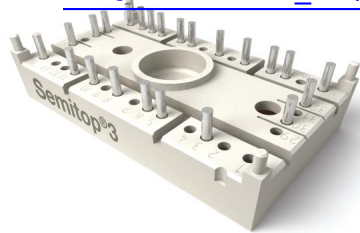


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SEMITOP® 3

IGBT Module

SK25GD063

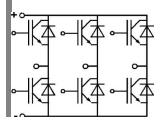
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punchthrough IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E63532

Typical Applications

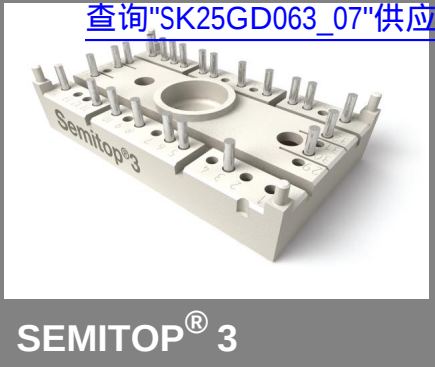
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS



GD

Absolute Maximum Ratings				$T_s = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions			Values	Units
IGBT					
V_{CES}	$T_j = 25^\circ\text{C}$			600	V
I_C	$T_j = 125^\circ\text{C}$	$T_s = 25^\circ\text{C}$		30	A
		$T_s = 80^\circ\text{C}$		21	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$			60	A
V_{GES}				± 20	V
t_{psc}	$V_{CC} = 300\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125^\circ\text{C}$ $V_{CES} < 600\text{ V}$			10	μs
Inverse Diode					
I_F	$T_j = 150^\circ\text{C}$	$T_s = 25^\circ\text{C}$		36	A
		$T_s = 80^\circ\text{C}$		24	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$				A
I_{FSM}	$t_p = 10\text{ ms}; \text{half sine wave } T_j = 150^\circ\text{C}$			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 = 0,7 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _J = 25 °C T _J = 125 °C			0,1	mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 30 V	T _J = 25 °C T _J = 125 °C			120	nA nA
V _{CE0}		T _J = 25 °C T _J = 125 °C		1 1,1		V V
r _{CE}	V _{GE} = 15 V	T _J = 25°C T _J = 125°C		37 30		mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 30 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.} T _J = 125°C _{chiplev.}		2,1 2	2,5 2,3	V V
C _{ies} C _{oes} C _{res}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		1,3 0,1		nF nF nF
Q _G	V _{GE} = 0 ... 20 V			125		nC
t _{d(on)} t _r E _{on}	R _{Gon} = 33 Ω	V _{CC} = 300V I _{Cnom} = 25A		40 50 1,3		ns ns mJ
t _{d(off)} t _f E _{off}	R _{Goff} = 33 Ω	T _J = 125 °C V _{GE} =±15V		200 25 0,9		ns ns mJ
R _{th(j-s)}	per IGBT				1,4	K/W



IGBT Module

SK25GD063

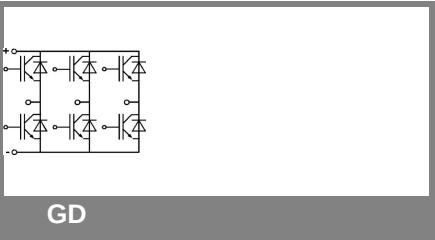
Preliminary Data

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- Switched mode power supplies
- UPS

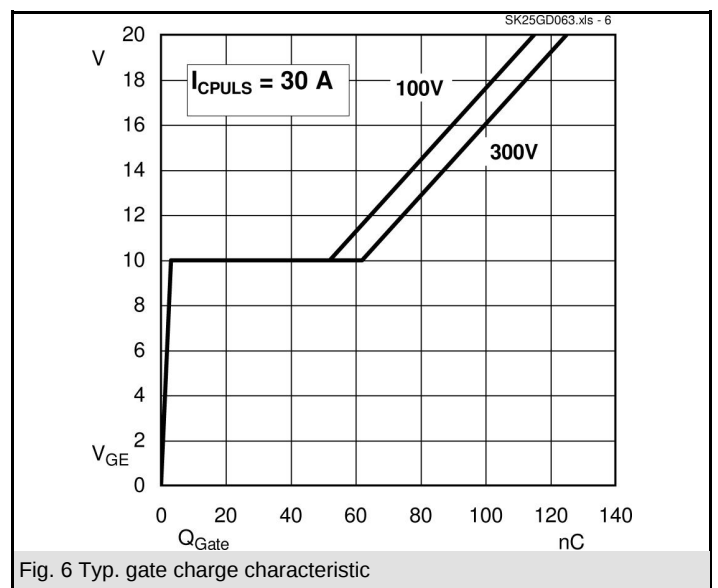
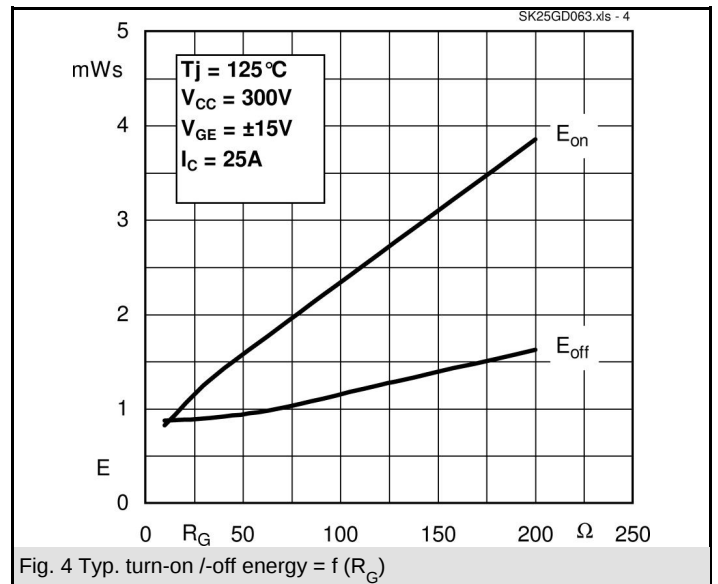
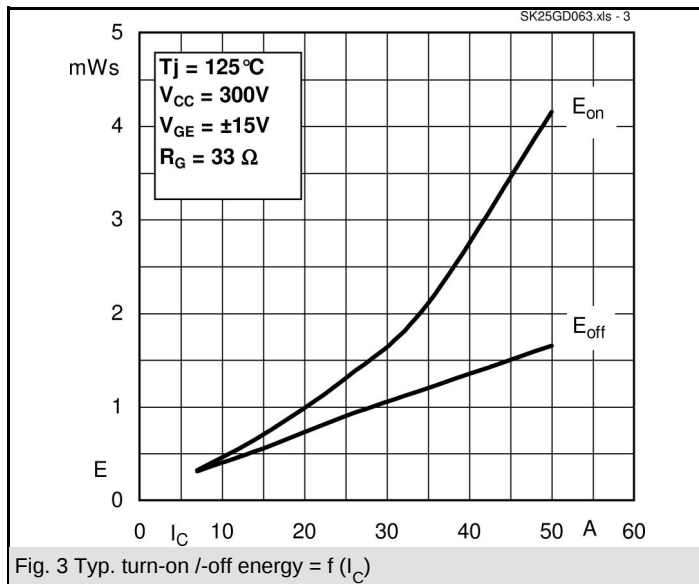
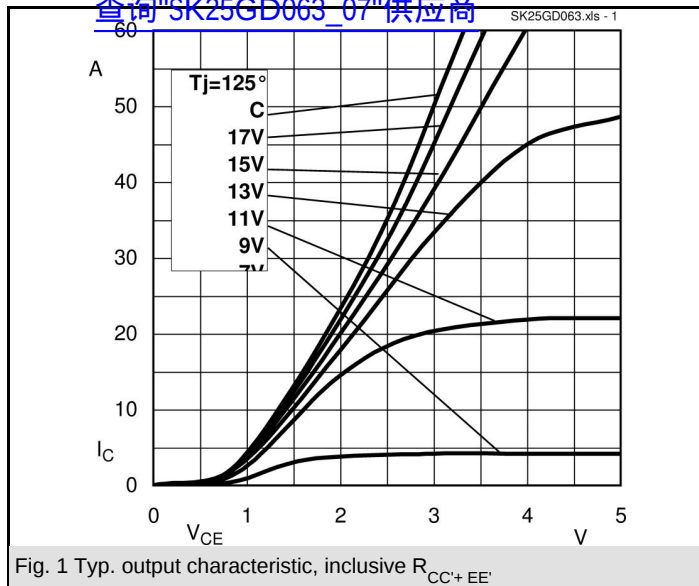


Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 25 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,45	1,7	V
		T _j = 125 °C _{chiplev.}		1,4	1,75	V
V _{F0}		T _j = 125 °C		0,85	0,9	V
r _F		T _j = 125 °C		22	32	mΩ
I _{RRM}	I _{Fnom} = 25 A di/dt = -500 A/μs V _{CC} = 300V	T _j = 125 °C		16		A
Q _{rr}				2		μC
E _{rr}				0,25		mJ
R _{th(j-s)D}	per diode				1,7	K/W
M _s	to heat sink M1		2,25		2,5	Nm
w				30		g

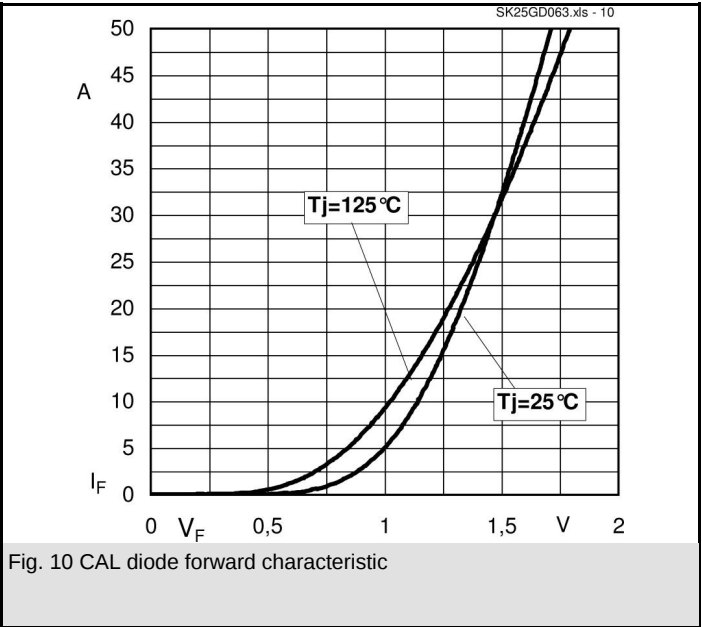
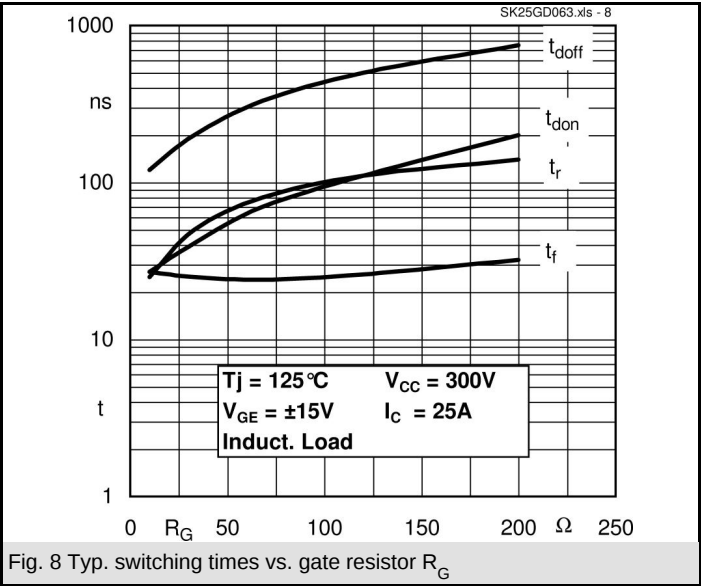
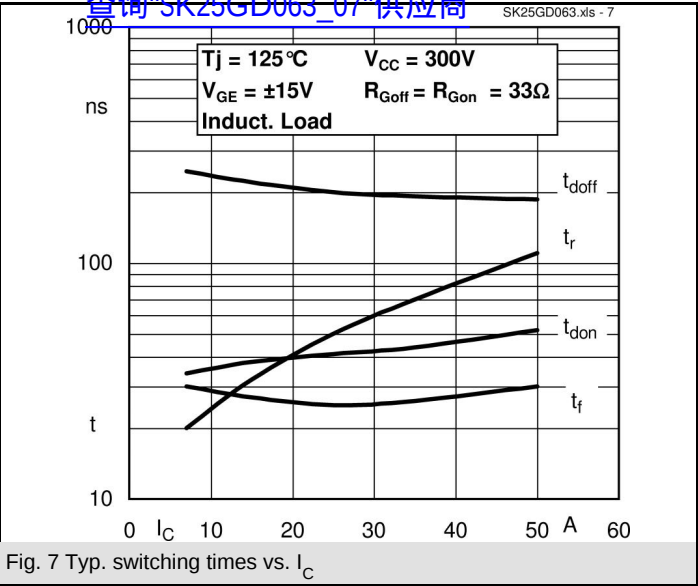
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

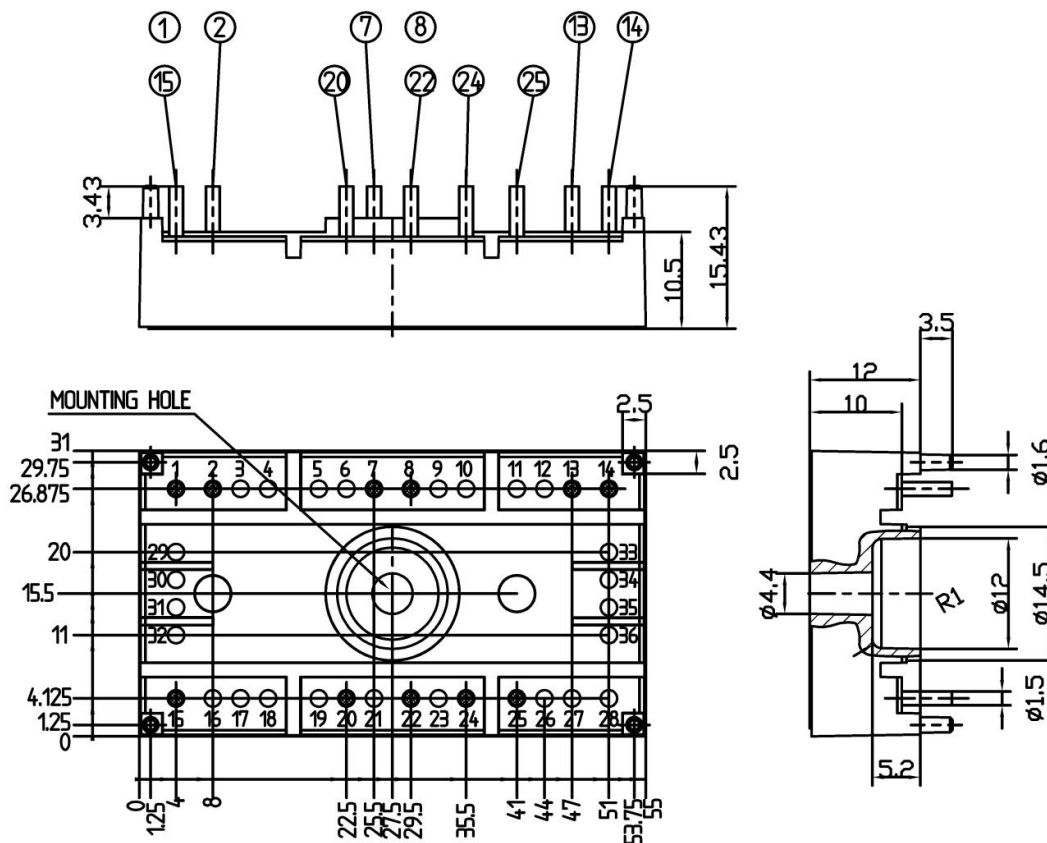
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Case T12 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)

