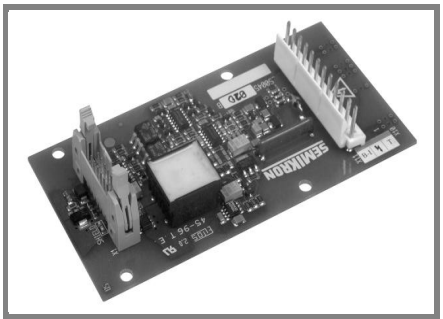
SKAI 100 E / U



SEMIDRIVER™

Brake Chopper Driver

SKAI 100 E / U

Preliminary Data

Features

- Driver for dc link chopper circuits
- US Version (SKAI 100 U) and European Version (SKAI 100 E)
- Standard logic compatible input buffers
- Short circuit protection by V_{CE}
- Chopper frequency up to 5kHz
- Adjustable values for hysteresis and max. dc link voltage
- Isolation by transformers
- Supply undervoltage protection (13 V)
- Available in standard SKiiPs and optional in standard modules
- External Reset possible

Typical Applications

- DC link voltage controller

Absolute Maximum Ratings

Symbol	Conditions	Values	Units
V_S	Supply voltage primary	18	V
V_{iH}	Input signal voltage (HIGH)	5 + 0,3	V
$I_{outPEAK}$	Output peak current @ 10 µs	1,5	A
$I_{outAVmax}$	Output average current (f_{sw} = 5 kHz)	90	mA
f_{max}	switching frequency (max.)	5	kHz
V_{CE}	Collector-Emitter voltage	1700	V
dv/dt	Rate of rise and fall of voltage secondary to primary side	50	kV/µs
V_{isolIO}	Isol. test voltage input-output (2 sec. AC)	3500	V
R_{Gonmin}	Minimum rating for R_{Gon}	1,5	Ω
$R_{Goffmin}$	Minimum rating for R_{Goff}	1,5	Ω
T_{op}	Operating temperature	- 25 ... + 85	°C
T_{stq}	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 (regulated)	14,4	15	15,6	V
	Supply voltage primary side (unregulated)	20	24	30	V
I_{SO}	Supply current primary side (no load)		67		mA
	Supply current primary side (operation, f_{swmax} = 5 kHz)		77		mA
R_{GE}	Internal gate-emitter resistance		22		kΩ
$t_{d(on)IO}$	Input-output turn-on propagation time			20	µs
$t_{d(off)IO}$	Input-output turn-off propagation time			25	µs
$t_{d(err)}$	Error input-output propagation time		10		µs
$t_{pERRRESET}$	Error reset time		300		ms
	Input IGBT extern On (Open Collector)				
V_{iOn}	Chopper On @ I_{iOn} > 5 mA			5	V
V_{iOff}	Chopper Off @ I_{iOff} < 1 mA	11,5			V
	Input Error Reset (Open Collector)				
$V_{iResetActive}$	RESET active			2	V
$V_{iResetNoAct}$	RESET inactive	12			V
	Output IGBT				
$V_{G(on)}$	Turn-On Gate Voltage	13,8	14,5	15,2	V
$V_{G(off)}$	Turn-Off Gate Voltage			0,6	V
R_{Gon}	Gate On Resistance		15		Ω
R_{Goff}	Gate Off Resistance		15		Ω
Qout/pulse	max. rating for output charge per pulse			5	µC
	DC-Link voltage threshold (SKAI 100 E)				
$V_{ChopperOn}$	Chopper On	661	681	701	V
$V_{ChopperOff}$	Chopper Off	647	667	687	V
$V_{ChopperError}$	Chopper Error	725	730	735	V
	DC-Link voltage threshold (SKAI 100 U)				
$V_{ChopperOn}$	Chopper On	779	802	826	V
$V_{ChopperOff}$	Chopper Off	762	786	809	V
$V_{ChopperError}$	Chopper Error	854	860	866	V
ϑ_{Fault}	over temperature	110	115	120	°C
C_{ps}	Coupling capacity primary-secondary		12		pF
w	weight		44		g
T x B x H	Dimensions		125x62x27		mm

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