SK25GB065

SEMITOP® 1

IGBT Module

SK25GB065

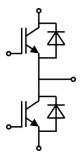
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N-channel homogeneous silicon structure (NPT-Non punch-through IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E63 532

Typical Applications

- Switching (not for linear use)
- Driver
- Switched mode power supplies
- UPS
- High switching applications (typ.>=15kHz)



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Absolute Maximum Ratings			T_s = 25 °C, unless otherwise specified	
Symbol	**Conditions**		**Values**	**Units**
IGBT				
V_{CES}	T_j = 25 °C		600	V
I_C	T_j = 125 °C	T_s = 25 °C	30	A
		T_s = 80 °C	21	A
I_{CRM}	I_{CRM}= 2 x I_{Cnom}		60	A
V_{GES}			± 20	V
t_{psc}	V_{CC} = 300 V; $V_{GE} \leq$ 20 V; V_{CES} < 600 V	T_j = 125 °C	10	µs
Inverse Diode				
I_F	T_j = 150 °C	T_s = 25 °C	36	A
		T_s = 80 °C	24	A
I_{FRM}	I_{FRM}= 2 x I_{Fnom}		70	A
I_{FSM}	t_p = 10 ms; half sine wave	T_j = 150 °C	200	A
Module				
$I_{t(RMS)}$				A
T_{vj}			-40 ... +150	°C
T_{stg}			-40 ... +125	°C
V_{isol}	AC, 1 min.		2500	V

Characteristics			T_s = 25 °C, unless otherwise specified			
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
IGBT						
$V_{GE(th)}$	V_{GE} = V_{CE}, I_C = 0,7 mA		3	4	5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C			0,1	mA
		T_j = 125 °C				mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			120	nA
		T_j = 125 °C				nA
V_{CE0}		T_j = 25 °C		1,2	1,3	V
		T_j = 125 °C		1,1	0,9	V
r_{CE}	V_{GE} = 15 V	T_j = 25°C		20	23	mΩ
		T_j = 125°C		33	43	mΩ
$V_{CE(sat)}$	I_{Cnom} = 30 A, V_{GE} = 15 V	T_j = 25°C$_{chiplev.}$		1,8	2	V
		T_j = 125°C$_{chiplev.}$		2,1	2,2	V
C_{ies}	V_{CE} = 25, V_{GE} = 0 V	f = 1 MHz		1,6		nF
C_{oes}				0,15		nF
C_{res}				0,092		nF
$t_{d(on)}$	R_{Gon} = 33 Ω	V_{CC} = 300V		30		ns
t_r		I_C= 25A		35		ns
E_{on}		T_j = 125 °C		0,75		mJ
$t_{d(off)}$	R_{Goff} = 33 Ω	V_{GE}=±15V		250		ns
t_f				15		ns
E_{off}				0,6		mJ
$R_{th(j-s)}$	per IGBT				1,4	K/W

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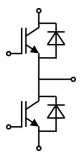

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Characteristics					
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 25 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,45	1,7	V
		T_j = 125 °$C_{chiplev.}$		1,4	1,75	V
V_{F0}		T_j = 125 °C		0,85	0,9	V
r_F		T_j = 125 °C		22	32	mΩ
I_{RRM}	I_F = 25 A	T_j = 125 °C		16		A
Q_{rr}	di/dt = -500 A/µs			2		µC
E_{rr}	V_{CC}= 300V			0,25		mJ
$R_{th(j-s)D}$	per diode				1,7	K/W
M_s	to heat sink				1,5	Nm
w				13		g

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

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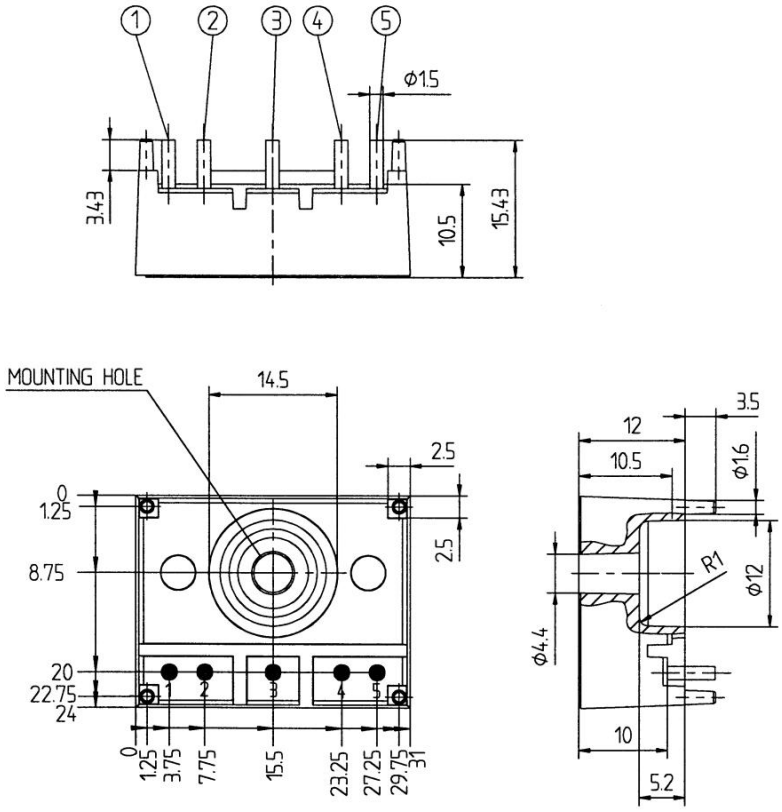
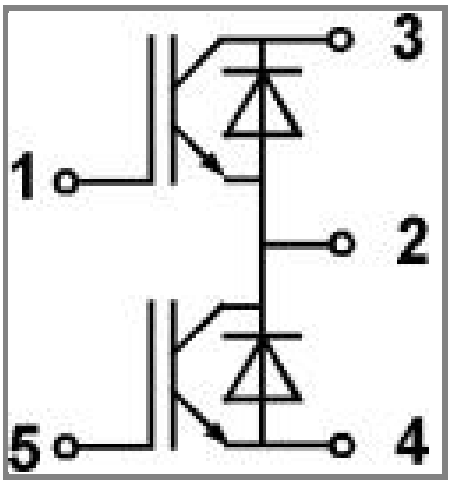
UL recognized file no. E 63 532



Case T3 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 3 GB

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