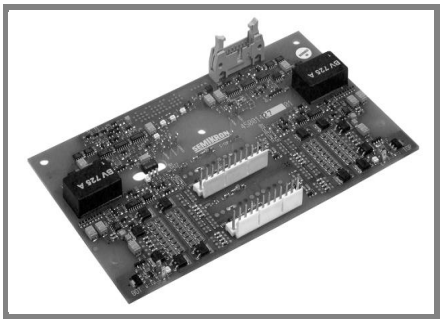
SKHI 27W, SKHI 27F



SEMIDRIVER™

PCB IGBT Driver

SKHI 27W, SKHI 27F

Preliminary Data

Features

- Dual Driver Circuit for very high power IGBTs
- Suitable for all SEMIKRON IGBTs up to 1700 V
- SKHI 27W with wired signal connection
- SKHI 27F with fibre optic interface
- CMOS compatible input buffers
- Short circuit protection by V_{CE}-monitoring and slow turn off
- Drive interlock top/bottom
- Isolation by transformers
- Supply undervoltage protection (13 V)
- Output connection monitoring by opto coupler
- Error latch/output
- Internal isolated power supply

Typical Applications

- Driver for IGBT and MOFET modules in bridge circuits, in choppers, inverter drives and SMPS
- High power UPS
- DC bus voltage up to 1200 V

1) The temperature range is only limited by the signal fibre optic cable.

2) External gate input resitor has to be determined by the customer
- $I_{outPEAK}$ per output = $I_{outPEAK}$ / n (n: total number of outputs)
- $I_{outPEAK}$ per output has to be considered, when fixing individual values of $R_{Gon(int)}$ and $R_{Goff(int)}$
- Please note: $(R_{Gon(int)} + R_{Goff(int)})/n \geq 1{,}1\ \Omega$

Absolute Maximum Ratings

Symbol	Conditions	Values	Units
V_S	Supply voltage primary	18	V
V_{iH}	Input signal voltage (HIGH)	V_S ± 0,3	V
$I_{outPEAK}$	Output peak current	± 30	A
$I_{outAVmax}$	Output average current (max.; T_{amb} = 25 °C)	± 150	mA
f_{max}	switching frequency (max.)	10	kHz
$Q_{out/pulse}$	Max. rating for output charge per pulse	± 30	µC
V_{CE}	Collector emitter voltage	1700	V
dv/dt	Rate of rise and fall of voltage (secondary to primary side)	75	kV/µs
$V_{isol\ IO}$	Isolation test volt. IN-OUT (2 sec. AC)	4000	V
T_{op}	Operationg temperature (SKHI 27W)	- 25 ... + 85	°C
	Operating temperature (SKHI 27F)	0 ... + 70	°C
T_{stq}	Storage temperature (SKHI 27W)	- 25 ... + 85	°C
	Storage temperature (SKHI 27F)	0 ... + 70	°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_S	Supply current primary side (no load)		250		mA
I_{SO}	Supply current primary side (operation)			640	mA
V_{iT+}	Input threshold voltage (HIGH) (SKHI 27W)	12,9			V
V_{iT-}	Input threshold voltage (LOW) (SKHI 27W)			2,1	V
$V_{G(on)}$	Turn-on gate voltage output		+15		V
$V_{G(off)}$	Turn-off gate voltage output		- 8		V
$td(on)_{IO}$	Input-output turn-on propagation time		1 + t_{TD}		µs
$td(off)_{IO}$	Input-output turn-off propagation time		1		µs
t_{TD}	Dead time		3		µs
$t_{pon-error}$	propag. delay time - on error		6		µs
t_{pRESET}	Min. pulse with error memory RESET		5		µs
R_{in}	Input resistance		10		kΩ
$R_{Gon(int)}$	Internal gate resistance $R_{Gon(int)}$ per output[2)]		1,1		Ω
$R_{Goff(int)}$	Internal gate resistance $R_{Goff(int)}$ per output[2)]		1,1		Ω
R_{GE}	Internal gate-emitter resistance		10		kΩ
$t_{d(err)}$	Error input-output propagation time		1		µs
V_{CEstat}	Reference voltage for V_{CE}-monitoring	5,3		6,3	V
C_{ps}	Coupling capacitance primary-secondary		8,0		pF
w	approx.		150		g
HxBxT	Dimensions		200x120x27		mm

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