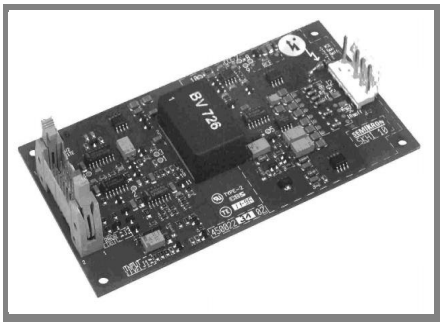
SKHI 10/12



SEMIDRIVER™

High Power IGBT Driver

SKHI 10/12

Features

- Single driver circuit for high power IGBTs
- SKHI 10/12 drives all SEMIKRON IGBTs with V_{CES} up to 1200 V (factory adjustment of V_{CES}-monitoring for 1200V-IGBT)
- CMOS/TTL (HCMOS) compatible input buffers
- Short circuit protection by V_{CE} monitoring
- Soft short circuit turn-off
- Isolation due to transformers (no opto couplers)
- Supply undervoltage monitoring (< 13 V)
- Error memory / output signal (LOW or HIGH logic)
- Internal isolated power supply

Typical Applications

- High frequency SMPS
- Braking choppers
- Asymmetrical bridges
- High power UPS

1) This current value is a function of the output load conditio
2) This value does not consider t_{on} of IGBT and t_{MIN} adjusted by R_{CE} and C_{CE}
3) Matched to be used with IGBTs < 100A; for higher currents, see table 2
4) With R_{CE} = 18 kΩ, C_{CE} = 330 pF; see fig. 6

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

Symbol	Conditions	Values	Units
V_S	Supply voltage primary	18	V
V_{iH}	Input signal voltage (HIGH) (for 15 V and 5 V input level)	VS + 0,3	V
$Iout_{PEAK}$	Output peak current	± 8	A
$Iout_{AVmax}$	Output average current (max.)	± 100	mA
V_{CE}	Collector emitter voltage sense	1200	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)	2500	V
$R_{Gon\ min}$	minimal R_{Gon}	2,7	Ω
$R_{Goff\ min}$	minimal R_{Goff}	2,7	Ω
$Q_{out/pulse}$	charge per pulse	9,6	µC
T_{op}	Operating temperature	- 25 ... + 85	°C
T_{stg}	Storage temperature	- 25 ... + 85	°C

Characteristics T_a = 25°C, unless otherwise specified

Symbol	Conditions	min.	typ.	max.	Units
V_S	Supply voltage primary	14,4	15,0	15,6	V
I_S	Supply current (max.)		0,3[1)]		A
I_{SO}	Supply current primary side (no load)		90		mA
V_{iT+}	Input threshold voltage (HIGH) for				
	15 V input level	12,5			V
	for 5 V input level	2,4			V
V_{iT-}	Input threshold voltage (LOW) for				
	15 V input level			3,6	V
	for 5 V input level			0,50	V
$V_{G(on)}$	Turn-on output gate voltage		+ 15		V
$V_{G(off)}$	Turn-off output gate voltage		- 8		V
f	Maximum operating frequency		see fig. 15		
$td(on)_{IO}$	Input-output turn-on propagation time		1,4		µs
$td(off)_{IO}$	Input-output turn-off propagation time		1,4		µs
$t_{d(err)}$	Error input-output propagation time		1,0[2)]		µs
V_{CEstat}	Reference voltage for V_{CE} monitoring		5,2[4)]		V
R_{IN}	Input resistance		10		kΩ
R_{Gon}	Internal gate resistor for ON signal		22[3)]		Ω
R_{Goff}	Internal gate resistor for OFF signal		22[3)]		Ω
C_{ps}	Primary to secondary capacitance		12		pF

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