dead Time	3,3		4,3	$\mu$ s
$V_{CEstat}$	Reference voltage for $V_{CE}$ monitoring		5	10	V
$C_{ps}$	Coupling capacitance primary / secondary		12		pF
MTBF	Mean time between failure $T_a=40^{\circ}$ C		2,0		$10^6$ h
w	weight		45		g