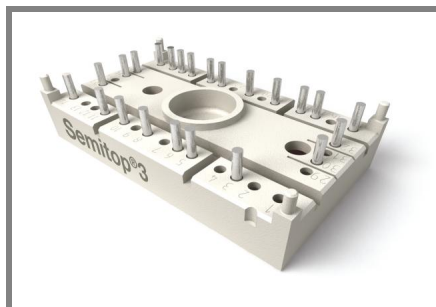




SEMITOP® 3

IGBT Module

SK40GARL067E

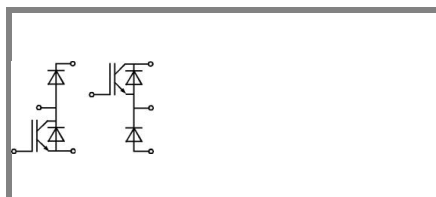
Target Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Hyperfast NPT technology IGBT
- N-channel homogeneous silicon structure (NPT Non-Punch-Through IGBT)
- Positive $V_{ce,sat}$ temperature coefficient (Easy paralleling)
- Low tail current with low temperature dependence
- Low threshold voltage

Typical Applications

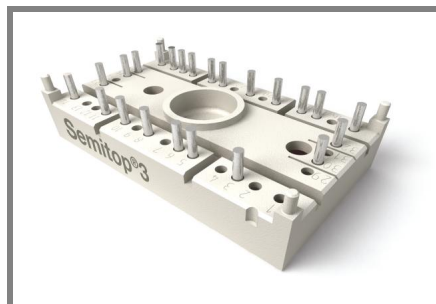
- Switching (not for linear use)
- High Frequencies Applications
- Welding generator
- Switched mode power supplies
- UPS



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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	62	A
		T _s = 80 °C	41	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}		180	A
V _{GES}			± 20	V
t _{psc}	V _{CC} = 300 V; V _{GE} ≤ 20 V; T _j = 125 °C V _{CES} < 600 V		10	μs
Inverse Diode				
I _F	T _j = 150 °C	T _s = 25 °C	62	A
		T _s = 80 °C	38	A
I _{FRM}				A
I _{FSM}	t _p = 10 ms; sinusoidal	T _j = °C	180	A
Freewheeling Diode				
I _F	T _j = 125 °C	T _{case} = 25 °C	45	A
		T _{case} = 80 °C	30	A
I _{FRM}				A
I _{FSM}	t _p = 10 ms; sinusoidal	T _j = °C	90	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 = 0,9 mA		3	4	5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _j = 25 °C		0,006			mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V T _j = 25 °C		360			nA
V _{CE0}	T _j = 150 °C		2			V
r _{CE}	V _{GE} = 15 V T _j = 150°C		17			mΩ
V _{CE(sat)}	I _{Cnom} = 90 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}	2,8		3,15	V
		T _j = 125°C _{chiplev.}	3,5		4	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz		4,5			nF
C _{oes}			0,45			nF
C _{res}			0,27			nF
t _{d(on)}	R _{Gon} = 11 Ω	V _{CC} = 400V I _{Cnom} = 90A T _j = 125 °C V _{GE} = ±15V	22			ns
t _r			10			ns
E _{on}			2,8			mJ
t _{d(off)}	R _{Goff} = 11 Ω	T _j = 125 °C V _{GE} = ±15V	270			ns
t _f			28			ns
E _{off}			2,1			mJ
R _{th(j-s)}	per IGBT		0,6			K/W



SEMITOP® 3

IGBT Module

SK40GARL067E

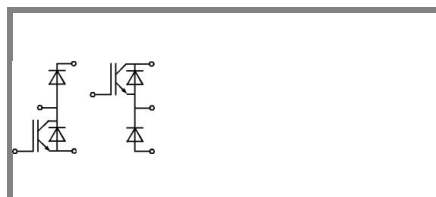
Target Data

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- Welding generator
- Switched mode power supplies
- UPS

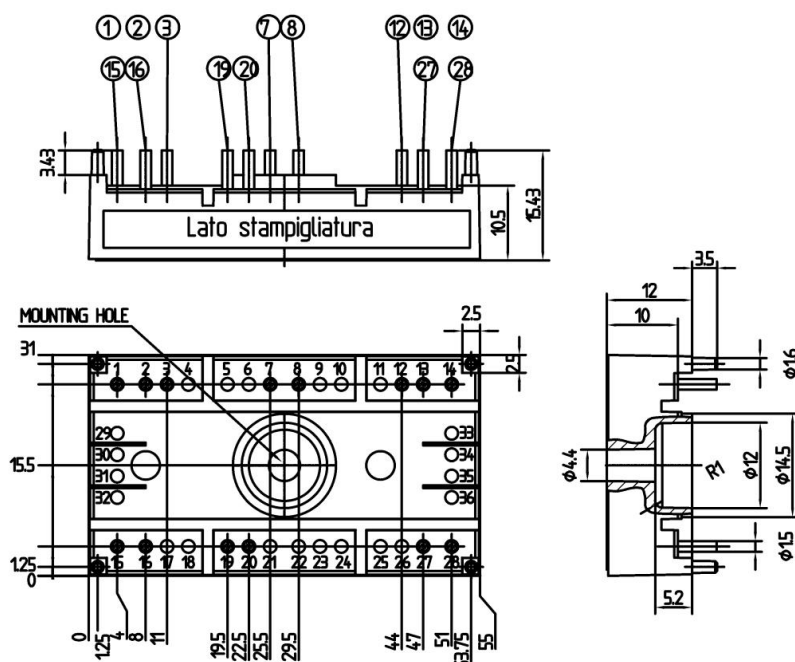


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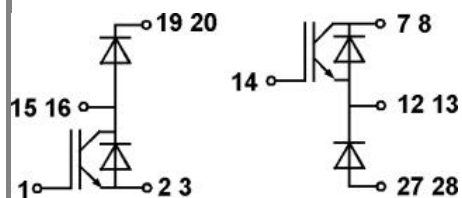
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 60 \text{ A}; V_{GE} = 0 \text{ V}$			2	V
	$T_j = 25 \text{ }^{\circ}\text{C}_{chiplev.}$				V
	$T_j = 150 \text{ }^{\circ}\text{C}_{chiplev.}$		1,25		V
V_{F0}					V
	$T_j = 25 \text{ }^{\circ}\text{C}$				V
	$T_j = 150 \text{ }^{\circ}\text{C}$		1		V
r_F					mΩ
	$T_j = 25 \text{ }^{\circ}\text{C}$				mΩ
	$T_j = 150 \text{ }^{\circ}\text{C}$		5,5		mΩ
I_{RRM}	$I_{Fnom} = 30 \text{ A}$		18		A
Q_{rr}	$di/dt = -100 \text{ A}/\mu\text{s}$		1,5		μC
E_{rr}	$V_R = 400 \text{ V}$				mJ
$R_{th(j-s)D}$	per diode			1,2	K/W
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = 30 \text{ A}; V_{GE} = 0 \text{ V}$			2	V
	$T_j = 25 \text{ }^{\circ}\text{C}_{chiplev.}$				V
	$T_j = 125 \text{ }^{\circ}\text{C}_{chiplev.}$		1,25		V
V_{F0}					V
	$T_j = 25 \text{ }^{\circ}\text{C}$				V
	$T_j = 150 \text{ }^{\circ}\text{C}$		1		V
r_F					V
	$T_j = 25 \text{ }^{\circ}\text{C}$				V
	$T_j = 150 \text{ }^{\circ}\text{C}$		9		V
I_{RRM}	$I_{Fnom} = 30 \text{ A}$		18		A
Q_{rr}	$di/dt = -100 \text{ A}/\mu\text{s}$		1,5		μC
E_{rr}	$V_R = 600 \text{ V}$				mJ
$R_{th(j-s)FD}$	per diode			1,8	K/W
M_s	to heat sink	2,25		2,5	Nm
w			29		g

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.



Case T69 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 69

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