SEMIKRON

Absolute Maximum Ratings T_{case} = 25 °C, unless otherwise specified

Symbol	Conditions	Values	Units
IGBT			
V_{CES}		1700	V
I_C	T_{case} = 25 (80) °C	130 (95)	A
I_{CRM}	T_{case} = 25 (80) °C, t_p =1 ms	260 (190)	A
V_{GES}		± 20	V
T_{vj}, (T_{stg})	$T_{OPERATION} \leq T_{stg}$	– 40 ... +150 (125)	°C
V_{isol}	AC, 1 min.	4000	V
Inverse Diode			
I_{FAV} = – I_C	T_{case} = 25 (80) °C	100 (70)	A
I_{FRM}	T_{case} = 25 (80) °C, t_p < 1 ms	260 (190)	A
I_{FSM}	t_p = 10 ms; sin.; T_j = 150 °C	720	A
Freewheeling Diode			
I_{FAV} = – I_C	T_{case} = 25 (80) °C		A
I_{FRM}	T_{case} = 25 (80) °C, t_p < 1 ms		A
I_{FSM}	t_p = 10 ms; sin.; T_j = 150 °C		A

Characteristics T_{case} = 25 °C, unless otherwise specified

| Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(TO)}$	V_{GE} = V_{CE}, I_C = 3 mA	5,2	5,8	6,4	V
I_{CES}	V_{GE} = 0, V_{CE} = V_{CES}, T_j = 25 (125) °C			0,6	mA
$V_{CE(TO)}$	T_j = 25 (125) °C		1,0 (0,9)	1,2 (1,1)	V
r_{CE}	V_{GE} = 15 V, T_j = 25 (125) °C		13 (20)	17	mΩ
$V_{CE(sat)}$	I_C = 75 A, V_{GE} = 15 V, chip level		2,0 (2,4)	2,45	V
C_{ies}			5,7		nF
C_{oes}	V_{GE} = 0, V_{CE} = 25 V, f = 1 MHz		0,28		nF
C_{res}			0,22		nF
L_{CE}				25	nH
$R_{CC'+ EE'}$	resistance, terminal-chip 25 (125) °C		0,75 (1)		mΩ
$t_{d(on)}$	under following conditions: V_{CC} = 1200 V, I_C = 75 A,		tbd		ns
t_r	R_{Gon} = R_{Goff} = 18 Ω, T_j = 125 °C,		tbd		ns
$t_{d(off)}$	V_{GE} ± 15 V		tbd		ns
t_f			tbd		ns
E_{on} (E_{off})			51 (26)		mJ
Inverse Diode under following conditions:					
V_F = V_{EC}	I_F = 75 A; V_{GE} = 0 V; T_j = 25 (125) °C		1,6 (1,6)	1,9	V
$V_{T(TO)}$	T_j = 25 (125) °C		1,1 (0,9)	1,3 (1,1)	V
r_T	T_j = 25 (125) °C		6,7 (9,3)	8 (13)	mΩ
I_{RRM}	I_F = 75 A; T_j = 125 °C		tbd		A
Q_{rr}	di/dt = 750 A/µs		tbd		µC
E_{rr}	V_{GE} = 0 V		tbd		mJ
FWD	under following conditions:				
V_F = V_{EC}	I_F = A; V_{GE} = 0 V; T_j = 25 (125) °C				V
V_{TO}	T_j = 25 (125) °C				V
r_T	T_j = 25 (125) °C				mΩ
I_{RRM}	I_F = A; T_j = 125 °C				A
Q_{rr}	V_{GE} = 0 V				µC
E_{rr}					mJ
Thermal Characteristics					
$R_{th(j-c)}$	per IGBT			0,22	K/W
$R_{th(j-c)D}$	per Inverse Diode			0,5	K/W
$R_{th(j-c)FD}$	per FWD				K/W
$R_{th(c-s)}$	per module			0,05	K/W
Mechanical Data					
M_s	to heatsink (M6)	3		5	Nm
M_t	for terminals (M5)	2,5		5	Nm
w				160	g

SEMITRANS™ M
Trench IGBT Module

SKM 100 GB 176 DN

Target Data

SEMITRANS 2N

low inductance case
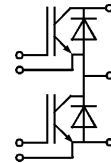
GB

Features

- Homogeneous Si
- Trench = Trench gate technology
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability, self limiting to 6 x I_C

Typical Applications

- AC inverter drives mains 575 - 750V AC
- Public transport (auxiliary syst.)

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This is an electrostatic discharge sensitive device (ESDS).

Please observe the international standard IEC 60747-1, Chapter IX.

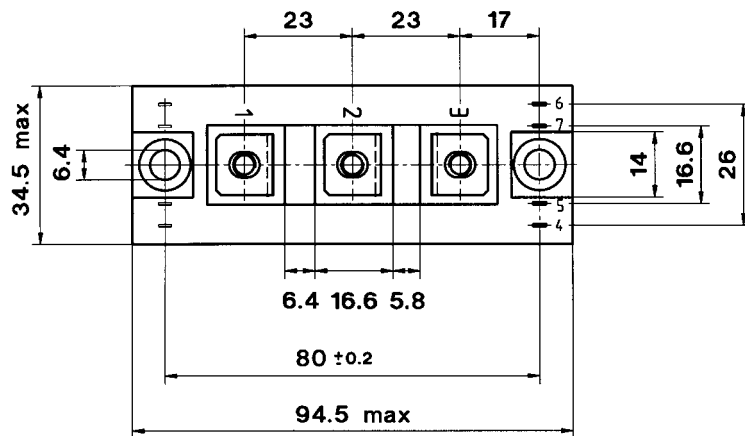| Packing Unit	8 pcs	SEMIBOX A
Mounting Kit	10 pcs	Ident-No. 33321100

SEMITRANS 2

Case D 93
UL Recognized
File no. E 63 532

SKM 100 GB 176 DN
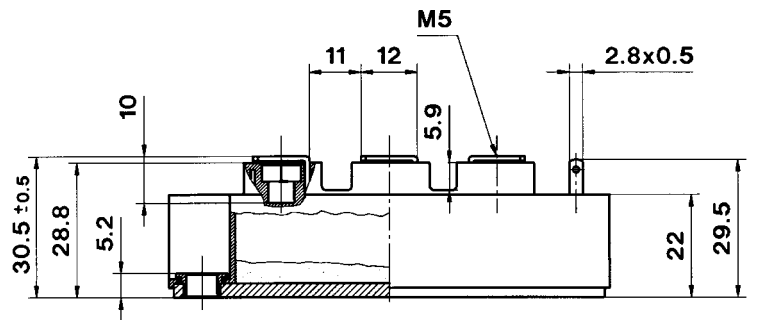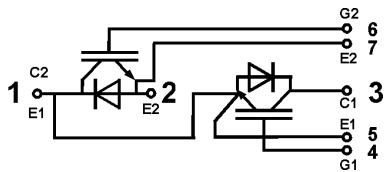
Dimensions in mm

Case outline and circuit diagrams

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

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