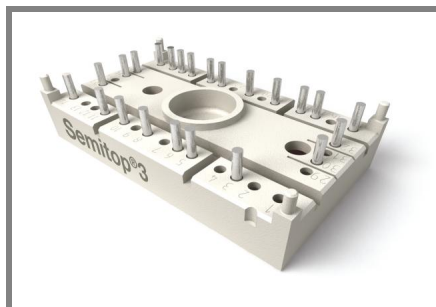




SEMITOP® 3

IGBT Module

SK25GAD063T

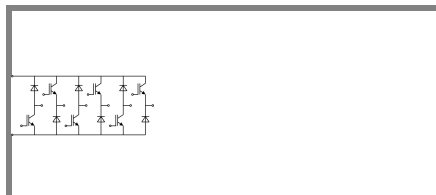
Preliminary Data

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. E63 532
- Integrated PTC temperature sensor

Typical Applications

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

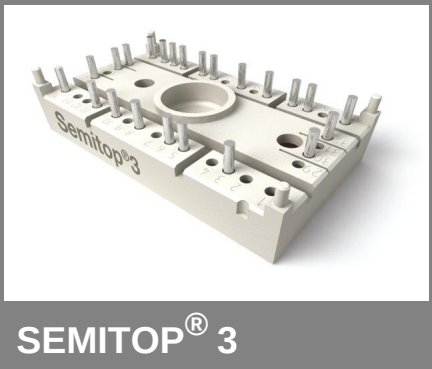


GAD

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	$T_j = 125\text{ °C}$	$T_s = 25\text{ °C}$		30	A
		$T_s = 80\text{ °C}$		21	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$			60	A
V_{GES}				± 20	V
t_{psc}	$V_{CC} = 300\text{ V}$; $V_{GE} \leq 20\text{ V}$; $T_j = 125\text{ °C}$ $V_{CES} < 600\text{ V}$			10	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	$T_j = 150\text{ °C}$	$T_{case} = 25\text{ °C}$		36	A
		$T_{case} = 80\text{ °C}$		24	A
I_{FRM}					A
I_{FSM}	$t_p = 10\text{ ms}$; half sine wave	$T_j = 150\text{ °C}$		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				$T_s = 25\text{ °C}$, 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}	$V_{GE} = 0\text{ V}$, $V_{CE} = V_{CES}$	$T_j = 25\text{ °C}$				0,1 mA
		$T_j = 125\text{ °C}$				mA
I_{GES}	$V_{CE} = 0\text{ V}$, $V_{GE} = 30\text{ V}$	$T_j = 25\text{ °C}$				120 nA
		$T_j = 125\text{ °C}$				nA
V_{CE0}		$T_j = 25\text{ °C}$			1,2	V
		$T_j = 125\text{ °C}$			0,8	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}$			30	m Ω
		$T_j = 125\text{ °C}$			47	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 30\text{ A}$, $V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$			2,1	2,5 V
		$T_j = 125\text{ °C}_{chiplev.}$			2,2	V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$			1,35	nF
C_{oes}						nF
C_{res}					0,12	nF
$t_{d(on)}$	$R_{Gon} = 33\text{ }\Omega$	$V_{CC} = 300\text{ V}$ $I_{Cnom} = 25\text{ A}$			40	ns
t_r					50	ns
E_{on}	$R_{Goff} = 33\text{ }\Omega$	$T_j = 125\text{ °C}$ $V_{GE} = \pm 15\text{ V}$			1,3	mJ
$t_{d(off)}$					200	ns
t_f					25	ns
E_{off}					0,9	mJ
$R_{th(j-s)}$	per IGBT				1,4	K/W

SK25GAD063T



IGBT Module

SK25GAD063T

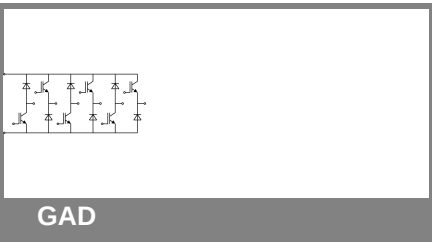
Preliminary Data

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. E63 532
- Integrated PTC temperature sensor

Typical Applications

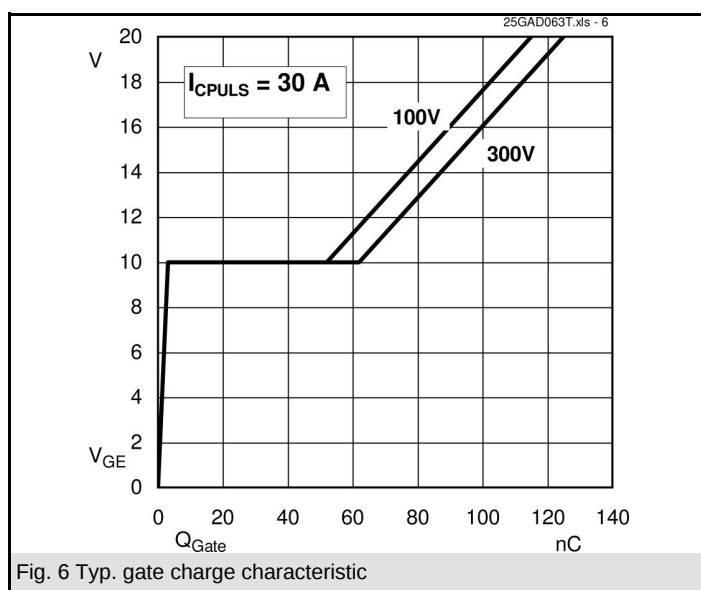
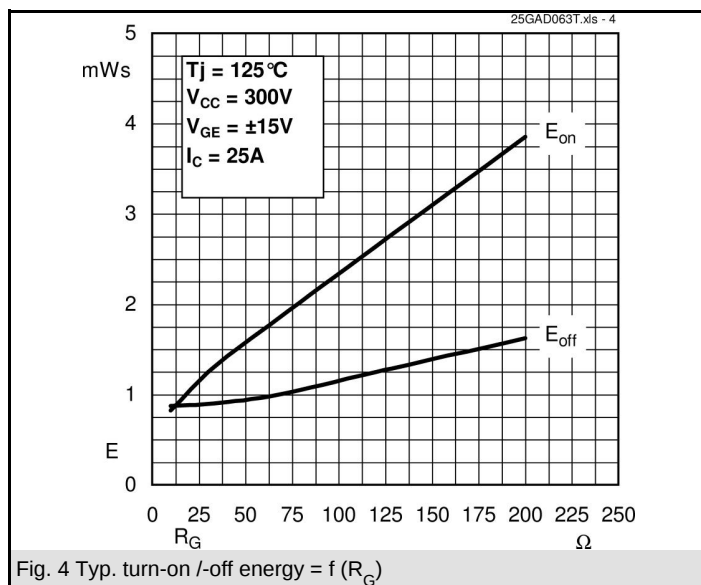
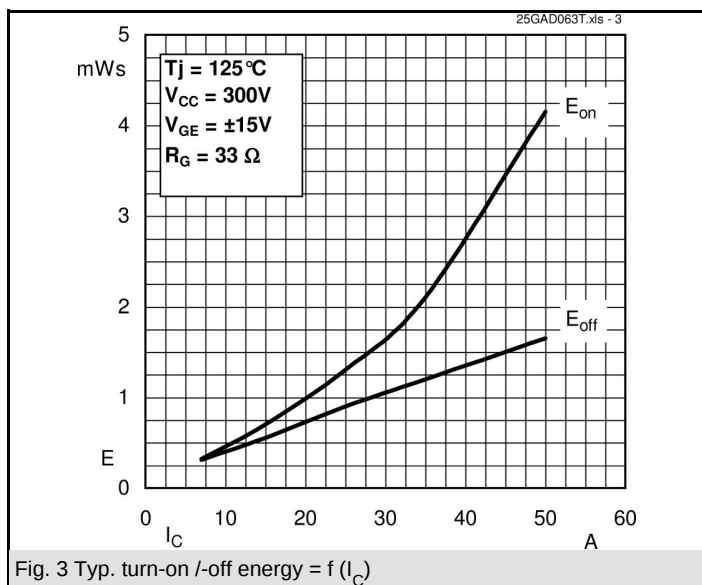
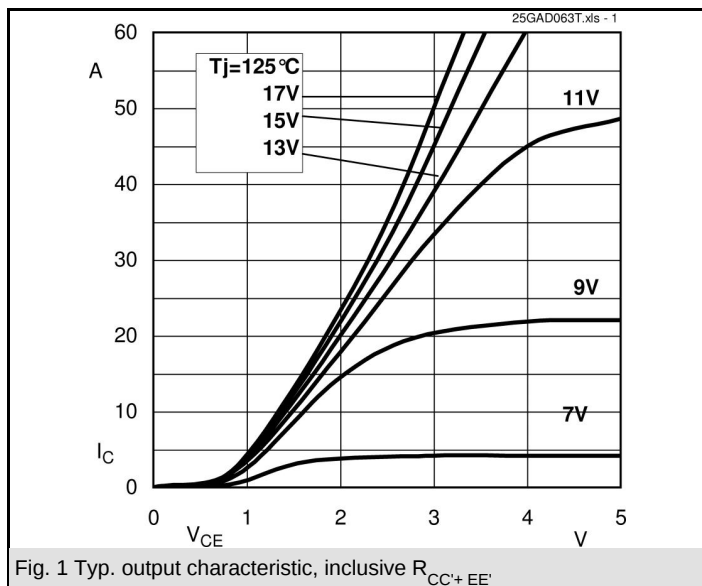
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

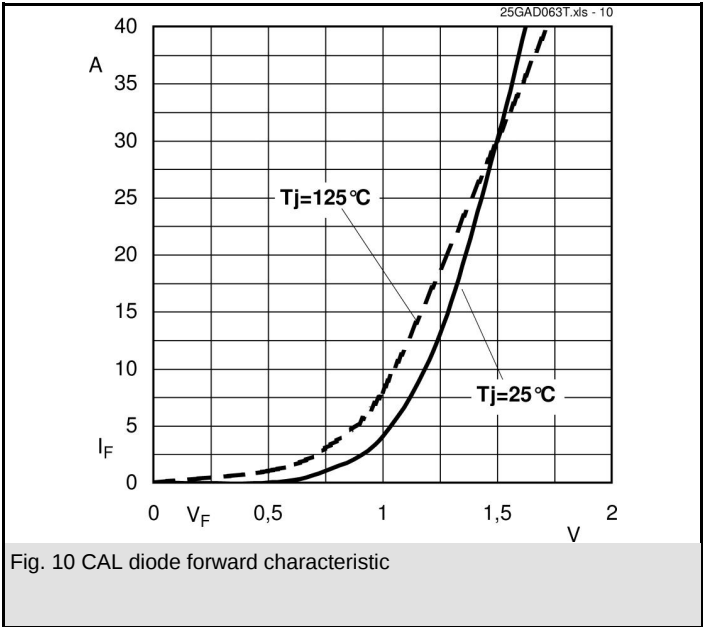
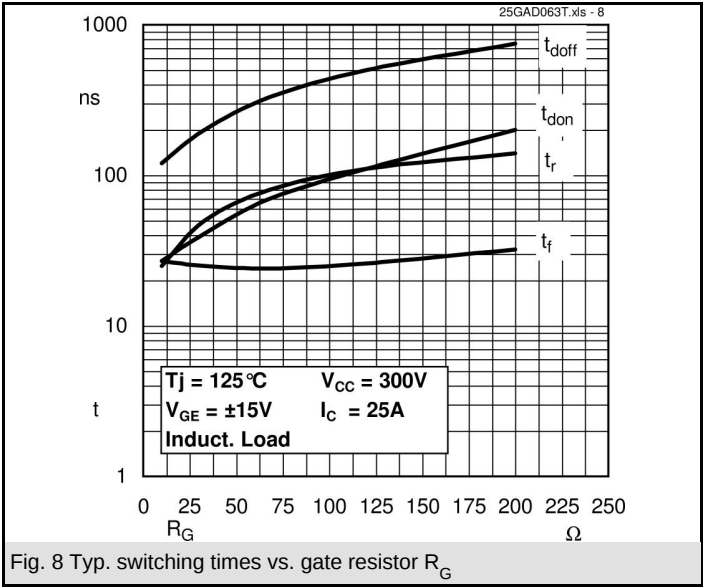
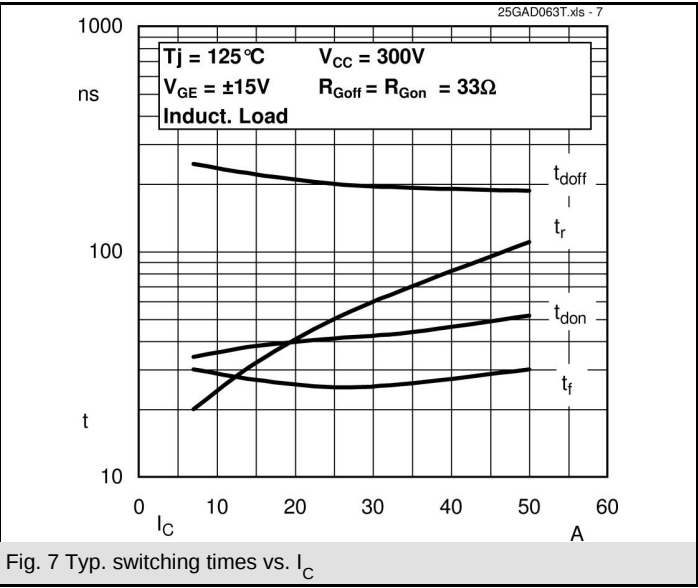


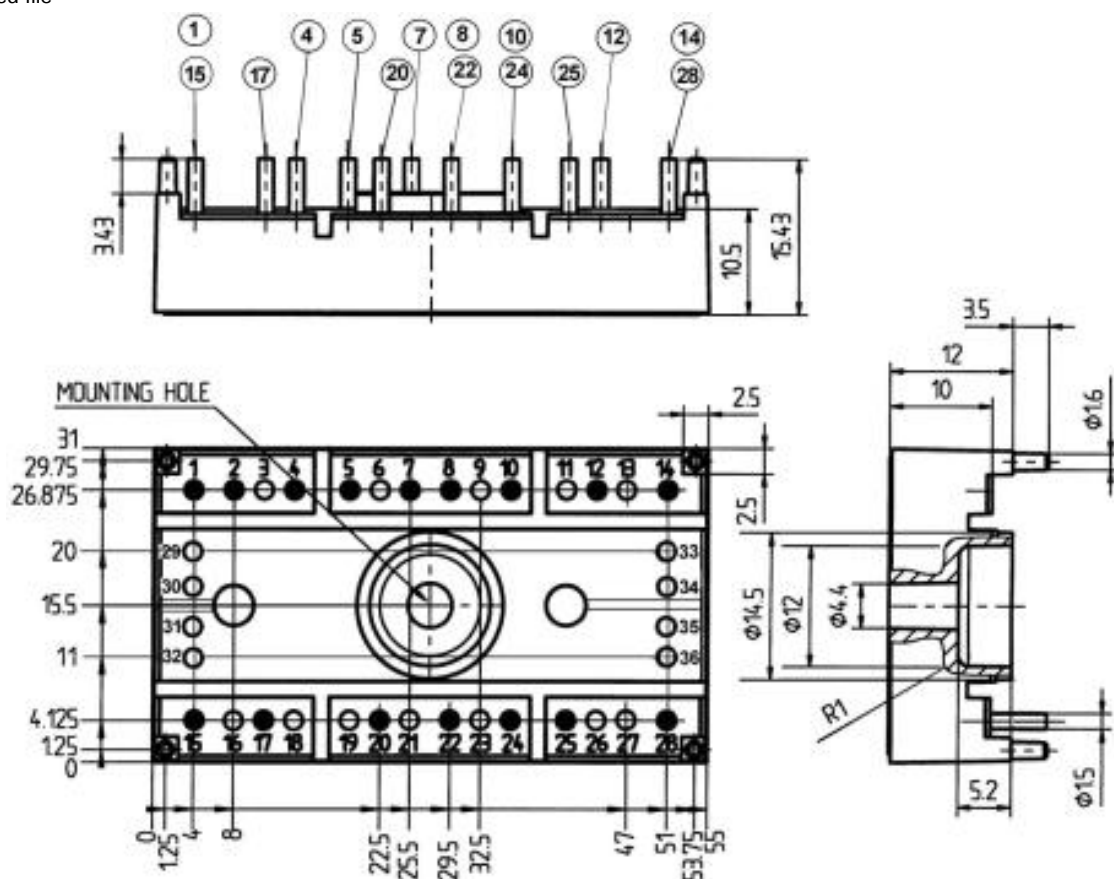
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
V _F = V _{EC}	I _{Fnom} = 10 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,45	1,7	V
		T _j = 125 °C _{chiplev.}		1,4	1,7	V
V _{F0}		T _j = 125 °C		0,85	0,9	V
r _F		T _j = 125 °C		55	80	mΩ
I _{RRM}	I _{Fnom} = 10 A di/dt = 200 A/μs V _{CC} = 300V	T _j = 125 °C		6,5		A
Q _{rr}				1		μC
E _{rr}				0,1		mJ
R _{th(j-s)D}	per diode				2,3	K/W
Freewheeling 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 = 25 °C				V
		T _j = 125 °C		0,85	0,9	V
r _F		T _j = 25 °C				V
		T _j = 125 °C		22	32	V
I _{RRM}	I _{Fnom} = 25 A di/dt = -500 A/μs V _R =300V	T _j = 125 °C		16		A
Q _{rr}				2		μC
E _{rr}				0,25		mJ
R _{th(j-s)FD}	per diode				1,7	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)°C			1000 (1670)		Ω

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

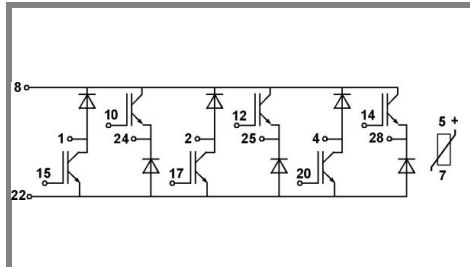
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Case T57 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T 57

GAD