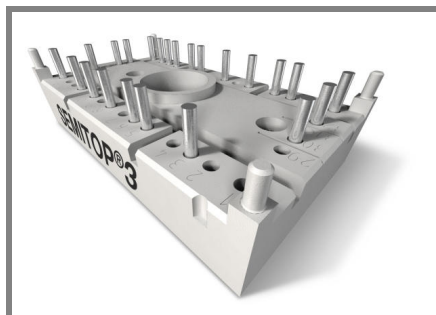




SEMITOP® 3

IGBT Module

SK25GD063

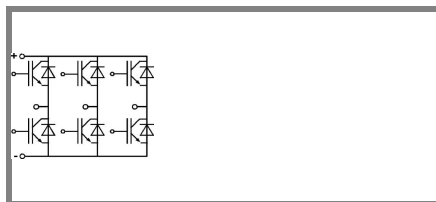
Preliminary Data

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*

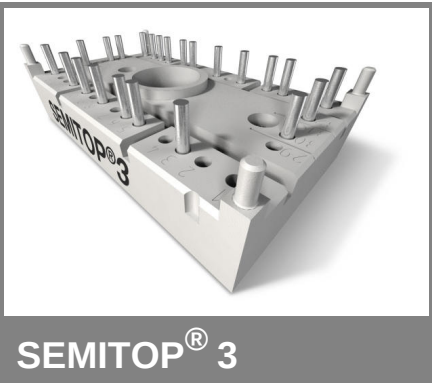
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS



GD

Absolute Maximum Ratings		T _s = 25 °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	30	A
		T _s = 80 °C	21	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}	60	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	36	A
		T _s = 80 °C	24	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}		A	
I _{FSM}	t _p = 10 ms; half sine wave T _j = 150 °C	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					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 0,7\text{ mA}$	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$			0,1	$T_j = 25\text{ °C}$ mA
					$T_j = 125\text{ °C}$ mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 30\text{ V}$			120	$T_j = 25\text{ °C}$ nA
					$T_j = 125\text{ °C}$ nA
V_{CE0}			1		$T_j = 25\text{ °C}$ V
					$T_j = 125\text{ °C}$ V
r_{CE}	$V_{GE} = 15\text{ V}$		37		$T_j = 25\text{ °C}$ m Ω
					$T_j = 125\text{ °C}$ m Ω
$V_{CE(sat)}$	$I_{Cnom} = 30\text{ A}$, $V_{GE} = 15\text{ V}$		2,1	2,5	$T_j = 25\text{ °C}_{chiplev.}$ V
					$T_j = 125\text{ °C}_{chiplev.}$ V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$		1,3		nF
C_{oes}					nF
C_{res}					nF
Q_G	$V_{GE} = 0 \dots 20\text{ V}$		125		nC
$t_{d(on)}$	$R_{Gon} = 33\text{ }\Omega$		40		$V_{CC} = 300\text{ V}$ ns
t_r					$I_C = 25\text{ A}$ ns
E_{on}	$R_{Goff} = 33\text{ }\Omega$		1,3		$T_j = 125\text{ °C}$ mJ
$t_{d(off)}$					$V_{GE} = \pm 15\text{ V}$ ns
t_f					25 ns
E_{off}			0,9		mJ
$R_{th(j-s)}$	per IGBT			1,4	K/W



IGBT Module

SK25GD063

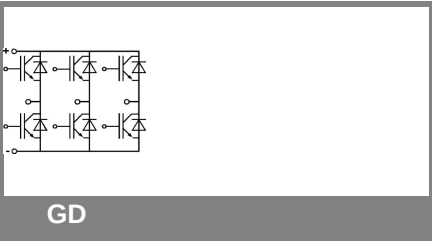
Preliminary Data

Features

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Typical Applications*

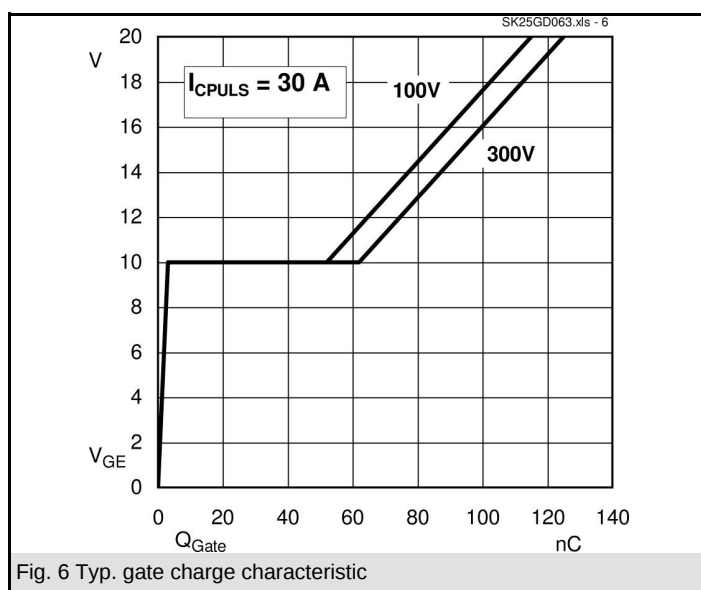
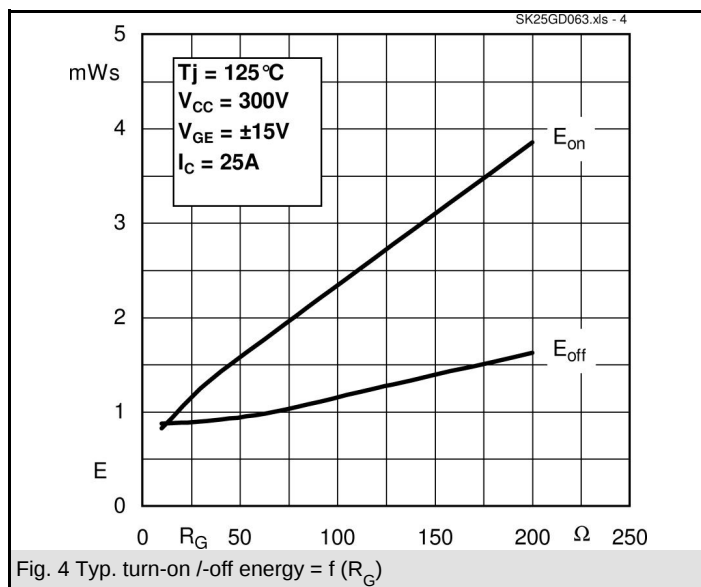
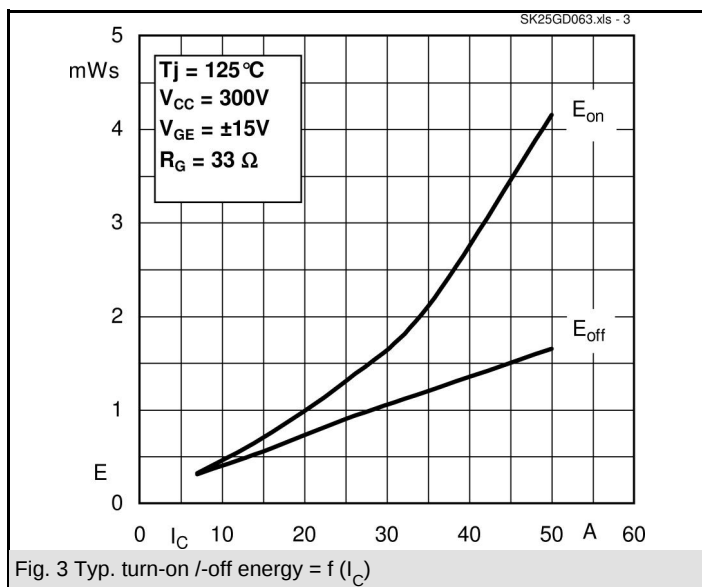
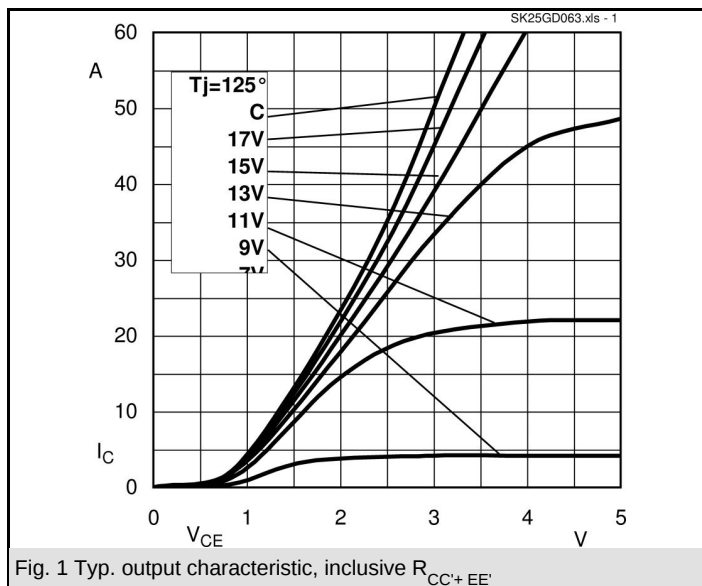
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

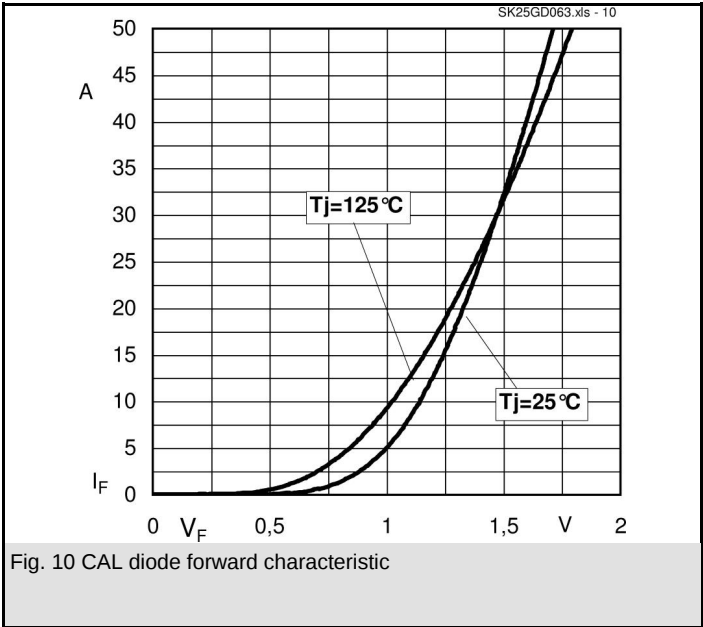
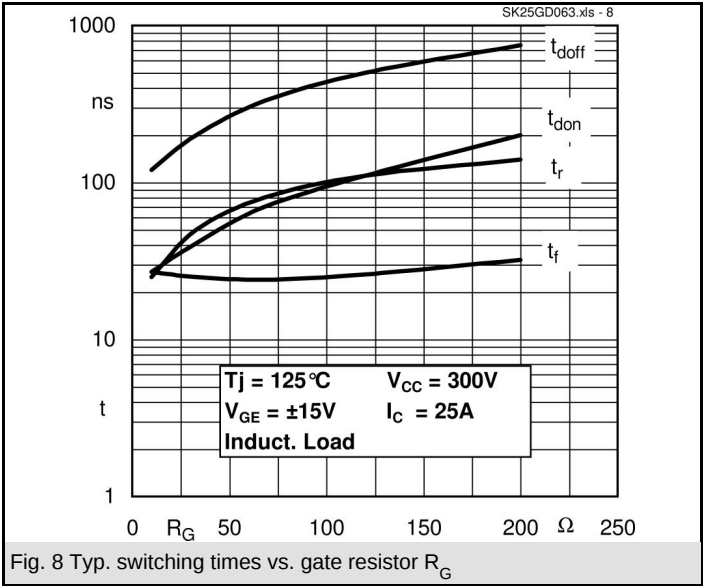
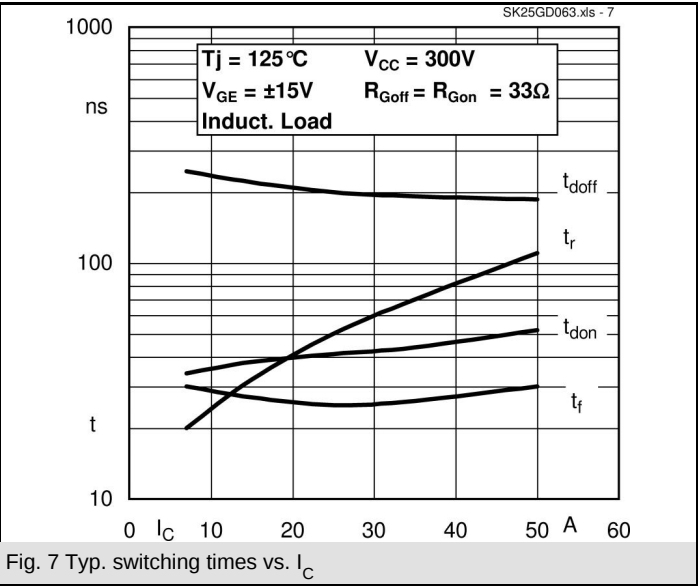


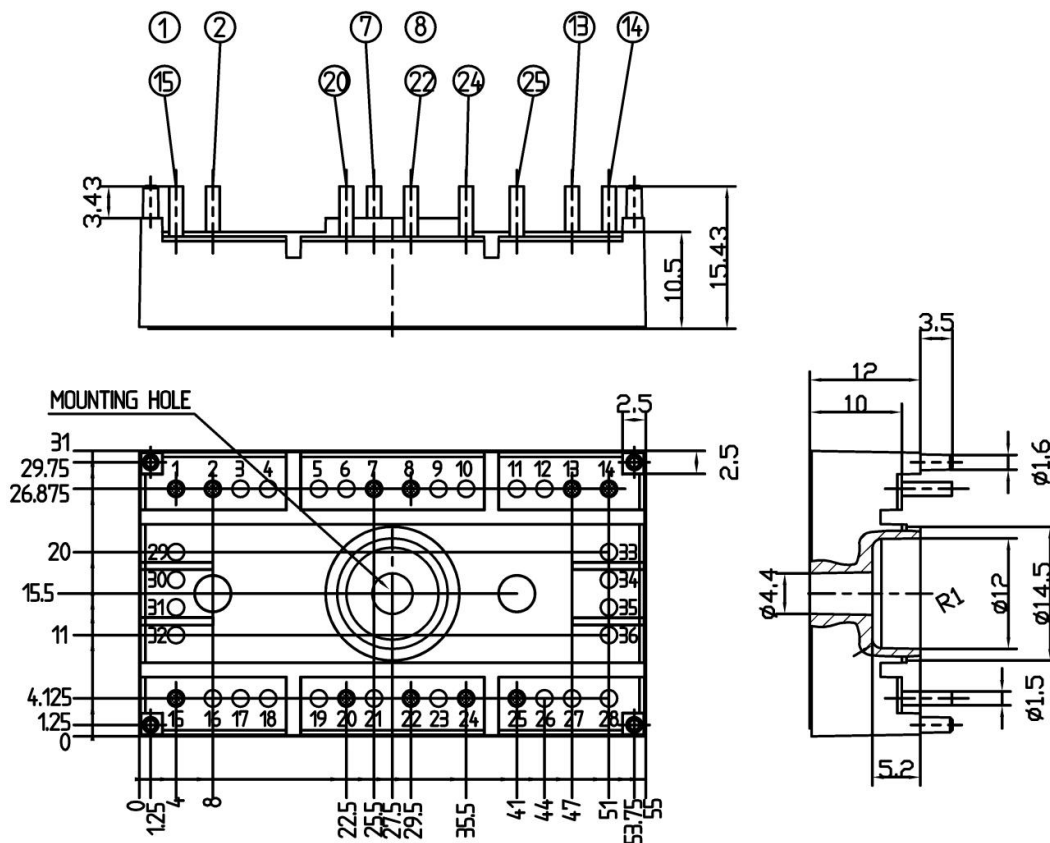
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 25 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,45	1,7	V
		T _j = 125 °C _{chiplev.}		1,4	1,75	V
V _{F0}		T _j = 125 °C		0,85	0,9	V
r _F		T _j = 125 °C		22	32	mΩ
I _{RRM}	I _F = 25 A di/dt = -500 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.

* 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.







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

