

SEMITOP® 3

IGBT Module

SK75GGB066T

Target Data

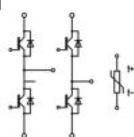
Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL HD technology FWD
- Integrated NTC temperature sensor

Typical Applications*

Remarks

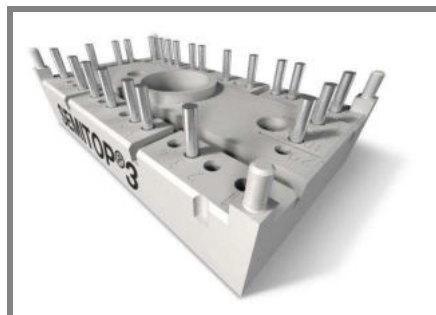
- $V_{isol} = 3000V$ AC, 50Hz, 1s



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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 = 175 °C	T _s = 25 °C	77	A
		T _s = 70 °C	60	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}	150	A	
V _{GES}		± 20	V	
t _{psc}	V _{CC} = 360 V; V _{GE} ≤ 20 V; T _j = 150 °C V _{CES} < 600 V	6	μs	
Inverse Diode				
I _F	T _j = 175 °C	T _s = 25 °C	77	A
		T _s = 70 °C	60	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}	150	A	
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C	395	A	
Module				
I _{t(RMS)}			A	
T _{vj}		-40 ... +175	°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 = 1,2 mA		5	5,8	6,5	V				
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _J = 25 °C	0,0038			mA				
		T _J = 125 °C				mA				
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _J = 25 °C	600			nA				
		T _J = 125 °C				nA				
V _{CE0}		T _J = 25 °C	0,8			V				
		T _J = 150 °C				0,7	1	V		
r _{CE}	V _{GE} = 15 V	T _J = 25°C	8			10	mΩ			
		T _J = 150°C				12,7	14	mΩ		
V _{CE(sat)}	I _{Cnom} = 75 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.}	1,45			1,85	V			
		T _J = 150°C _{chiplev.}				1,65	2,05	V		
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz	4,7				nF			
C _{oes}						0,3	nF			
C _{res}						0,145	nF			
Q _G	V _{GE} = -7V...+15V		700				nC			
t _{d(on)}	R _{Gon} = 16 Ω di/dt = 2250 A/μs	V _{CC} = 300V I _C = 75A T _J = 150 °C V _{GE} = -7/+15 V	95				ns			
t _r						50				ns
E _{on}									3,1	
t _{d(off)}	541				ns					
t _f				70				ns		
E _{off}							2,8			
R _{th(j-s)}	per IGBT		0,94							K/W



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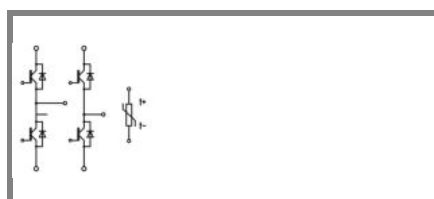
Remarks

- $V_{isol} = 3000V$ AC, 50Hz, 1s

Characteristics		min.	typ.	max.	Units
Symbol	Conditions				
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 75 A$; $V_{GE} = 0 V$				
	$T_j = 25 ^\circ C_{chiplev.}$		1,35		V
	$T_j = 150 ^\circ C_{chiplev.}$		1,31		V
V_{F0}					V
	$T_j = 25 ^\circ C$				V
	$T_j = 150 ^\circ C$		0,85		V
r_F					mΩ
	$T_j = 25 ^\circ C$				mΩ
	$T_j = 150 ^\circ C$		7,8		mΩ
I_{RRM}	$I_F = 75 A$		60		A
Q_{rr}	$di/dt = 2250 A/\mu s$		6		μC
E_{rr}	$V_{CC} = 300V$		0,85		mJ
$R_{th(j-s)D}$	per diode		1,55		K/W
M_s	to heat sink	2,5		2,75	Nm
w			60		g
Temperature sensor					
R_{100}	$T_s = 100^\circ C$ ($R_{25} = 5k\Omega$)		493±5%		Ω

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

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.



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