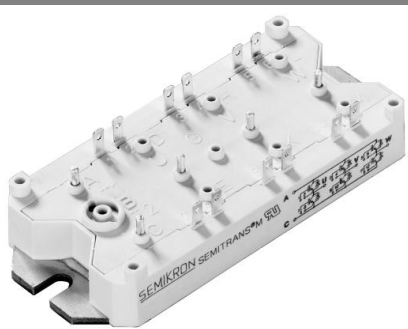




SEMITRANS® 6

Superfast NPT-IGBT Module

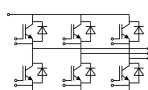
SKM 100GD063DL

Features

- Si structure (NPT IGBT)
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability, self limiting to $6 \times I_C$

Typical Applications

- Switched mode power supplies
- Three phase inverters for AC motor speed control
- For $f_{sw} > 10$ kHz



GD

Absolute Maximum Ratings		T _{case} = 25°C, unless otherwise specified		
Symbol	Conditions		Values	Units
IGBT				
V _{CES}	T _j = 25 °C		600	V
I _C	T _j = 150 °C	T _c = 25 °C	130	A
		T _c = 80 °C	95	A
I _{CRM}	I _{CRM} =2xI _{Cnom}		200	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 _c = 25 °C	100	A
		T _c = 80 °C	75	A
I _{FRM}	I _{FRM} =2xI _{Fnom}		200	A
I _{FSM}	t _p = 10 ms; sin. T _j = 150 °C		720	A
Module				
I _{t(RMS)}				A
T _{vj}			- 40 ... +150	°C
T _{stg}			- 40 ... +125	°C
V _{isol}	AC, 1 min.		2500	V

Characteristics		$T_{case} = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CES}$, $I_C = 3$ mA	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0$ V, $V_{CE} = V_{CES}$ $T_j = 25^\circ\text{C}$		0,15	0,45	mA
V_{CE0}			$T_j = 25^\circ\text{C}$	1,05	V
			$T_j = 125^\circ\text{C}$	1	V
r_{CE}	$V_{GE} = 15$ V		$T_j = 25^\circ\text{C}$	10,5	m Ω
			$T_j = 125^\circ\text{C}$	14	m Ω
$V_{CE(sat)}$	$I_{Cnom} = 100$ A, $V_{GE} = 15$ V		$T_j = 25^\circ\text{C}_{chiplev.}$	2,1	V
			$T_j = 125^\circ\text{C}_{chiplev.}$	2,4	V
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0$ V $f = 1$ MHz		5,6		nF
C_{oes}			0,6		nF
C_{res}			0,4		nF
Q_G	$V_{GE} = 0$ V...15V		240		nC
$t_{d(on)}$	$R_{Gon} = 10 \Omega$	$V_{CC} = 300$ V $I_C = 100$ A	50		ns
t_r			40		ns
E_{on}	$R_{Goff} = 10 \Omega$	$T_j = 125^\circ\text{C}$ $V_{GE} = \pm 15$ V	4		mJ
$t_{d(off)}$			300		ns
t_f			35		ns
E_{off}			3		mJ
$R_{th(j-c)}$	per IGBT			0,27	K/W



Superfast NPT-IGBT
Module

SKM 100GD063DL

Features

- Si structure (NPT IGBT)
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability, self limiting to $6 \times I_C$

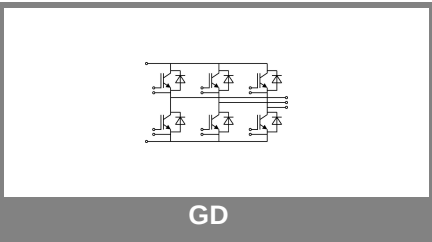
Typical Applications

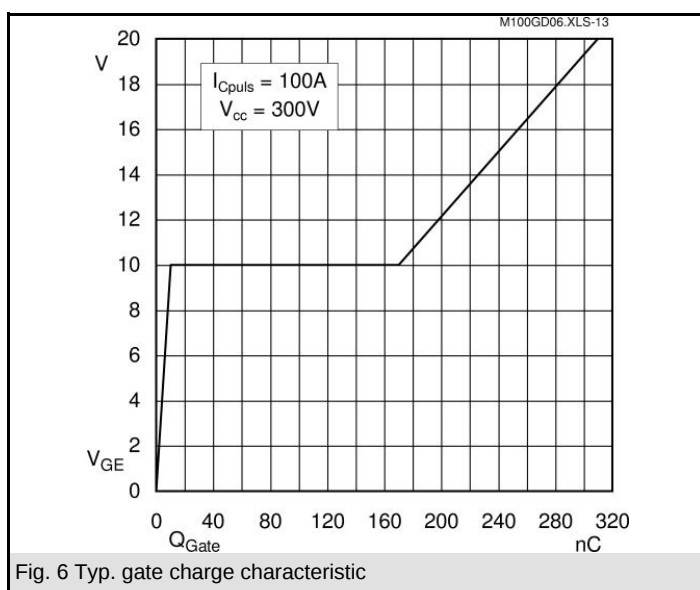
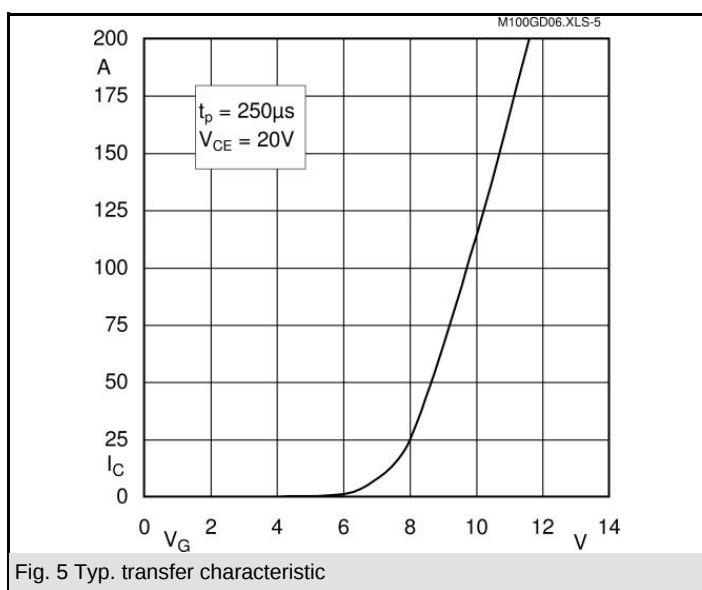
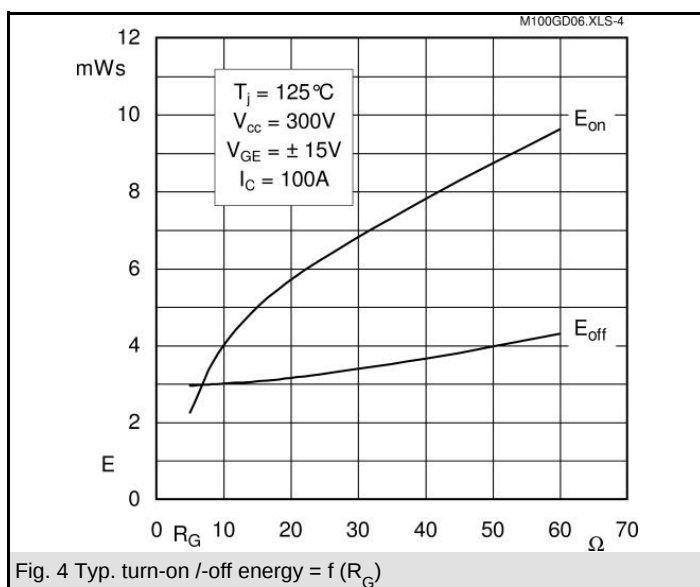
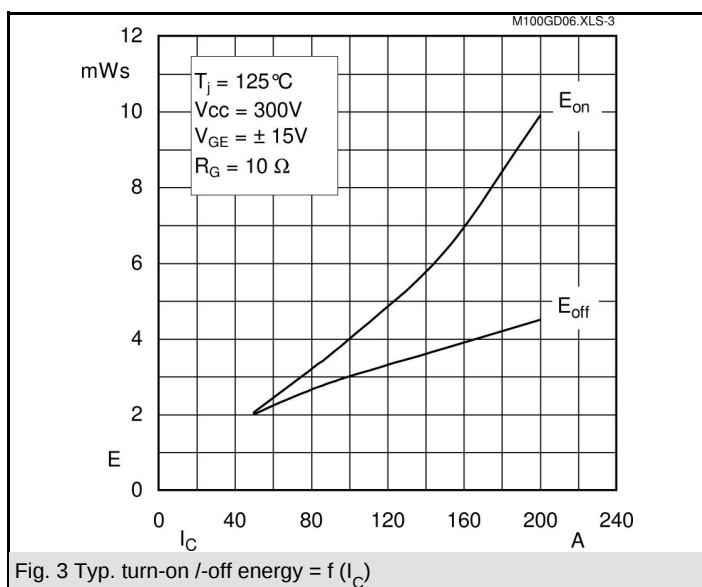
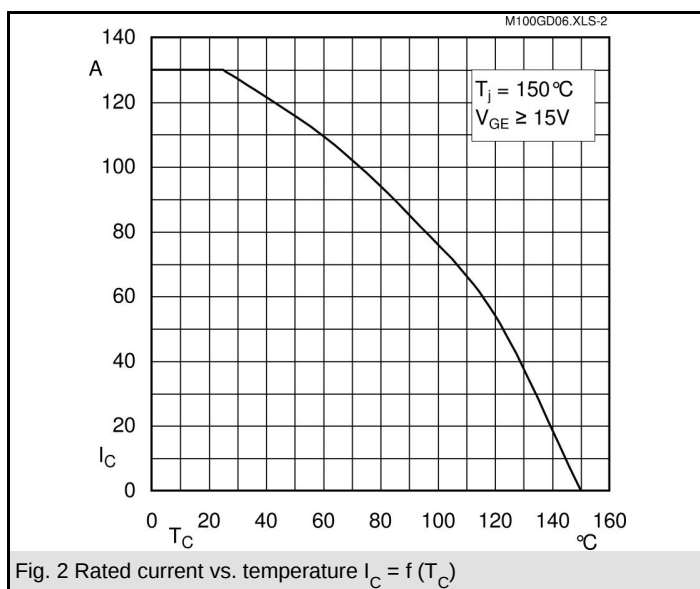
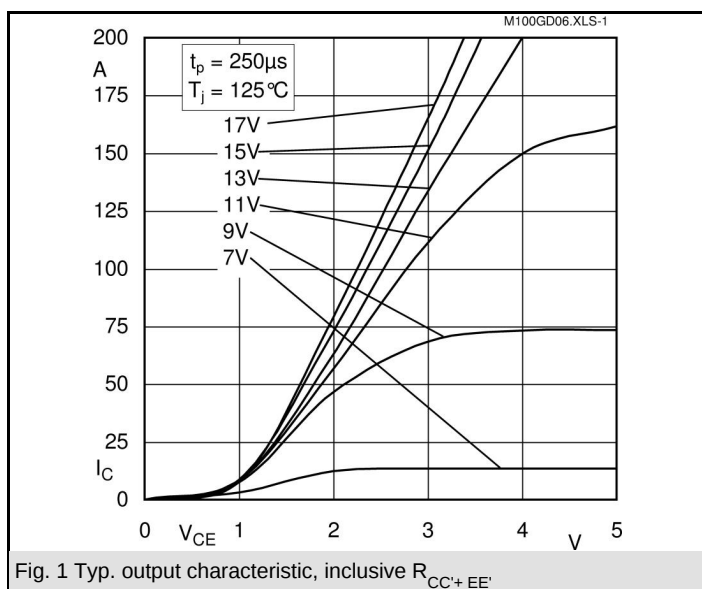
- Switched mode power supplies
- Three phase inverters for AC motor speed control
- For $f_{sw} > 10 \text{ kHz}$

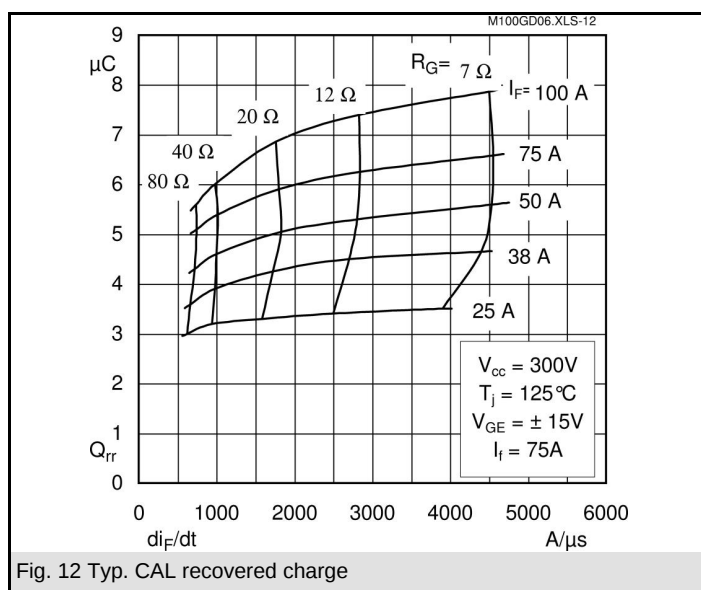
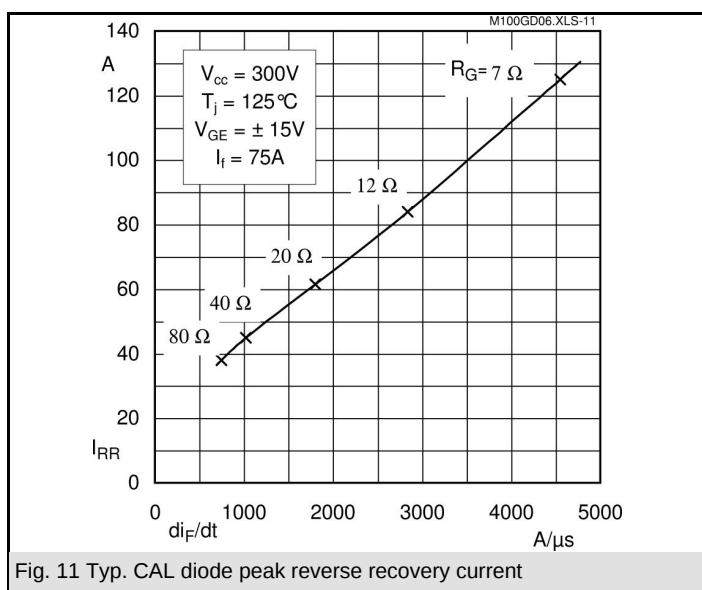
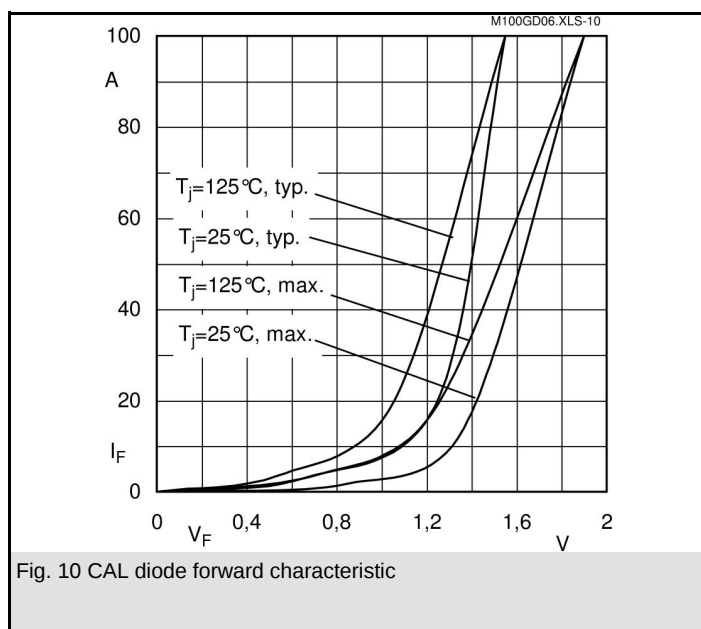
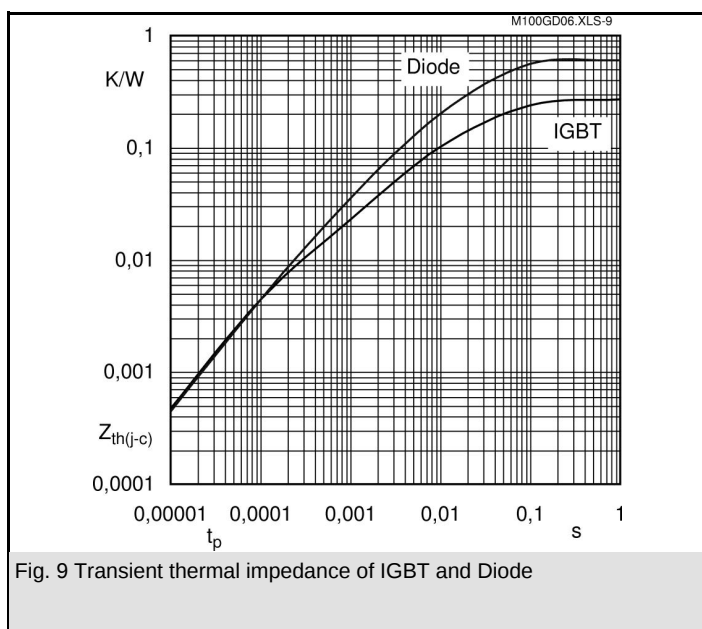
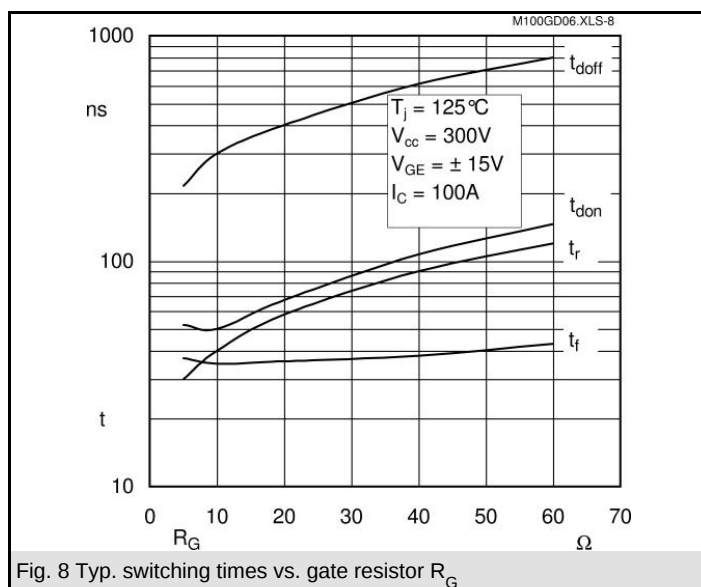
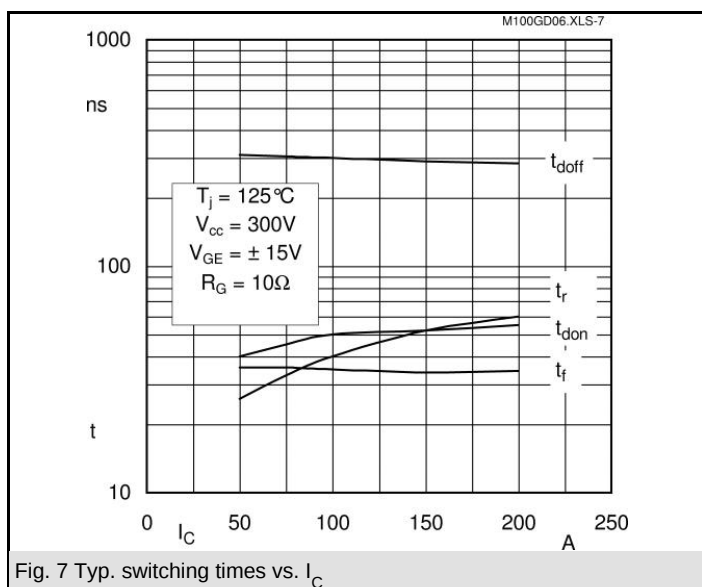
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 100 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,55	1,9	V
		T _j = 125 °C _{chiplev.}		1,55		V
V _{F0}		T _j = 25 °C			0,9	V
r _F		T _j = 25 °C			10	mΩ
I _{RRM}	I _F = 100 A	T _j = 125 °C		8		A
Q _{rr}	di/dt = 1000 A/μs			44		μC
E _{rr}	V _{GE} = -15 V; V _{CC} = 600 V			1,5		mJ
R _{th(j-c)D}	per diode				0,6	K/W
Module						
L _{CE}					60	nH
R _{th(c-s)}	per module				0,05	K/W
M _s	to heat sink M5		4		5	Nm
w					175	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.



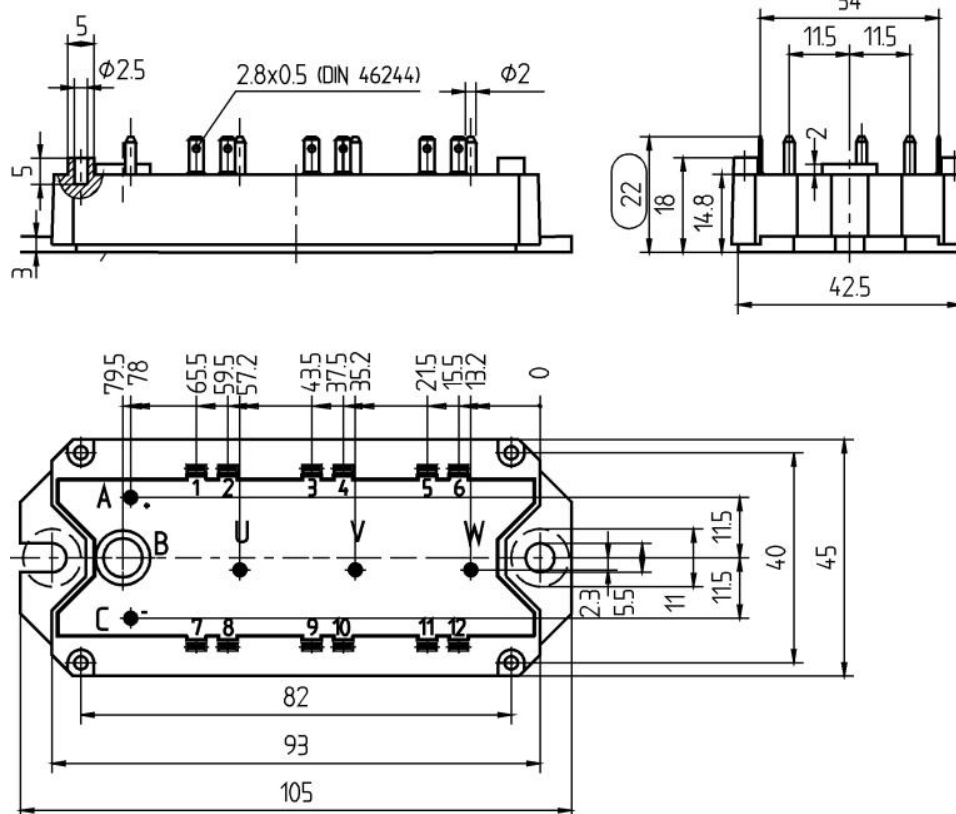




UL recognized file

no E 63 532

CASED68



Case D 68

