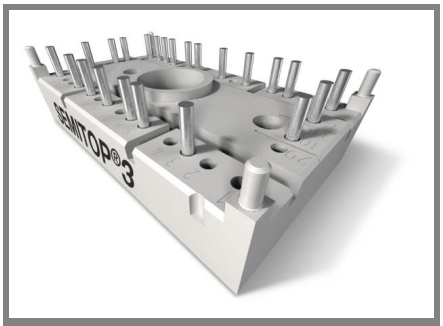
SK30GARL067E



SEMITOP® 3

IGBT Module

SK30GARL067E

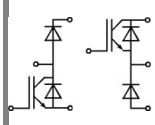
Target Data

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 treshold voltage

Typical Applications*

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



GARL-E

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; $V_{GE} \leq$ 20 V; V_{CES} < 600 V	T_j = 125 °C	10	µs
Inverse Diode				
I_F	T_j = 150 °C	T_s = 25 °C	45	A
		T_s = 80 °C	30	A
I_{FRM}				A
I_{FSM}	t_p = 10 ms; sinusoidal	T_j = °C	90	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 = 0,6 mA		3	4	5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C			0,004	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			240	nA
V_{CE0}		T_j = 150 °C			2	V
r_{CE}	V_{GE} = 15 V	T_j = 150°C		25		mΩ
$V_{CE(sat)}$	I_{Cnom} = 60 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		3		nF
C_{oes}				0,3		nF
C_{res}				0,18		nF
$t_{d(on)}$	R_{Gon} = 11 Ω	V_{CC} = 400V		32		ns
t_r		I_C= 60A		20		ns
E_{on}		T_j = 125 °C		1,8		mJ
$t_{d(off)}$	R_{Goff} = 11 Ω	V_{GE}=±15V		340		ns
t_f				30		ns
E_{off}				1,6		mJ
$R_{th(j-s)}$	per IGBT				0,85	K/W

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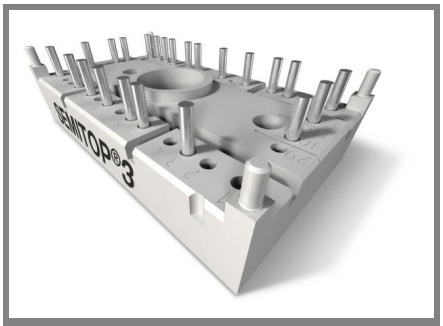

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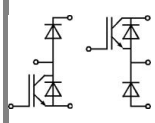


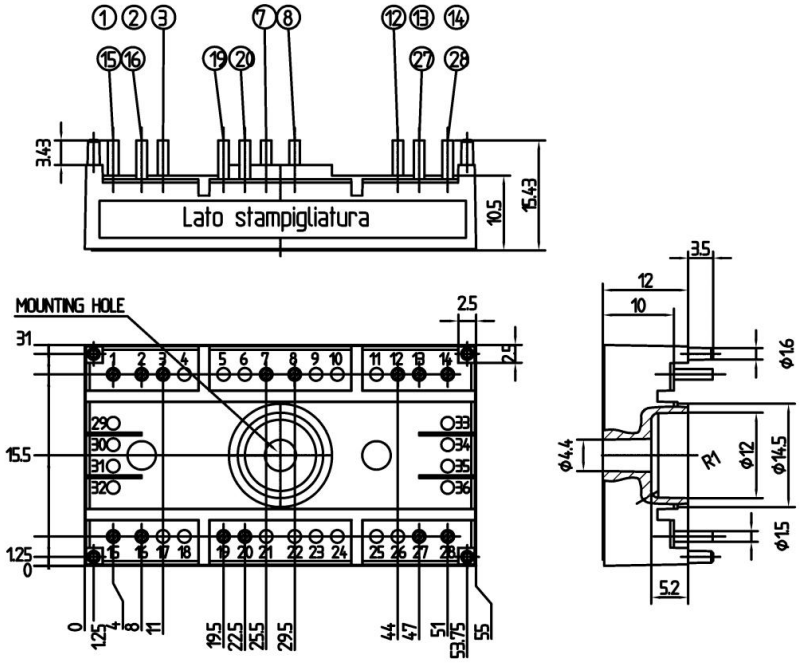
GARL-E

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 30 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$			2	V
		T_j = 150 °$C_{chiplev.}$		1,25		V
V_{F0}		T_j = 25 °C				V
		T_j = 150 °C		1		V
r_F		T_j = 25 °C				mΩ
		T_j = 150 °C		18		mΩ
I_{RRM}	I_F = 30 A	T_j = 125 °C		9		A
Q_{rr}	di/dt = -100 A/µs			1,5		µC
E_{rr}	V_R=400V					mJ
$R_{th(j-s)D}$	per diode				1,6	K/W
Freewheeling Diode						
$V_F = V_{EC}$	I_{Fnom} = 30 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$			2	V
		T_j = 125 °$C_{chiplev.}$		1,25		V
V_{F0}		T_j = 25 °C				V
		T_j = 150 °C		1		V
r_F		T_j = 25 °C				V
		T_j = 150 °C		9		V
I_{RRM}	I_F = 30 A	T_j = 125 °C		18		A
Q_{rr}	di/dt = -100 A/µs			1,5		µC
E_{rr}	V_R=600V					mJ
$R_{th(j-s)FD}$	per diode				1,6	K/W
M_s	to heat sink		2,25		2,5	Nm
w				29		g

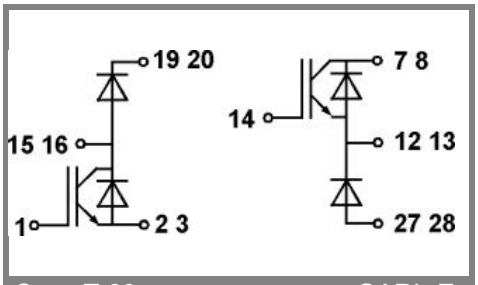
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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.

UL recognized file no. E 63 532



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



Case T 69 GARL-E

