

SEMITOP[®] 2

IGBT Module

SK 60GM123

Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- High short circuit capability
- Low tail current with low temperature dependence

Typical Applications*

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



GM

Absolute Maximum Ratings		$T_s = 25\text{ }^{\circ}\text{C}$, unless otherwise specified		
Symbol	Conditions	Values	Units	
IGBT				
V_{CES}	$T_j = 25\text{ }^{\circ}\text{C}$	1200	V	
I_C	$T_j = 125\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	60	A
		$T_s = 80\text{ }^{\circ}\text{C}$	40	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	100	A	
V_{GES}		± 20	V	
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125\text{ }^{\circ}\text{C}$ $V_{CES} < 1200\text{ V}$	10	μs	
Inverse Diode				
I_F	$T_j = 150\text{ }^{\circ}\text{C}$	$T_s = 25\text{ }^{\circ}\text{C}$	60	A
		$T_s = 80\text{ }^{\circ}\text{C}$	40	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	100	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 = 2 mA		4,5	5,5	6,5	V
I _{CES}	V _{GE} = V, V _{CE} = V _{CES} T _J = °C					mA
V _{CE0}	T _J = °C					V
r _{CE}	V _{GE} = V T _J = °C					mΩ
V _{CE(sat)}	I _{Cnom} = 50 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.}		2,5	3	V
		T _J = 125°C _{chiplev.}		3,1	3,7	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz			3,3		nF
C _{oes}						nF
C _{res}						nF
t _{d(on)}	R _{Gon} = 23 Ω	V _{CC} = 600V I _C = 50A		40		ns
t _r				45		ns
E _{on}				7		mJ
t _{d(off)}	R _{Goff} = 23 Ω	T _J = 125 °C		300		ns
t _f		V _{GE} = ±15V		45		ns
E _{off}				5,2		mJ
R _{th(j-s)}	per IGBT				0,6	K/W



IGBT Module

SK 60GM123

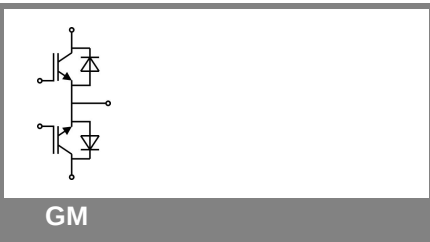
Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonding aluminium oxide ceramic (DBC)
- High short circuit capability
- Low tail current with low temperature dependence

Typical Applications*

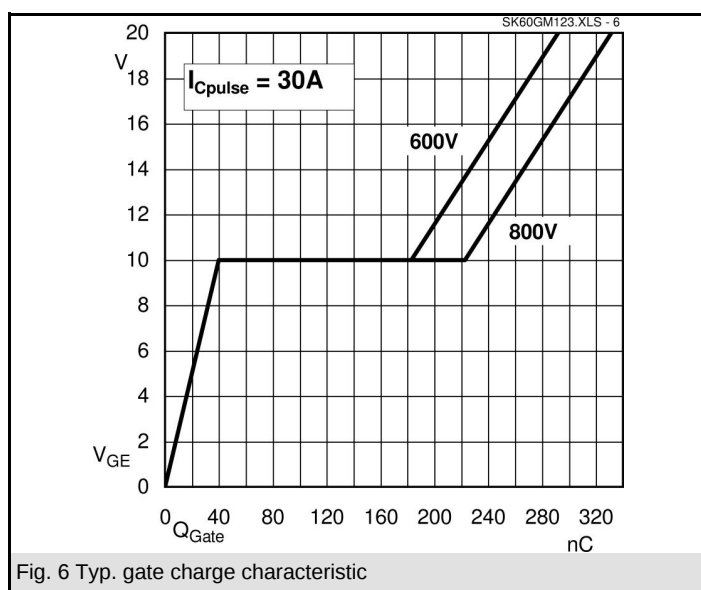
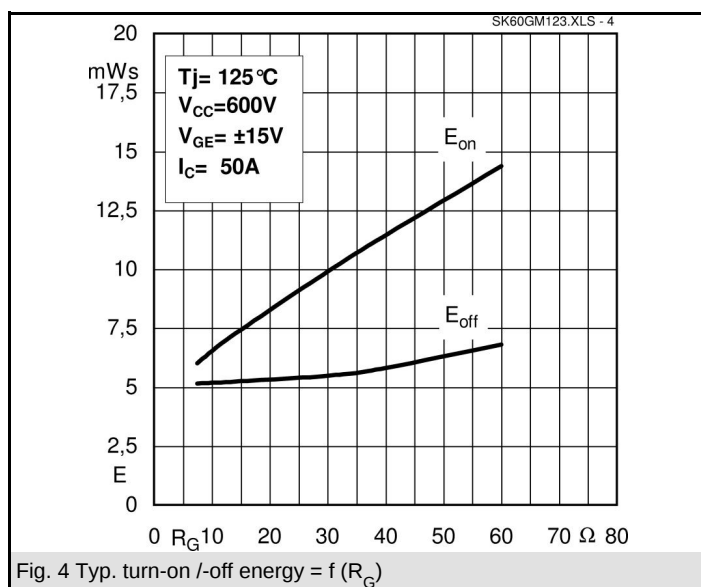
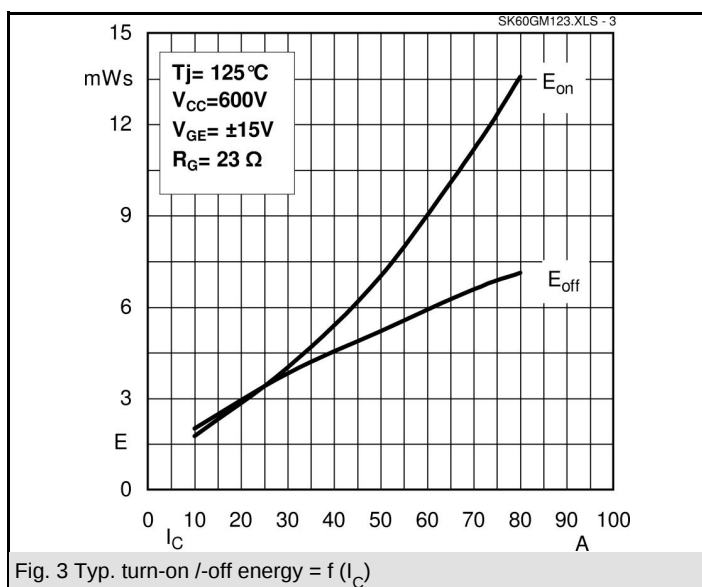
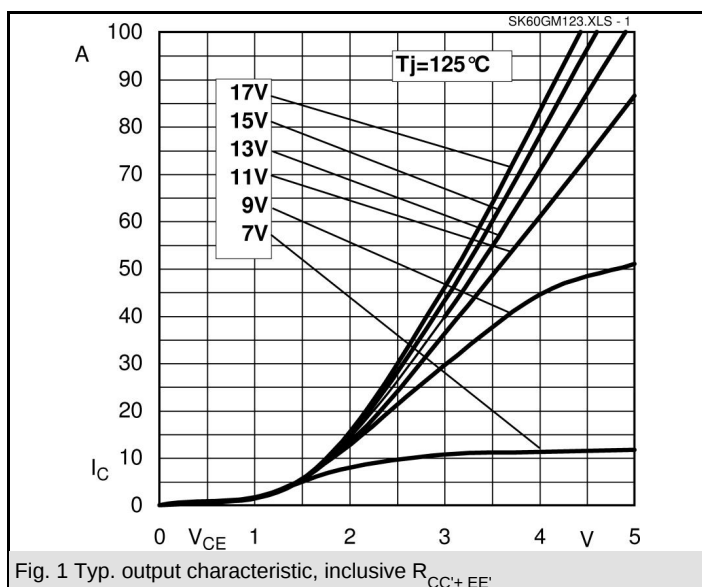
- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

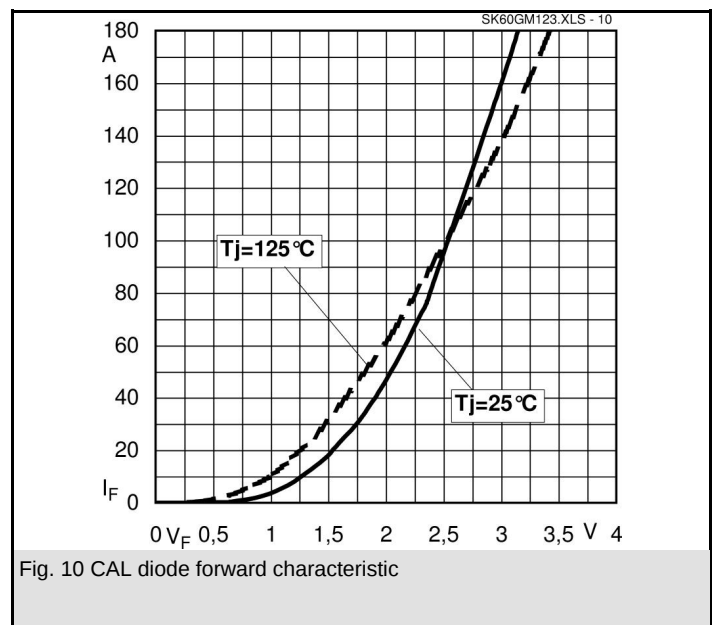
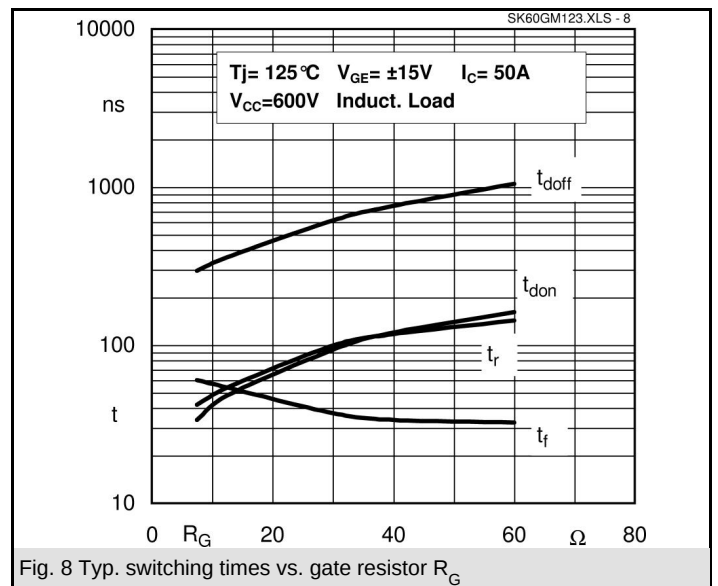
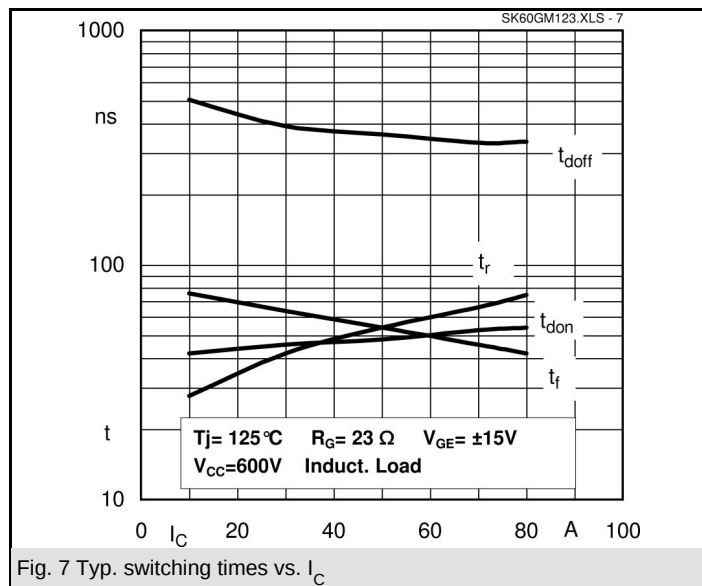


Characteristics		min.	typ.	max.	Units
Symbol	Conditions				
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 50\text{ A}; V_{GE} = 0\text{ V}$		$T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$	2	V
			$T_j = 125\text{ }^{\circ}\text{C}_{chiplev.}$	1,8	V
V_{F0}			$T_j = 125\text{ }^{\circ}\text{C}$	1	V
r_F			$T_j = 125\text{ }^{\circ}\text{C}$	16	mΩ
I_{RRM}	$I_F = 30\text{ A}$ $di/dt = 400\text{ A}/\mu\text{s}$ $V_{CC} = 600\text{ V}$		$T_j = 125\text{ }^{\circ}\text{C}$	16	A
Q_{rr}				5,4	μC
E_{rr}				2,4	mJ
$R_{th(j-s)D}$	per diode			0,7	K/W
M_s	to heat sink M1			2	Nm
w				21	g

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

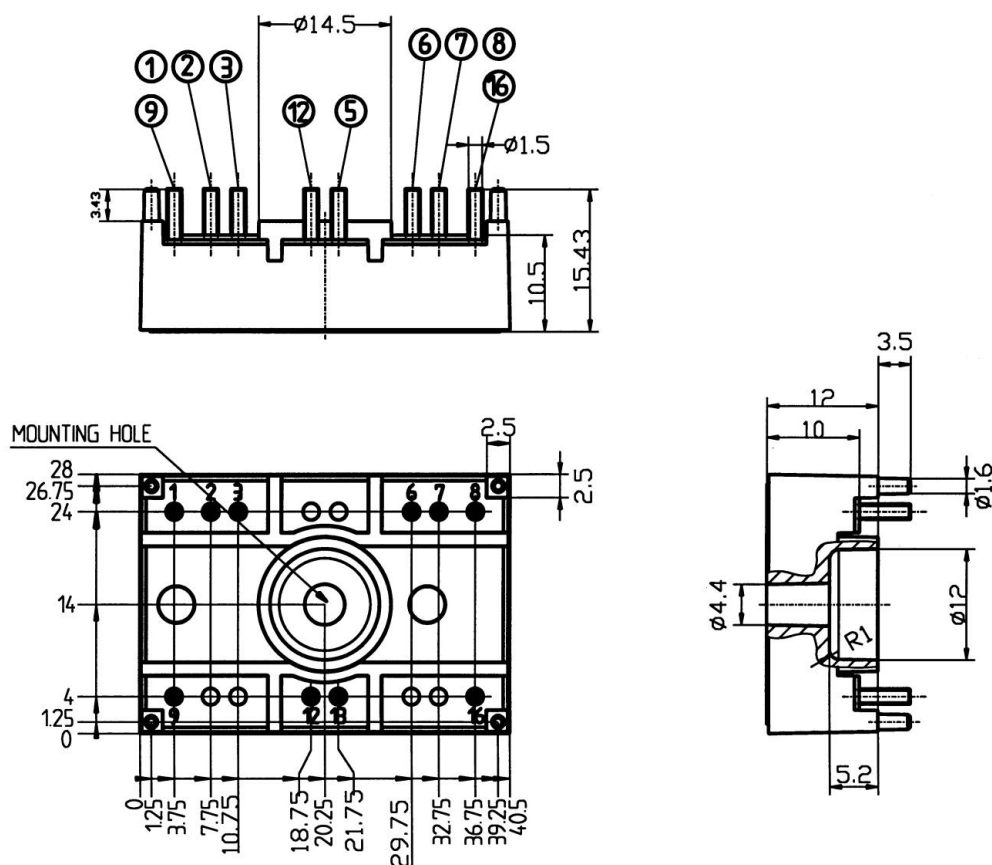
* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.



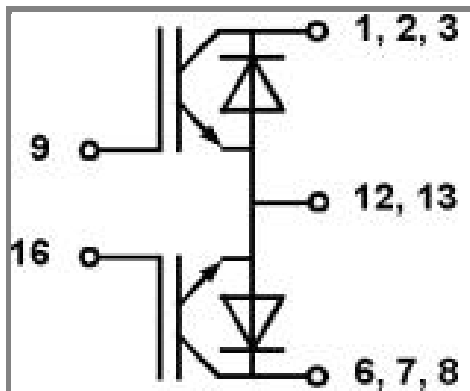


UL recognized file

no. E 63 532



Case T32 (Suggested hole diameter, in the PCB, for solder pins and plastic mounting pins: 2mm)



Case T35

GM