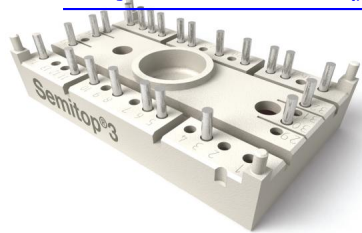


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SEMITOP[®] 3

IGBT Module

SK30GAD066T

Target Data

Features

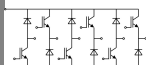
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench silicon structure
- High short circuit capability
- Low tail current with low temperature dependence
- Integrated PTC temperature sensor

Typical Applications

- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

Remarks

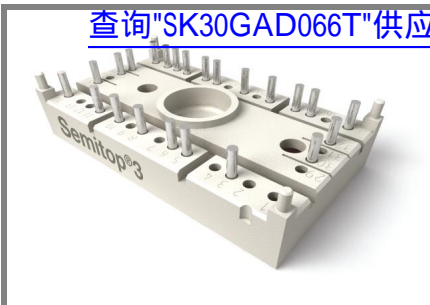
- PTC temp sensor test conditions:
measuring current: 1 mA
max measuring current value: 3 mA



GAD

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	Values			Units
IGBT					
V_{CES}	$T_j = 25\text{ °C}$	600			V
I_C	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	38		A
		$T_s = 70\text{ °C}$	31		A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	60			A
V_{GES}		± 20			V
t_{psc}	$V_{CC} = 360\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125\text{ °C}$ $V_{CES} < 600\text{ V}$	6			µs
Inverse Diode					
I_F	$T_j = 150\text{ °C}$	$T_s = 25\text{ °C}$			A
		$T_s = 80\text{ °C}$			A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$				A
Freewheeling Diode					
I_F	$T_j = 175\text{ °C}$	$T_{case} = 25\text{ °C}$	65		A
		$T_{case} = 70\text{ °C}$	51		A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	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		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}; I_C = 0,43\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$	0,08		mA
		$T_j = 125\text{ °C}$			mA
I_{GES}	$V_{CE} = 0\text{ V}, V_{GE} = 30\text{ V}$	$T_j = 25\text{ °C}$	300		nA
		$T_j = 125\text{ °C}$			nA
V_{CE0}		$T_j = 25\text{ °C}$	0,9	1	V
		$T_j = 150\text{ °C}$	0,85	0,9	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$	18	28	mΩ
		$T_j = 150\text{ °C}$	27	38	mΩ
$V_{CE(sat)}$	$I_{Cnom} = 30\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	1,45	1,85	V
		$T_j = 150\text{ °C}_{chiplev.}$	1,65	2,05	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$			nF
C_{oes}					nF
C_{res}					nF
$t_{d(on)}$	$R_{Gon} = 22\text{ }\Omega$	$V_{CC} = 300\text{ V}$ $I_{Cnom} = 30\text{ A}$ $T_j = 150\text{ °C}$ $V_{GE} = \pm 15\text{ V}$			ns
t_r					ns
E_{on}			1,24		mJ
$t_{d(off)}$	$R_{Goff} = 22\text{ }\Omega$				ns
t_f					ns
E_{off}			1,48		mJ
$R_{th(j-s)}$	per IGBT	1,8			K/W

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SEMITOP[®] 3

IGBT Module

SK30GAD066T

Target Data

Features

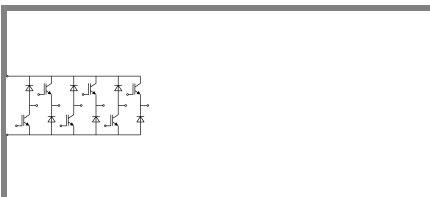
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- UPS

Remarks

- PTC temp sensor test conditions:
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max measuring current value: 3 mA



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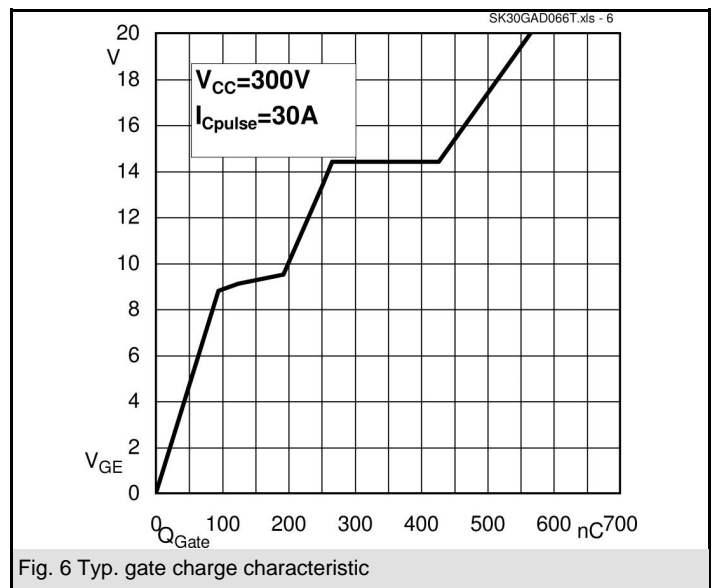
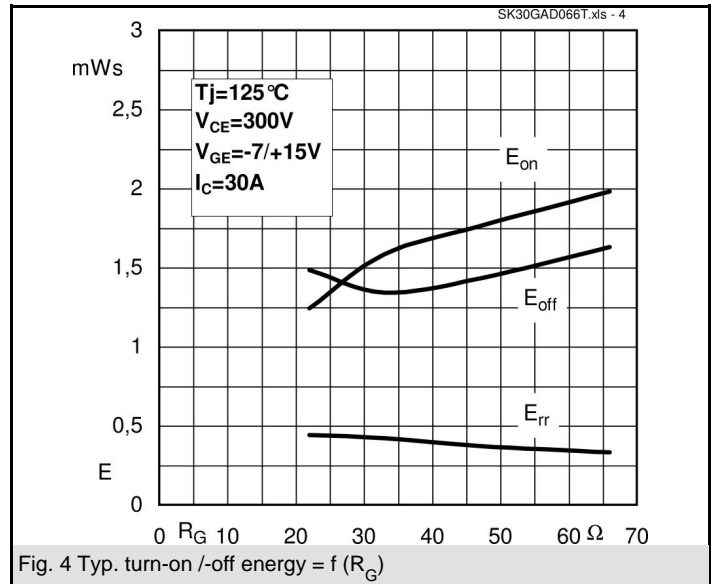
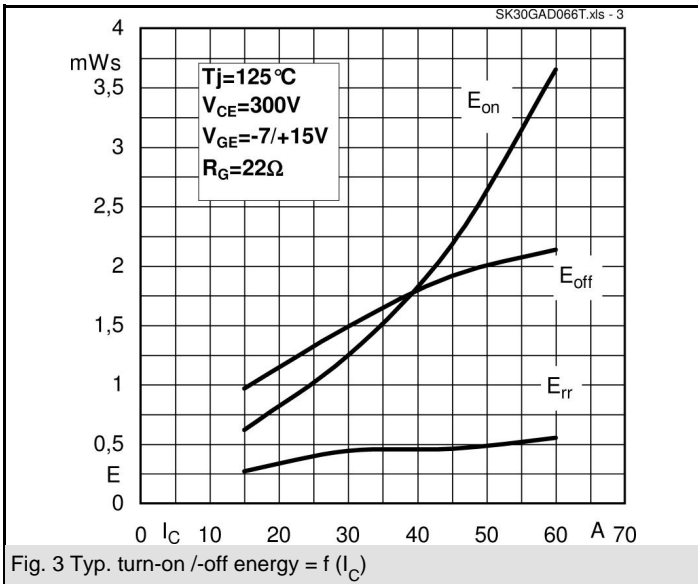
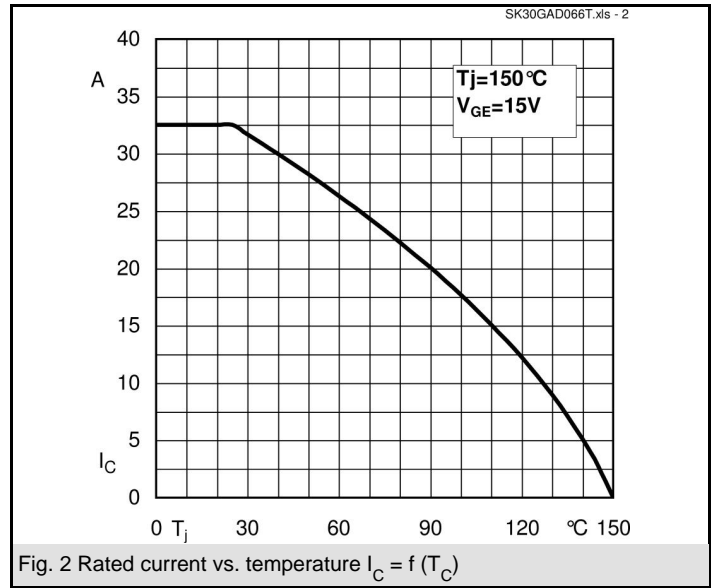
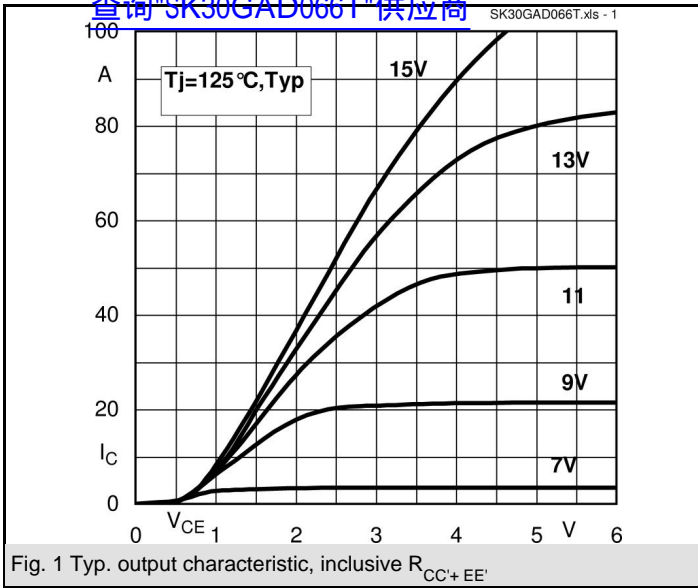
Characteristics

Symbol	Conditions	min.	typ.	max.	Units	
Freewheeling Diode						
$V_F = V_{EC}$	$I_{Fnom} = 30 \text{ A}; V_{GE} = 0 \text{ V}$		$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,3	1,5	V
			$T_j = 125 \text{ }^\circ\text{C}_{\text{chiplev.}}$	1,2	1,45	V
V_{F0}			$T_j = 125 \text{ }^\circ\text{C}$	0,85	0,9	V
r_F			$T_j = 125 \text{ }^\circ\text{C}$	9	16	m Ω
I_{RRM}	$I_{Fnom} = 30 \text{ A}$		$T_j = 125 \text{ }^\circ\text{C}$	3		A
Q_{rr}	$di/dt = -500 \text{ A}/\mu\text{s}$			3		μC
E_{rr}	$V_{CC} = 300 \text{ V}$			0,44		mJ
$R_{th(j-s)FD}$	per diode				1,2	K/W
M_s	to heat sink M1	2,25		2,5		Nm
w			30			g
Temperature sensor						
R_{ts}	3%, $T_r = 25 (100)^\circ\text{C}$		1000 (1670)			Ω

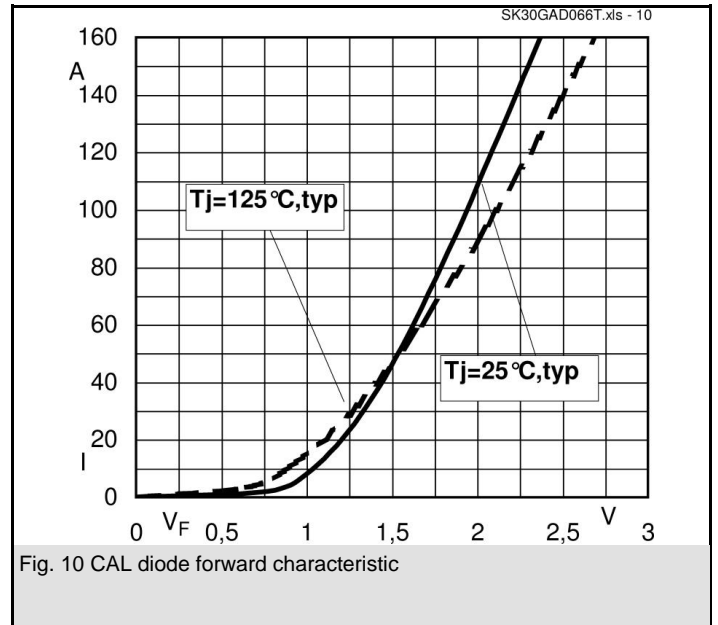
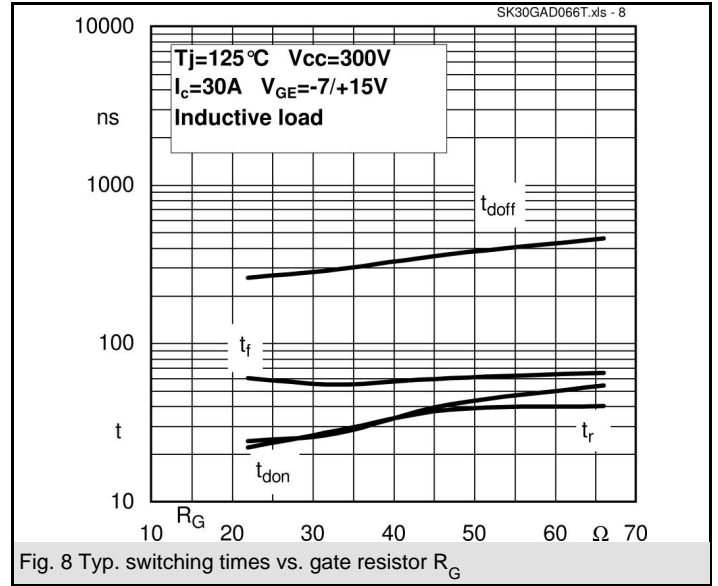
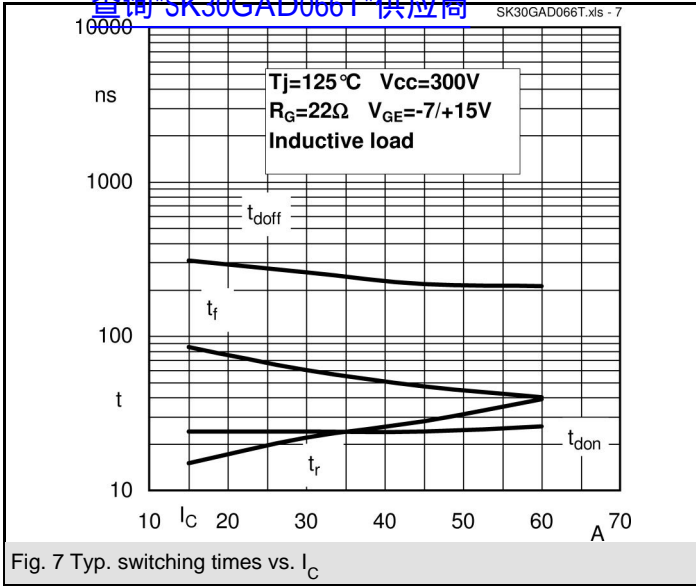
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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

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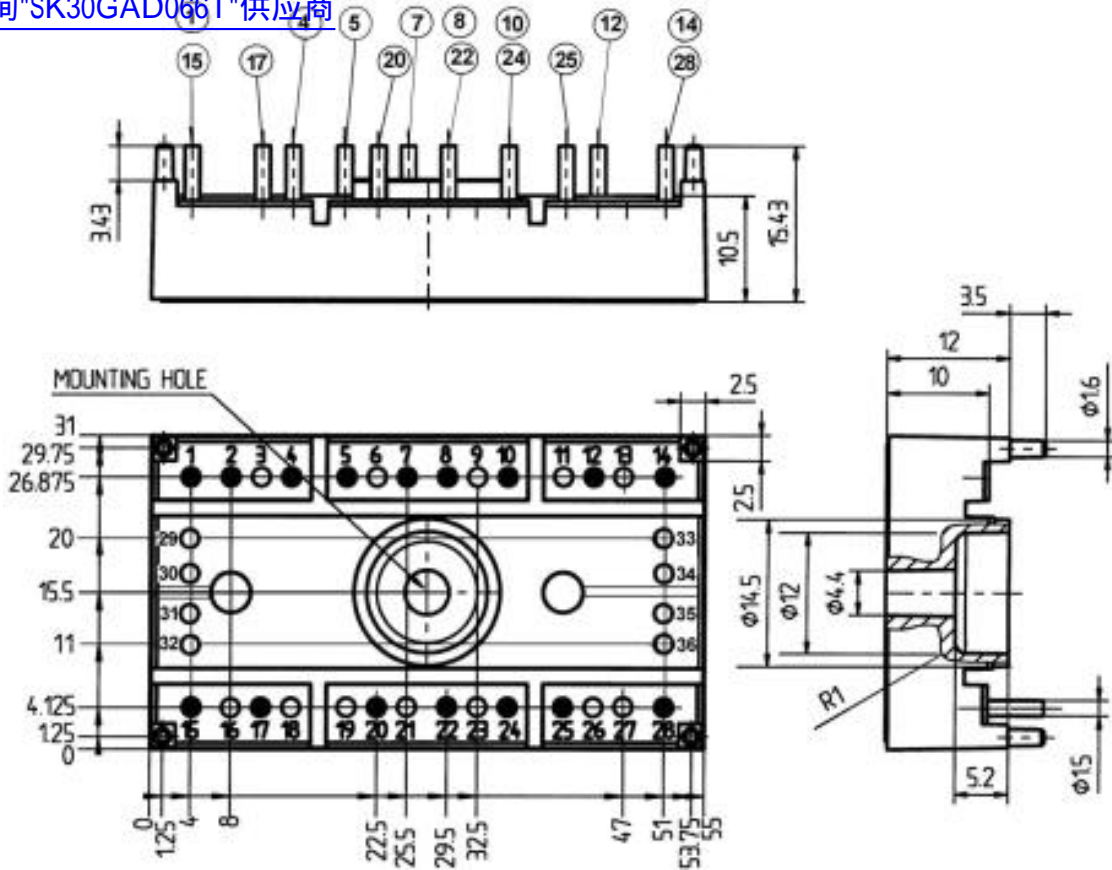


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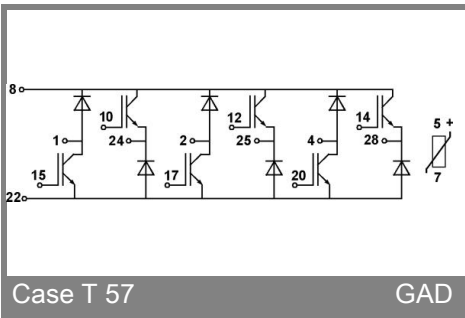


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Case T57 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 57

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