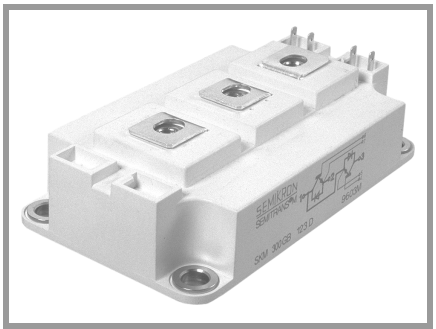
SKM 150GB128D ...



SEMITRANS™ 3

SPT IGBT Modules

SKM 150GB128D

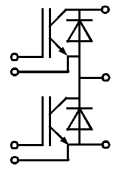
Target Data

Features

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

Typical Applications

- AC inverter drives
- UPS
- Electronic welders at f_{sw} > 20 kHz



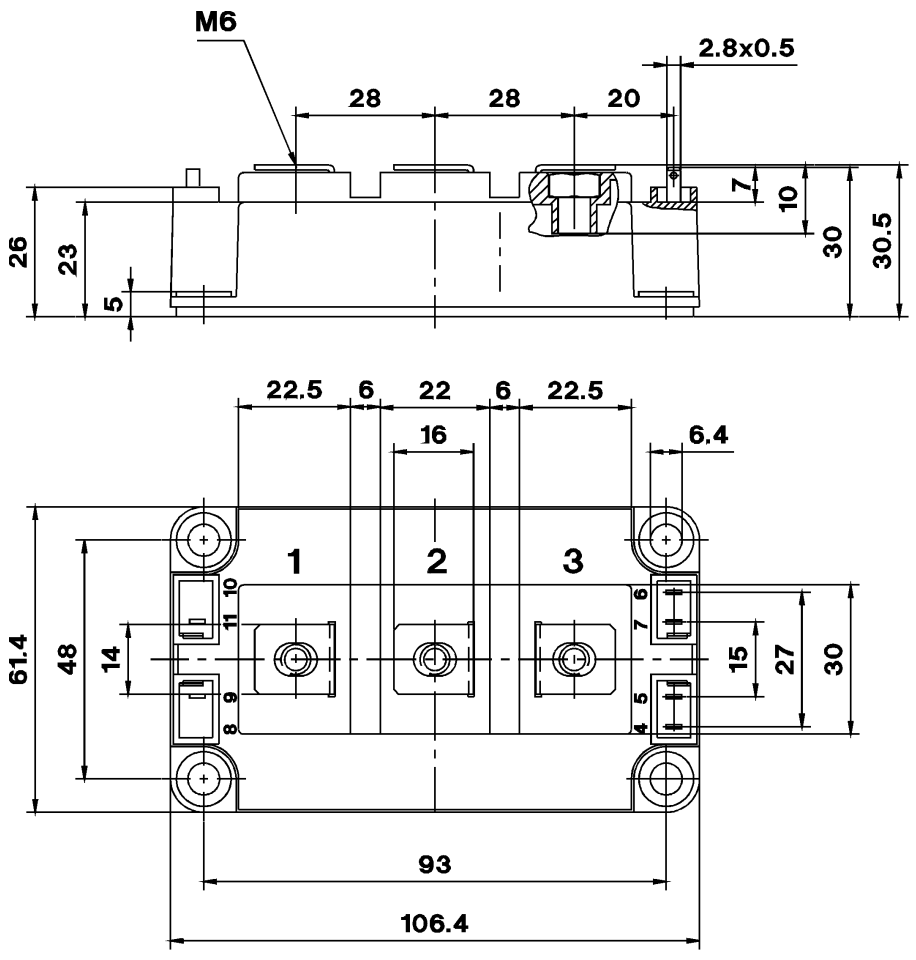
GB

Absolute Maximum Ratings	T_{case} = 25°C, unless otherwise specified		
Symbol	**Conditions**	**Values**	**Units**
IGBT			
V_{CES}		1200	V
I_C	T_{case} = 25 (80) °C	180 (130)	A
I_{CRM}	T_{case} = 25 (80) °C, t_p = 1 ms	360 (260)	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	150 (100)	A
I_{FRM}	T_{case} = 25 (80) °C, t_p < 1 ms	360 (260)	A
I_{FSM}	t_p = 10 ms; sin.; T_j = 150 °C	1100	A
Freewheeling diode			
I_{FAV} = - I_C	T_{case} = °C		A
I_{FRM}	T_{case} = () °C, t_p < ms		A
I_{FSM}	t_p = ms; ; T_j = °C		A

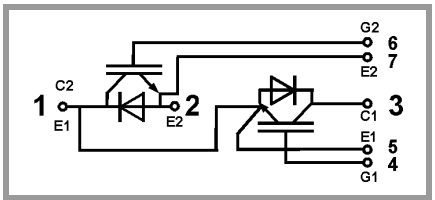
Characteristics	T_{case} = 25°C, unless otherwise specified				
Symbol	**Conditions**	**min.**	**typ.**	**max.**	**Units**
IGBT					
$V_{GE(TO)}$	V_{GE} = V_{CE}, I_C = 4 mA	4,5	5,5	6,5	V
I_{CES}	V_{GE} = 0, V_{CE} = V_{CES}, T_j = 25 (125) °C				mA
$V_{CE(TO)}$			1 (0,9)	1,15	V
r_{CE}	V_{GE} = 15 V, T_j = 25 (125) °C		10 (14)	12,5	mΩ
$V_{CE(sat)}$	I_C = 100 A, V_{GE} = 15 V, chip level		2 (2,3)	2,4	V
C_{ies}					nF
C_{oes}	V_{GE} = 0, V_{CE} = 25 V, f = 1 MHz				nF
C_{res}					nF
L_{CE}				20	nH
$R_{CC'+EE'}$	resistance, terminal-chip 25 (125) °C		0,35 (0,5)		mΩ
	under following conditions:				
$t_{d(on)}$	V_{CC} = 600 V, I_C = 100 A				ns
t_r	R_{Gon} = R_{Goff} = 9 Ω, T_j = 125 °C				ns
$t_{d(off)}$	V_{GE} ± 15 V				ns
t_f					ns
E_{on} (E_{off})					mJ
Inverse diode	under following conditions:				
V_F = V_{EC}	I_F = 100 A; V_{GE} = 0 V; T_j = 25 (125) °C		2 (1,8)	2,5	V
$V_{T(TO)}$	T_j = 25 (125) °C		1,1	1,4	V
r_T	T_j = 25 (125) °C		9	13	mΩ
I_{RRM}	I_F = 100 A; T_j = 125 °C				A
Q_{rr}	di/dt = 3500 A/µs				µC
E_{rr}	V_{GE} = 0 V				mJ
FWD under following conditions:					
V_F = V_{EC}	I_F = A; V_{GE} = V, T_j = () °C				V
V_{TO}	T_j = () °C				V
r_T	T_j = () °C				mΩ
I_{RRM}	I_F = A; T_j = °C				A
Q_{rr}	V_{GE} = V				µC
E_{rr}					mJ
Thermal characteristics					
$R_{th(j-c)}$	per IGBT			0,165	K/W
$R_{th(j-c)D}$	per Inverse Diode			0,3	K/W
$R_{th(j-c)FD}$	per FWD				K/W
$R_{th(c-s)}$	per module			0,038	K/W
Mechanical data					
M_s	to heatsink (M6)	3		5	Nm
M_t	for terminals (M5)	2,5		5	Nm
w				325	g

UL Recognized
File no. E 63 532

Dimensions in mm



Case D 56a



GB

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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