



SEMITRANS® 4

Trench IGBT Modules

SKM 600GA126D

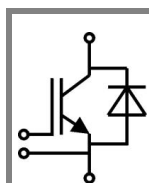
Preliminary Data

Features

- Trench = Trenchgate technology
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability, self limiting to $6 \times I_C$

Typical Applications

- AC inverter drives
- UPS
- Electronic welders



GA

Absolute Maximum Ratings		T _{case} = 25°C, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V _{CES}	T _j = 25 °C		1200	V
I _C	T _j = 150 °C	T _c = 25 °C	660	A
		T _c = 80 °C	460	A
I _{CRM}	I _{CRM} =2xI _{Cnom}		800	A
V _{GES}			± 20	V
t _{psc}	V _{CC} = 600 V; V _{GE} ≤ 20 V; T _j = 125 °C V _{CES} < 1200 V		10	µs
Inverse Diode				
I _F	T _j = 150 °C	T _c = 25 °C	490	A
		T _c = 80 °C	340	A
I _{FRM}	I _{FRM} =2xI _{Fnom}		800	A
I _{FSM}	t _p = 10 ms; sin. T _j = 150 °C		2900	A
Module				
I _{t(RMS)}			500	A
T _{vj}			-40 ... + 150	°C
T _{stg}			-40 ... + 125	°C
V _{isol}	AC, 1 min.		4000	V

Characteristics		$T_{case} = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 16\text{ mA}$	5	5,8	6,5	V
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$		$T_J = 25^\circ\text{C}$	0,2	mA
			$T_J = 125^\circ\text{C}$	0,6	mA
V_{CE0}			$T_J = 25^\circ\text{C}$	1	V
			$T_J = 125^\circ\text{C}$	0,9	V
r_{CE}	$V_{GE} = 15\text{ V}$		$T_J = 25^\circ\text{C}$	1,8	m Ω
			$T_J = 125^\circ\text{C}$	2,8	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 400\text{ A}, V_{GE} = 15\text{ V}$		$T_J = 25^\circ\text{C}_{chiplev.}$	1,7	V
			$T_J = 125^\circ\text{C}_{chiplev.}$	2	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$		29	nF
C_{oes}				1,5	nF
C_{res}				1,3	nF
Q_G	$V_{GE} = -8\text{ V} - +20\text{ V}$		3600		nC
R_{Gint}	$T_J = ^\circ\text{C}$		1,88		Ω
$t_{d(on)}$	$R_{Gon} = 2\ \Omega$	$V_{CC} = 600\text{ V}$ $I_{Cnom} = 400\text{ A}$	330		ns
t_r			65		ns
E_{on}			39		mJ
$t_{d(off)}$	$R_{Goff} = 2\ \Omega$	$T_J = 125^\circ\text{C}$ $V_{GE} = \pm 15\text{ V}$	630		ns
t_f			130		ns
E_{off}			64		mJ
$R_{th(j-c)}$	per IGBT			0,055	K/W

SKM 600GA126D



SEMITRANS® 4

Trench IGBT Modules

SKM 600GA126D

Preliminary Data

Features

- Trench = Trenchgate technology
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability, self limiting to $6 \times I_C$

Typical Applications

- AC inverter drives
- UPS
- Electronic welders

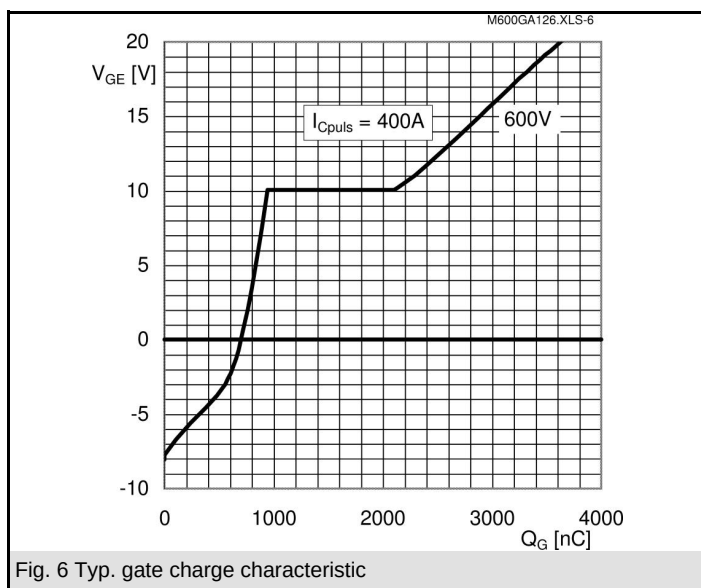
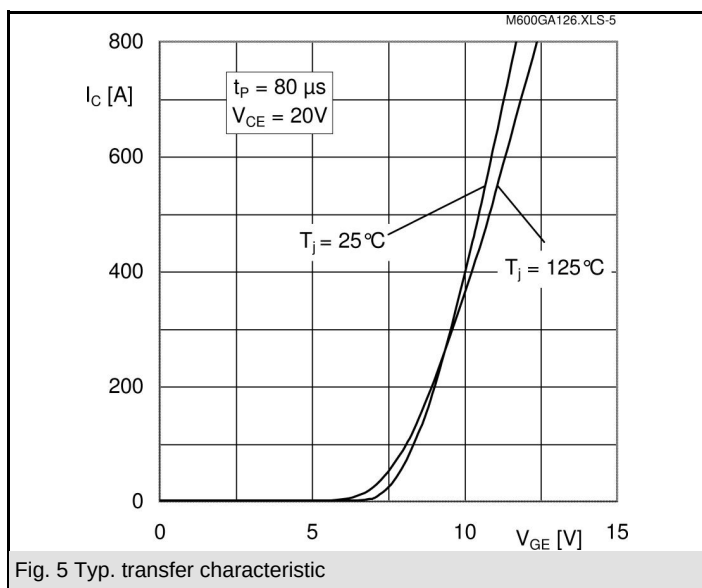
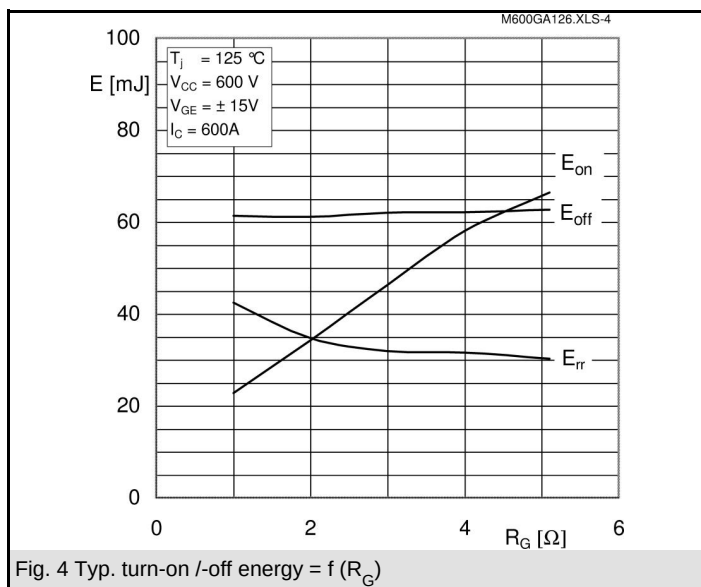
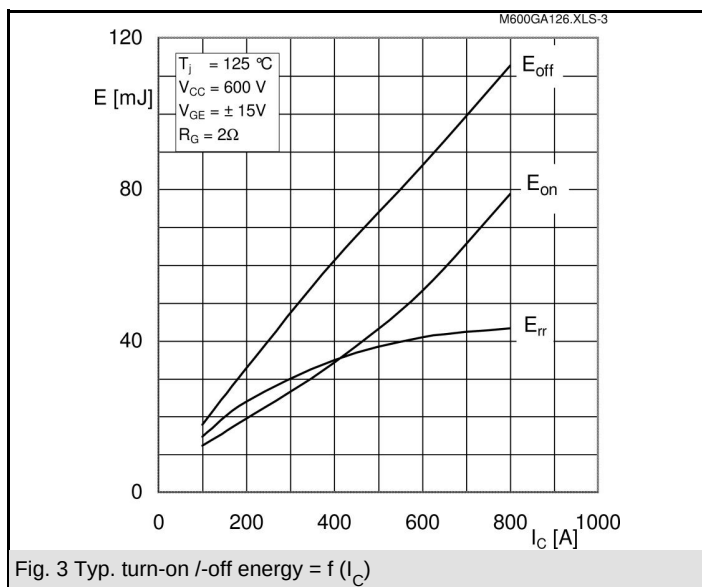
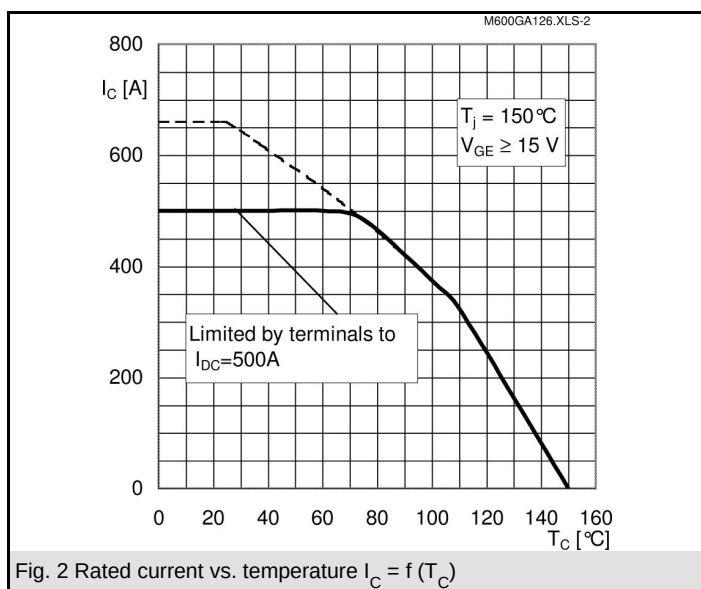
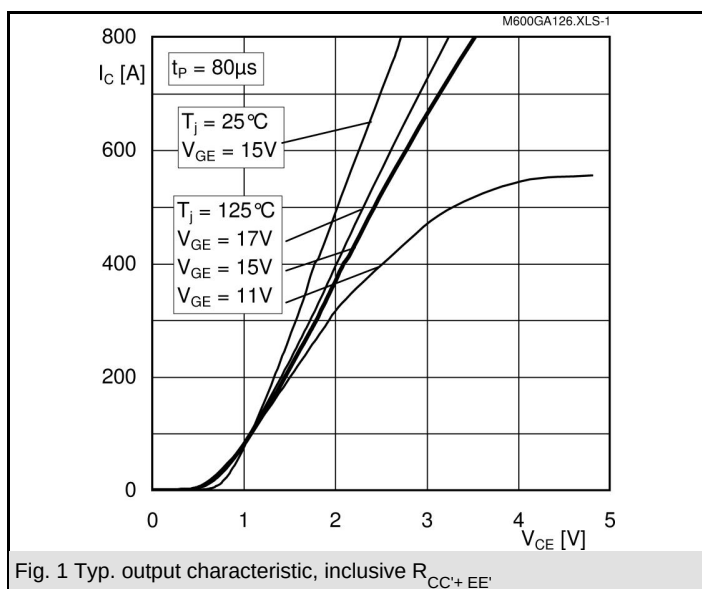


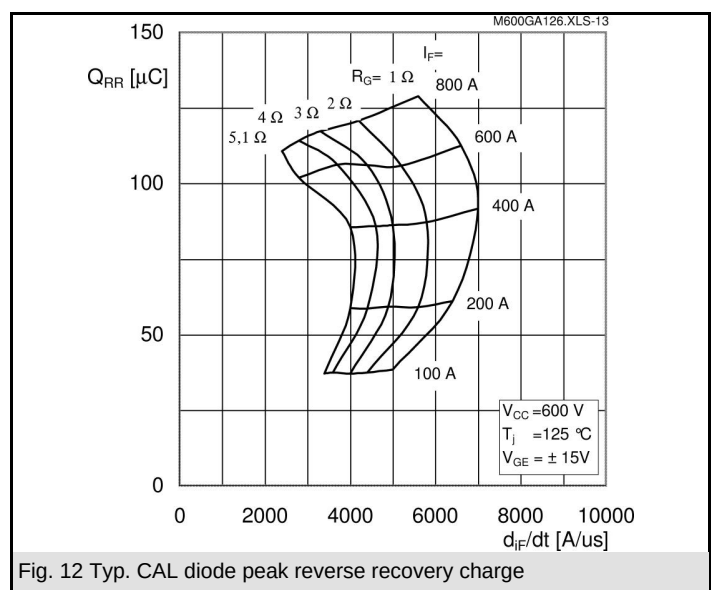
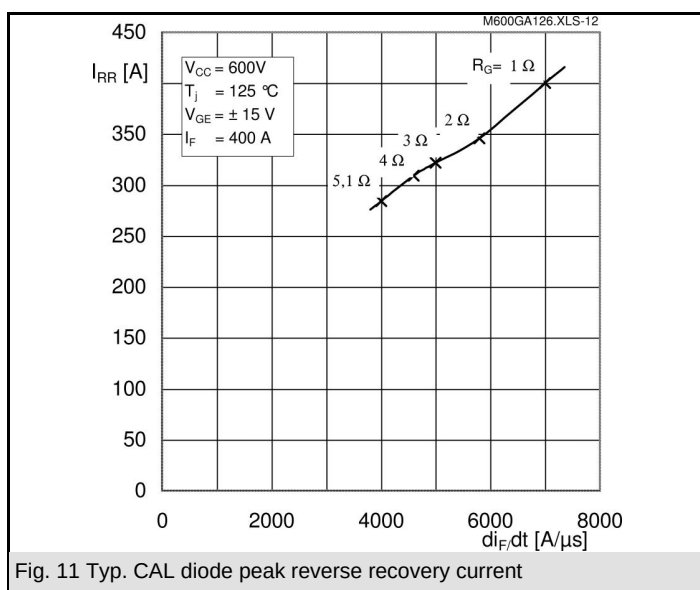
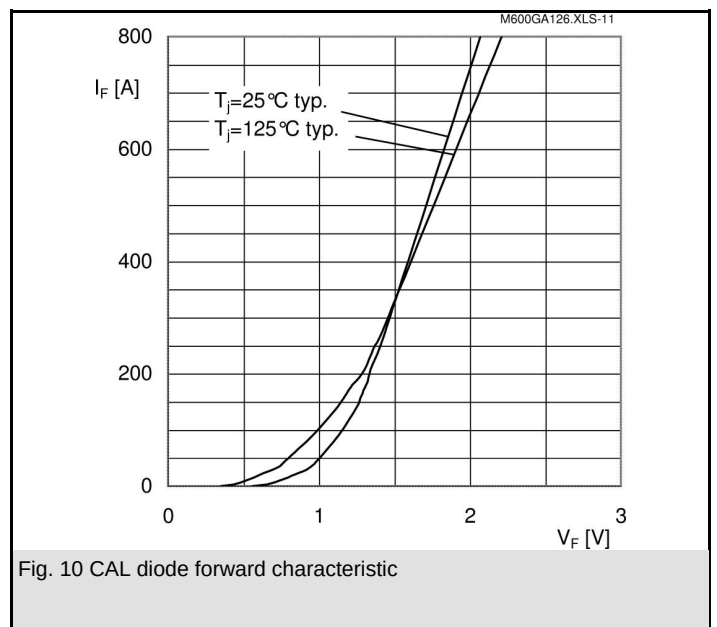
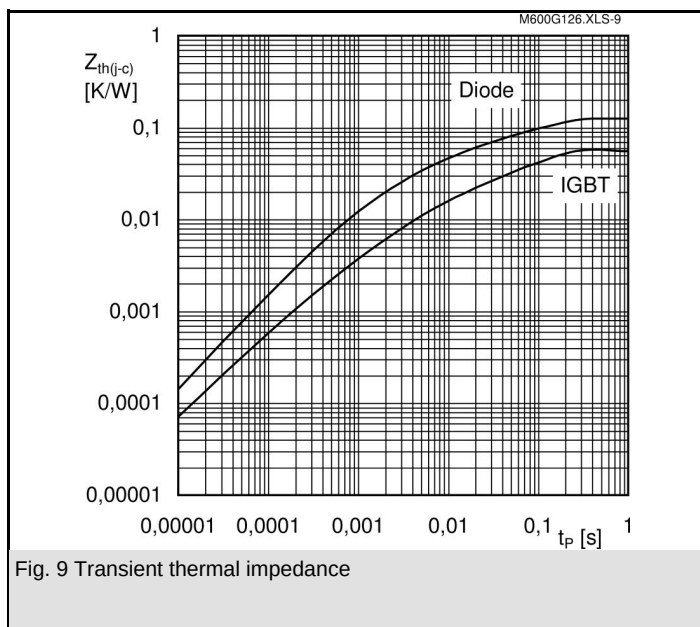
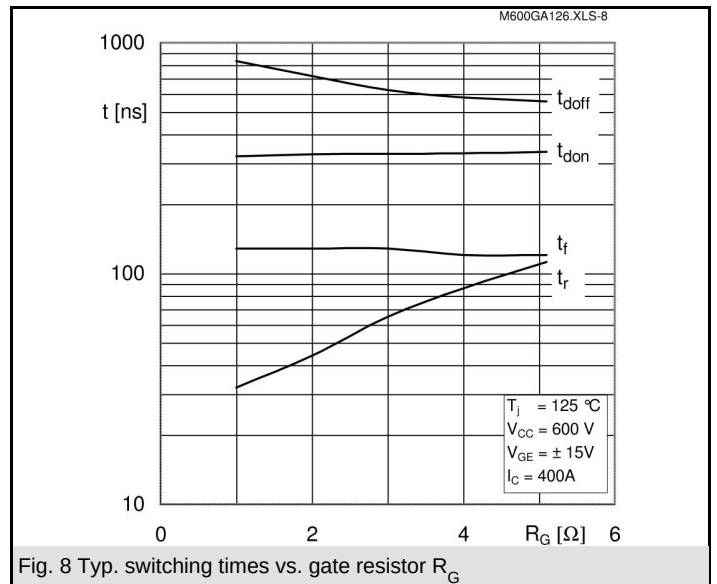
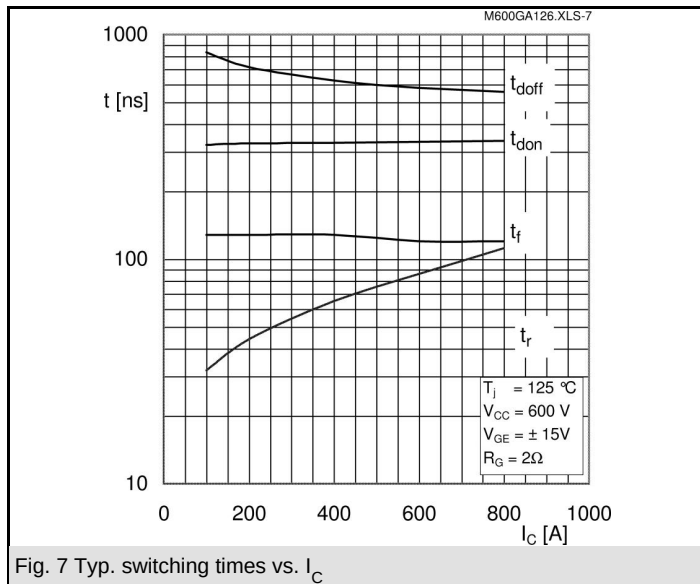
GA

Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse diode					
$V_F = V_{EC}$	$I_{Fnom} = 400\text{ A}; V_{GE} = 0\text{ V}$ $T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$		1,6	1,8	V
			1,6	1,8	V
V_{F0}	$T_j = 25\text{ }^{\circ}\text{C}$		1	1,1	V
	$T_j = 125\text{ }^{\circ}\text{C}$		0,8	0,9	V
r_F	$T_j = 25\text{ }^{\circ}\text{C}$		1,5	1,8	mΩ
	$T_j = 125\text{ }^{\circ}\text{C}$		2	2,3	mΩ
I_{RRM}	$I_{Fnom} = 400\text{ A}$		350		A
Q_{rr}	$di/dt = 5800\text{ A}/\mu\text{s}$		87		μC
E_{rr}	$V_{GE} = -15\text{ V}; V_{CC} = 600\text{ V}$				mJ
$R_{th(j-c)D}$	per diode			0,125	K/W
Module					
L_{CE}			15	20	nH
$R_{CC'+EE'}$	res., terminal-chip $T_{case} = 25\text{ }^{\circ}\text{C}$		0,18		mΩ
			0,22		mΩ
$R_{th(c-s)}$	per module			0,038	K/W
M_s	to heat sink M6	3		5	Nm
M_t	to terminals M6 (M4)	2,5 (1,1)		5 (2)	Nm
w				330	g

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

This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.



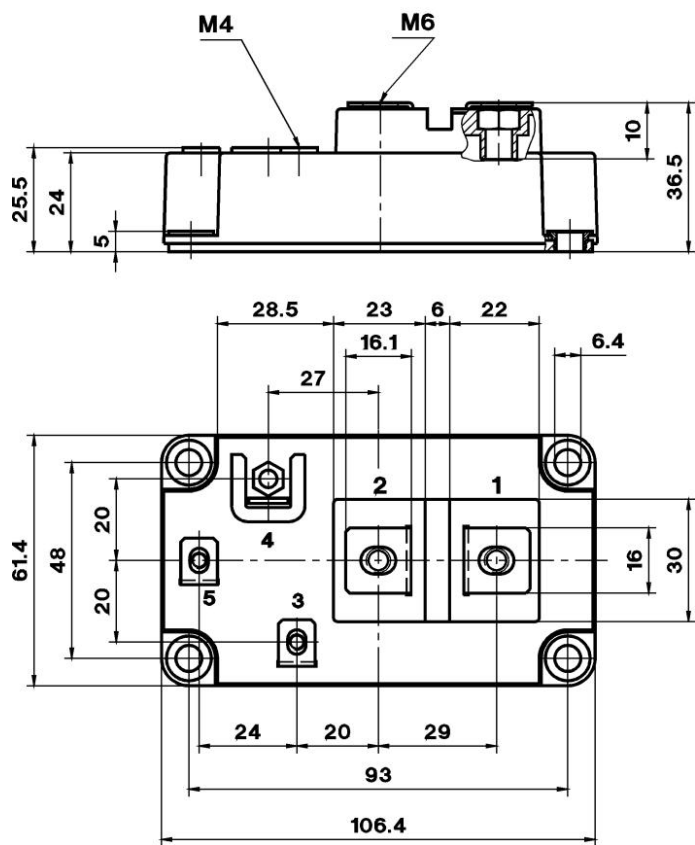


SKM 600GA126D

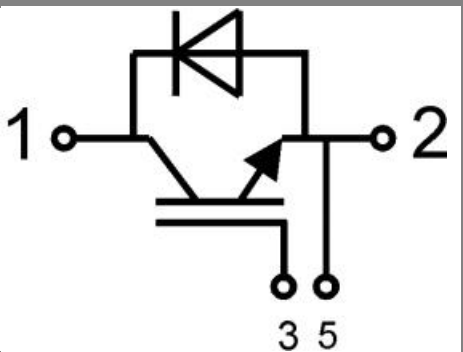
UL Recognized

CASED59

File no. 63532



Case D 59



GA

Case D59