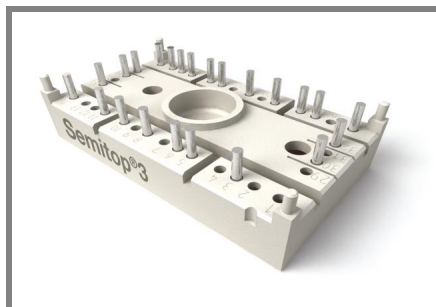




SEMITOP® 3

IGBT Module

SK30GAD066T

Target Data

Features

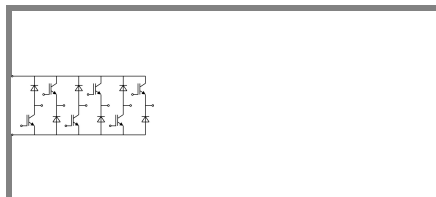
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench silicon structure
- High short circuit capability
- Low tail current with low temperature dependence
- Integrated PTC temperature sensor

Typical Applications

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

Remarks

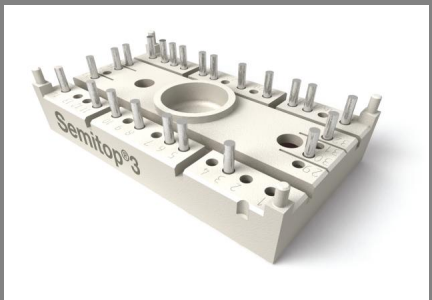
- PTC temp sensor test conditions:
measuring current: 1 mA
max measuring current value: 3 mA



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	$^{\circ}\text{C}$
T_{stg}				-40 ... +125	$^{\circ}\text{C}$
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 = 0,43 mA		5	5,8	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _j = 25 °C T _j = 125 °C				0,08	mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 30 V T _j = 25 °C T _j = 125 °C				300	nA nA
V _{CE0}	T _j = 25 °C T _j = 150 °C			0,9 0,85	1 0,9	V V
r _{CE}	V _{GE} = 15 V T _j = 25°C T _j = 150°C			18 27	28 38	mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 30 A, V _{GE} = 15 V T _j = 25°C _{chiplev.} T _j = 150°C _{chiplev.}			1,45 1,65	1,85 2,05	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz					nF nF nF
t _{d(on)} t _r E _{on}	R _{Gon} = 22 Ω	V _{CC} = 300V I _{Cnom} = 30A		1,24		ns ns mJ
t _{d(off)} t _f E _{off}	R _{Goff} = 22 Ω	T _j = 150 °C V _{GE} =±15V		1,48		ns ns mJ
R _{th(j-s)}	per IGBT			1,8		K/W



SEMITOP® 3

IGBT Module

SK30GAD066T

Target Data

Features

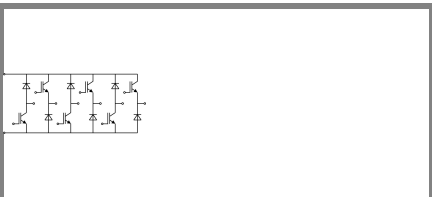
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench silicon structure
- High short circuit capability
- Low tail current with low temperature dependence
- Integrated PTC temperature sensor

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

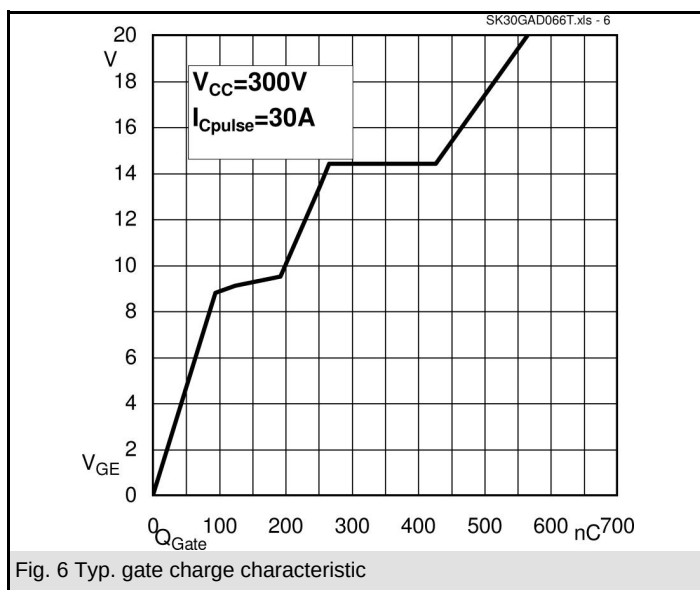
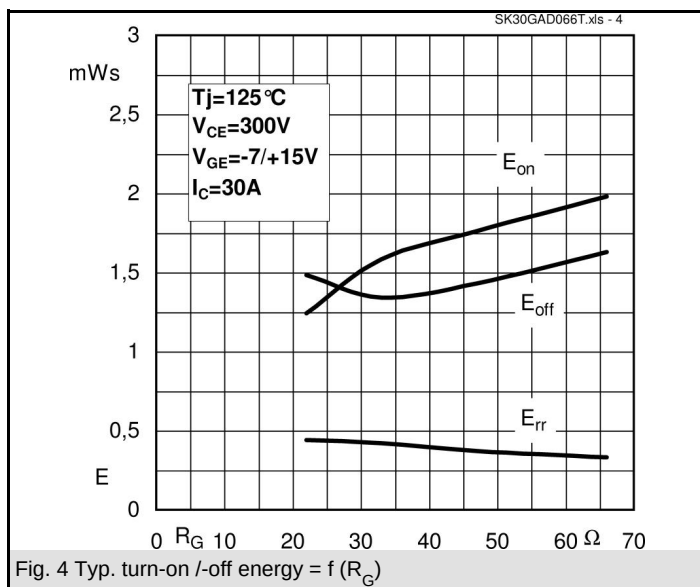
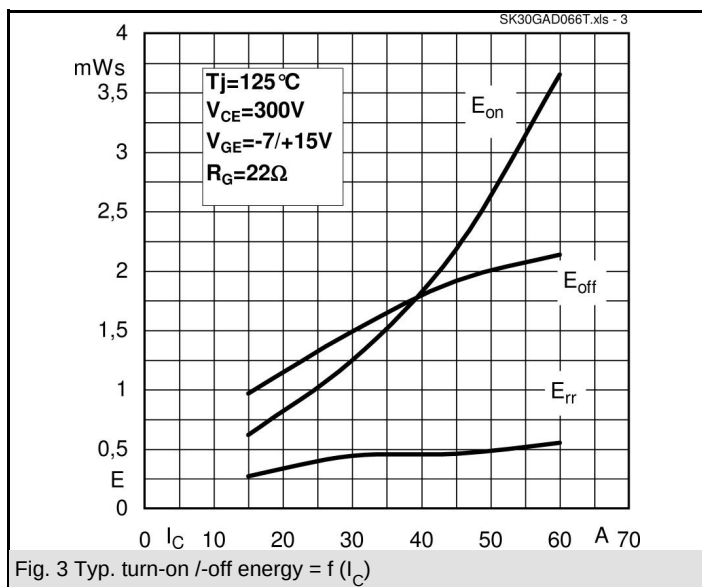
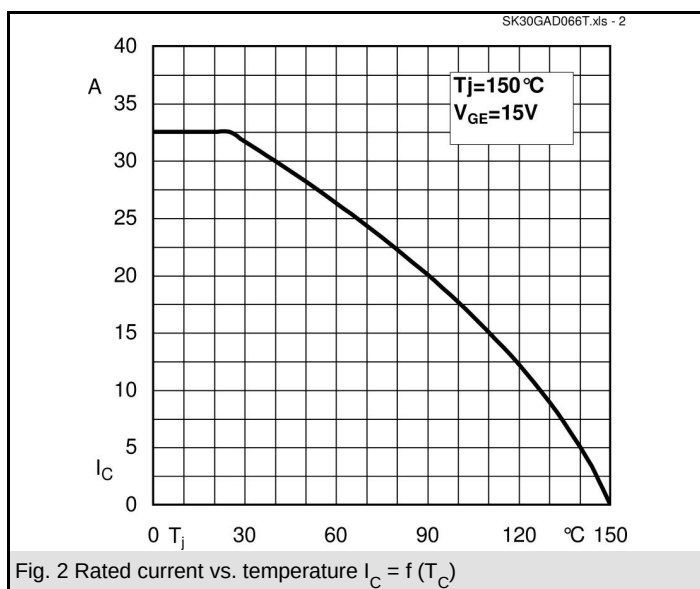
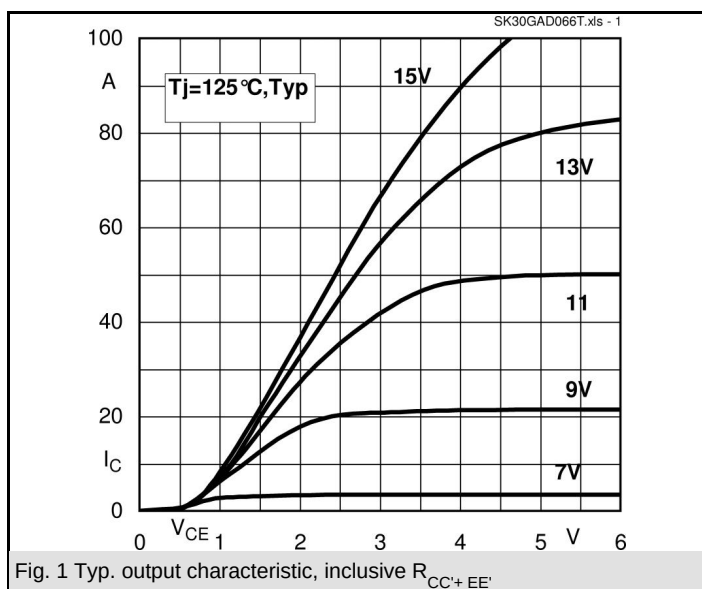


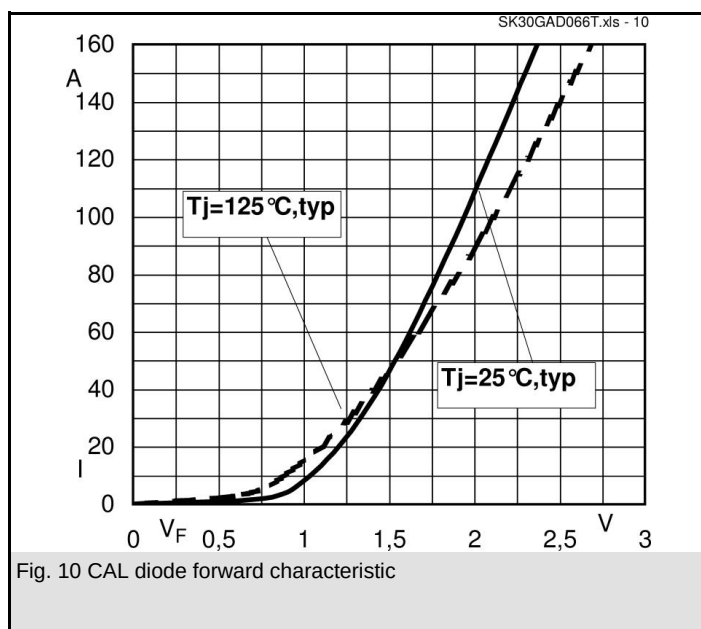
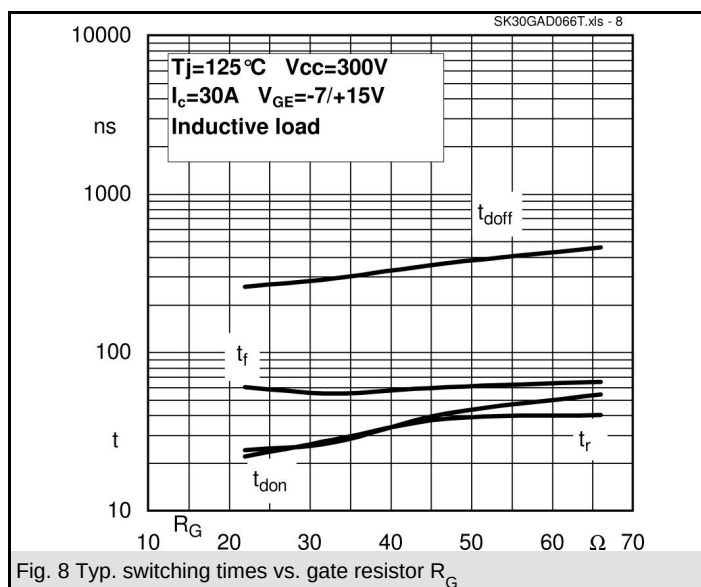
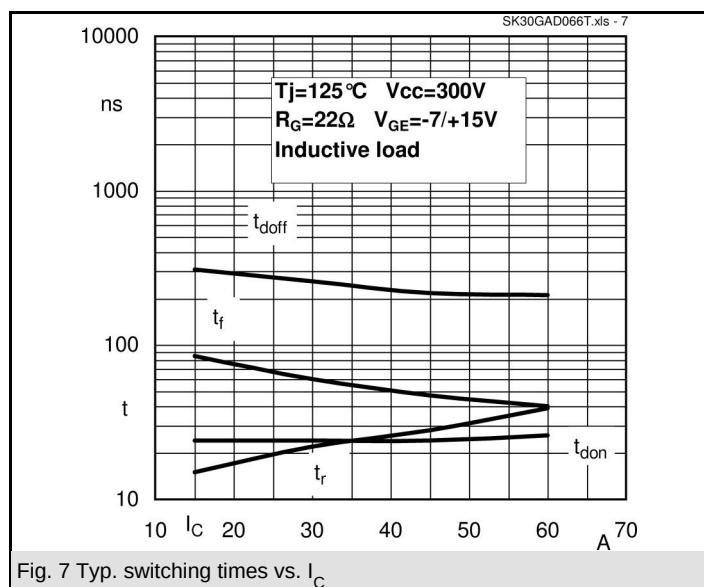
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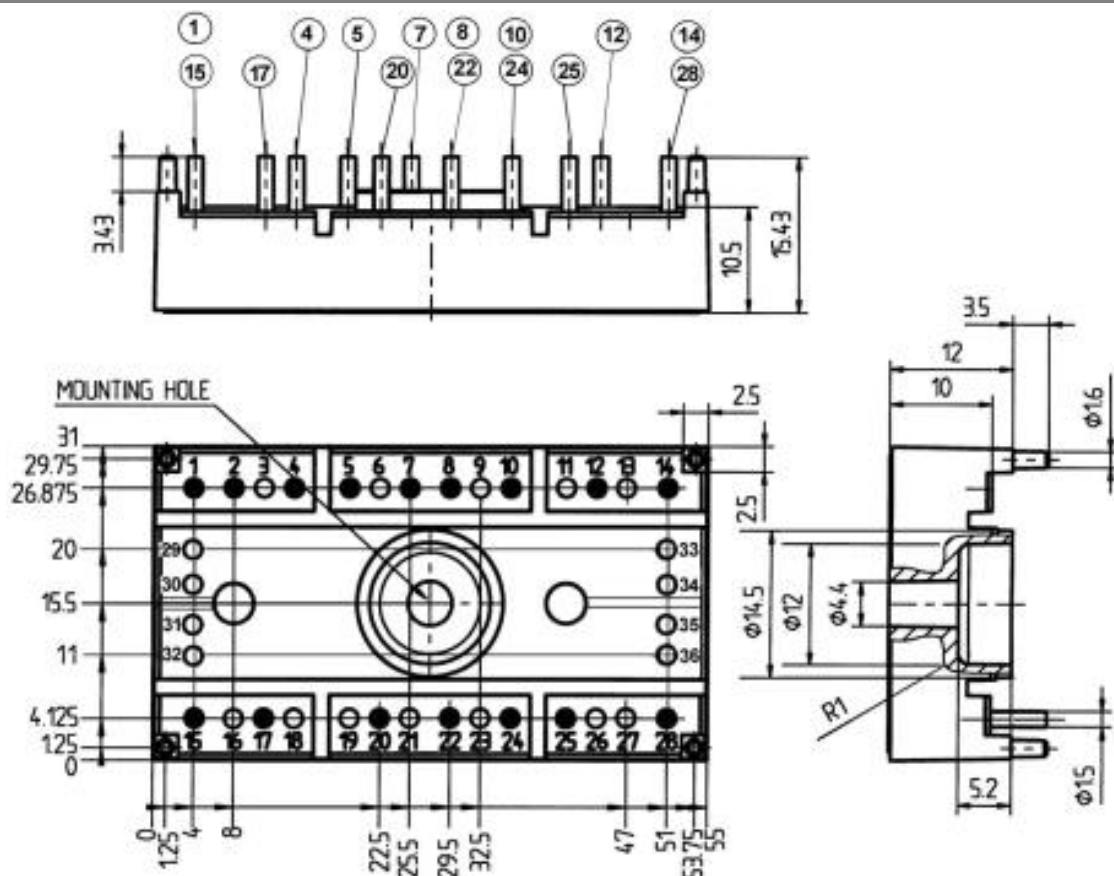
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Freewheeling Diode					
$V_F = V_{EC}$	$I_{Fnom} = 30\text{ A}; V_{GE} = 0\text{ V}$		$T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$	1,3	V
			$T_j = 125\text{ }^{\circ}\text{C}_{chiplev.}$	1,2	V
V_{F0}			$T_j = 125\text{ }^{\circ}\text{C}$	0,85	V
r_F			$T_j = 125\text{ }^{\circ}\text{C}$	9	mΩ
I_{RRM}	$I_{Fnom} = 30\text{ A}$ $di/dt = -500\text{ A}/\mu\text{s}$ $V_{CC} = 300\text{ V}$		$T_j = 125\text{ }^{\circ}\text{C}$	3	A
Q_{rr}				3	μC
E_{rr}				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%, $T_r = 25\text{ (100)}^{\circ}\text{C}$		1000 (1670)		Ω

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

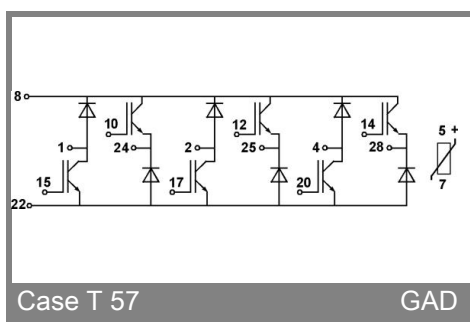
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Case T57 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 57

GAD