

SKM 100GD063DL



SEMITRANS™ 6

Superfast NPT-IGBT Module

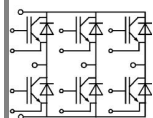
SKM 100GD063DL

Features

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

Typical Applications

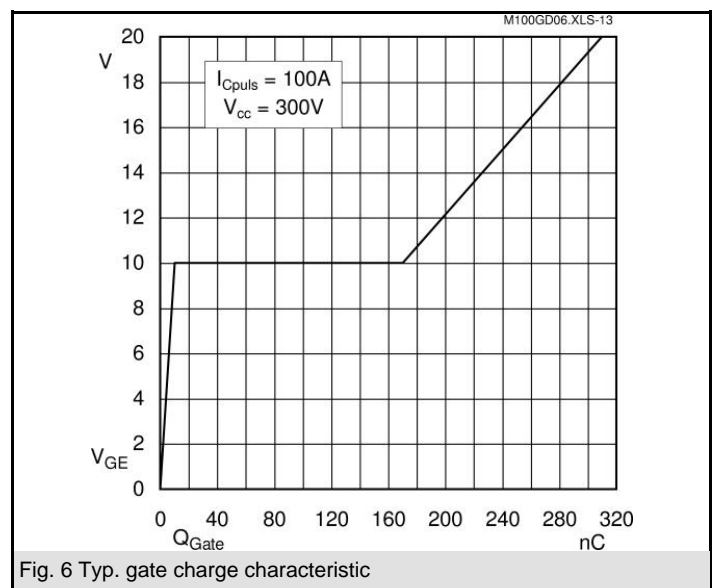
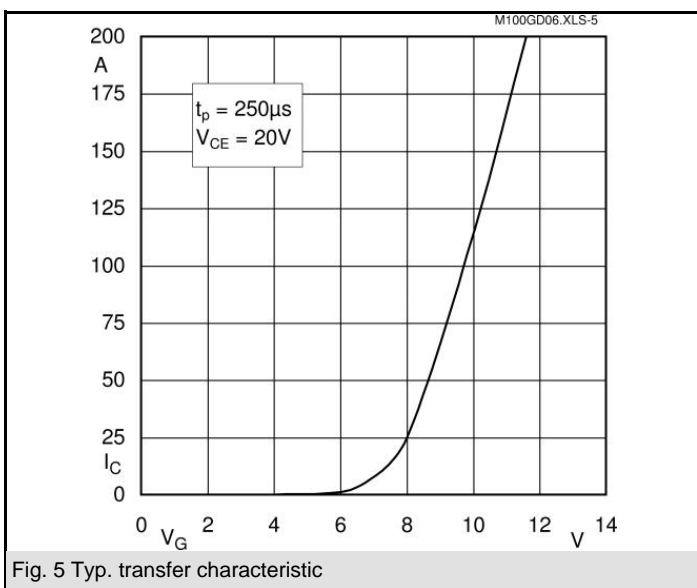
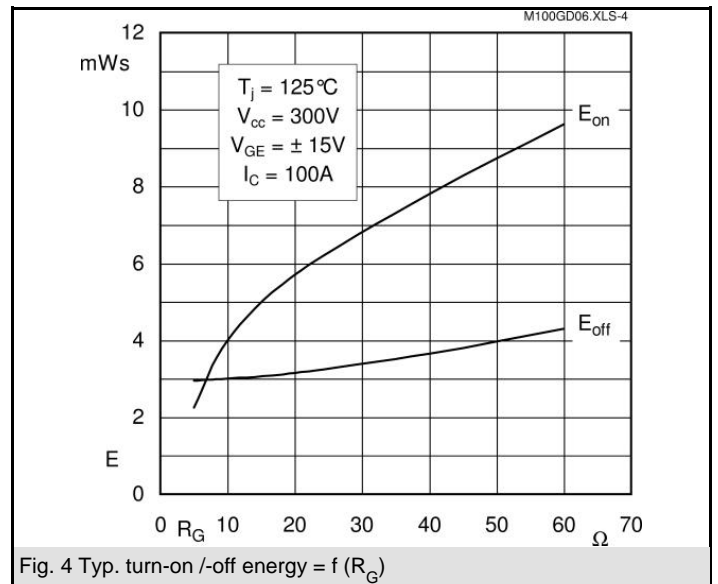
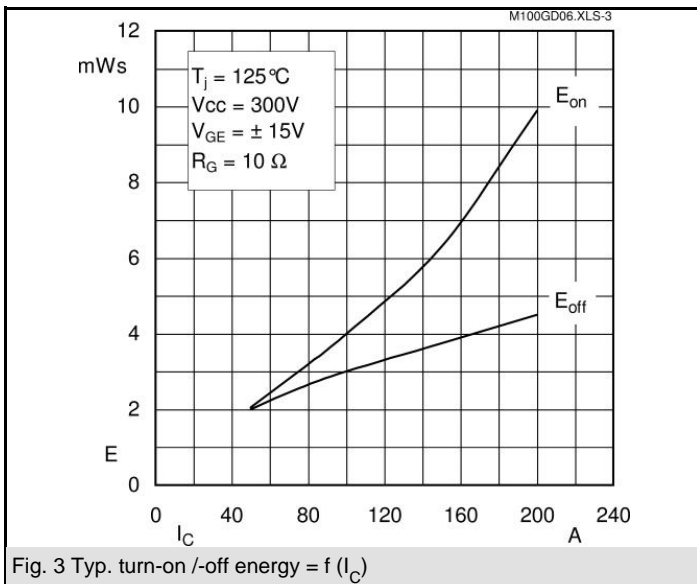
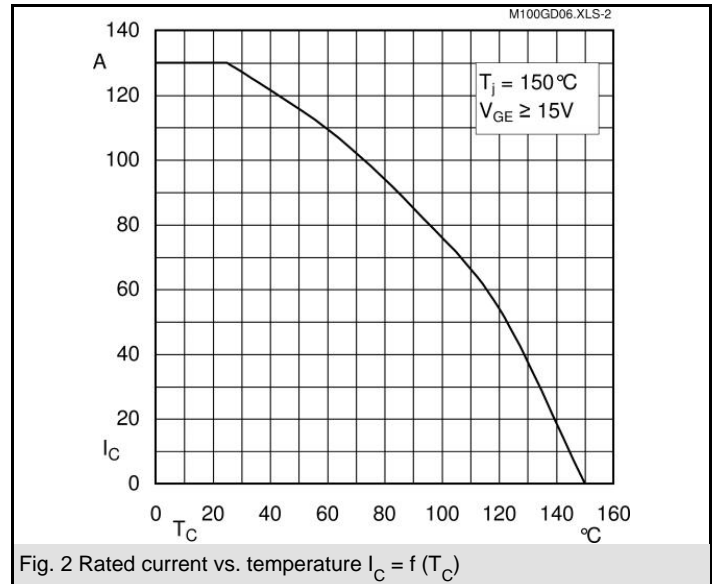
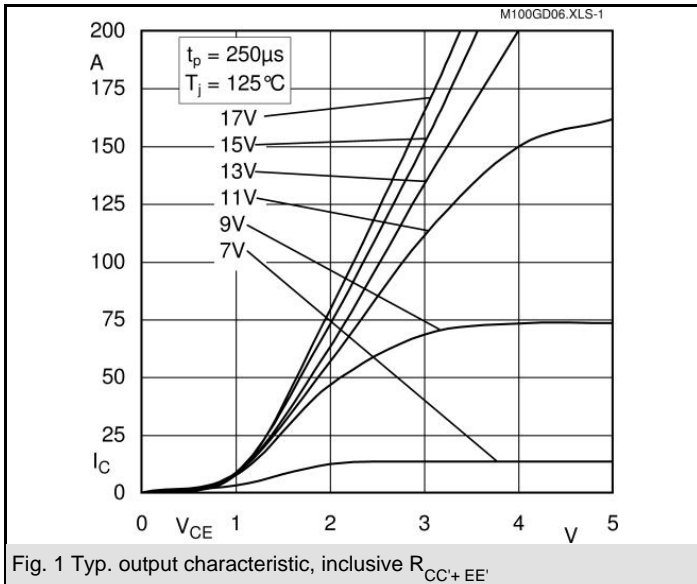
- Switched mode power supplies
- Three phase inverters for AC motor speed control
- For $f_{sw} > 10$ kHz

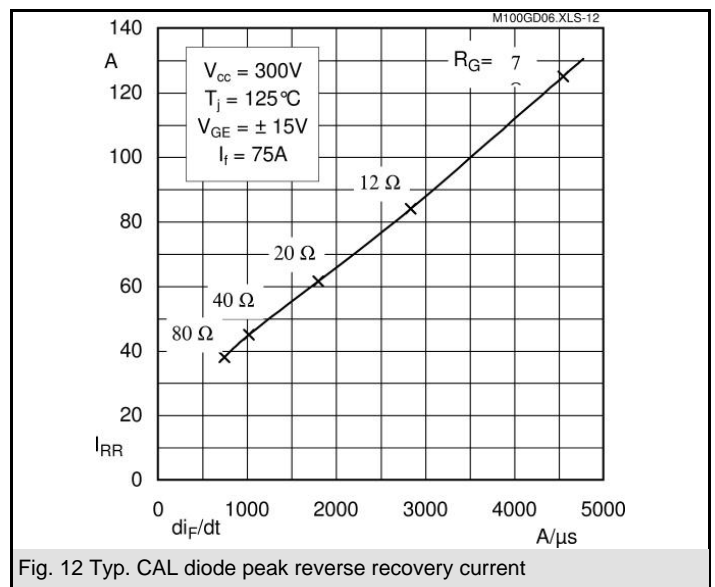
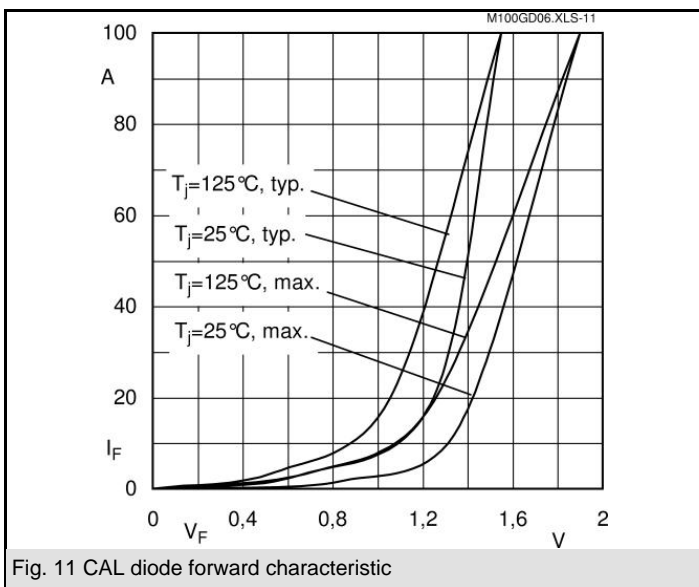
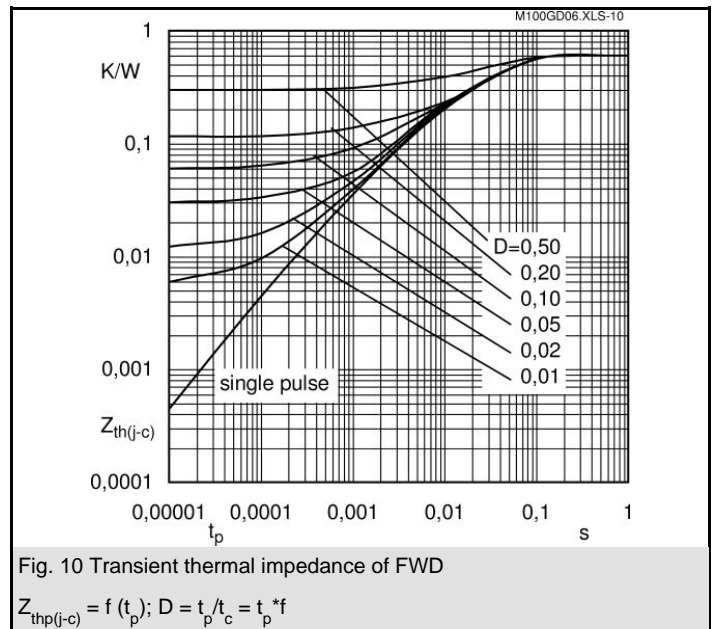
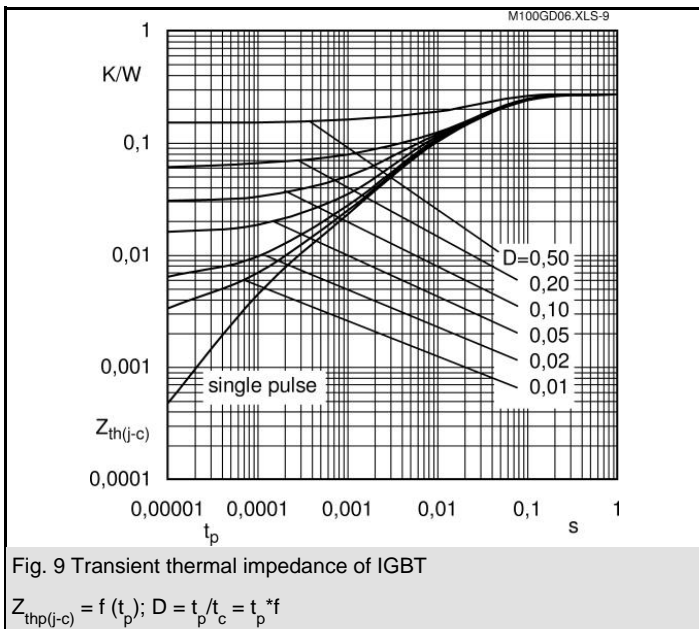
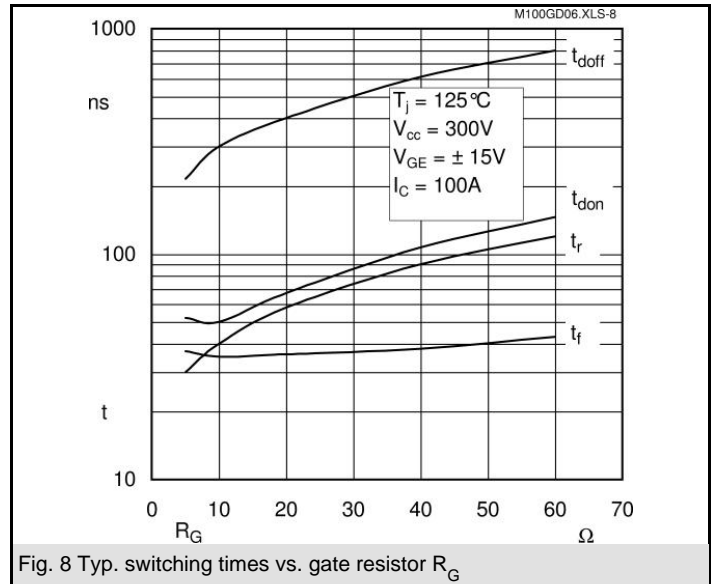
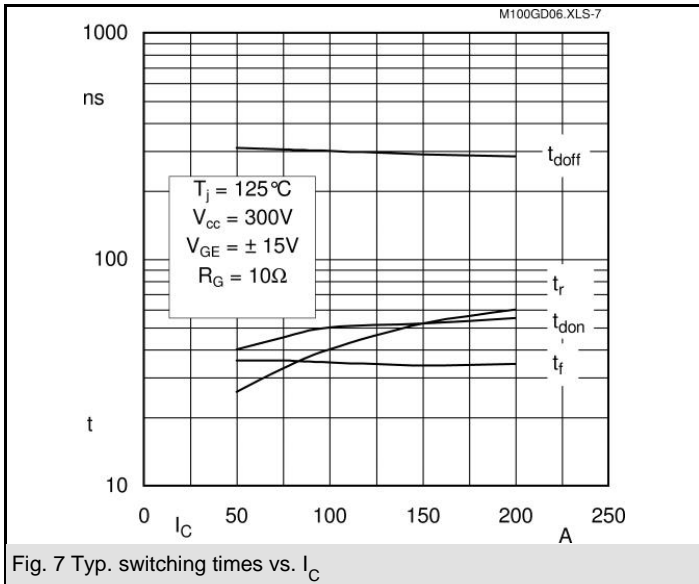


GD

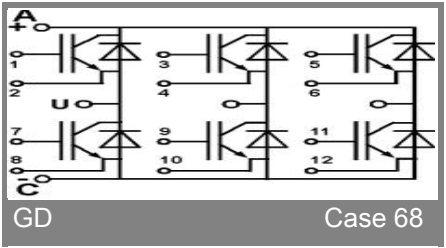
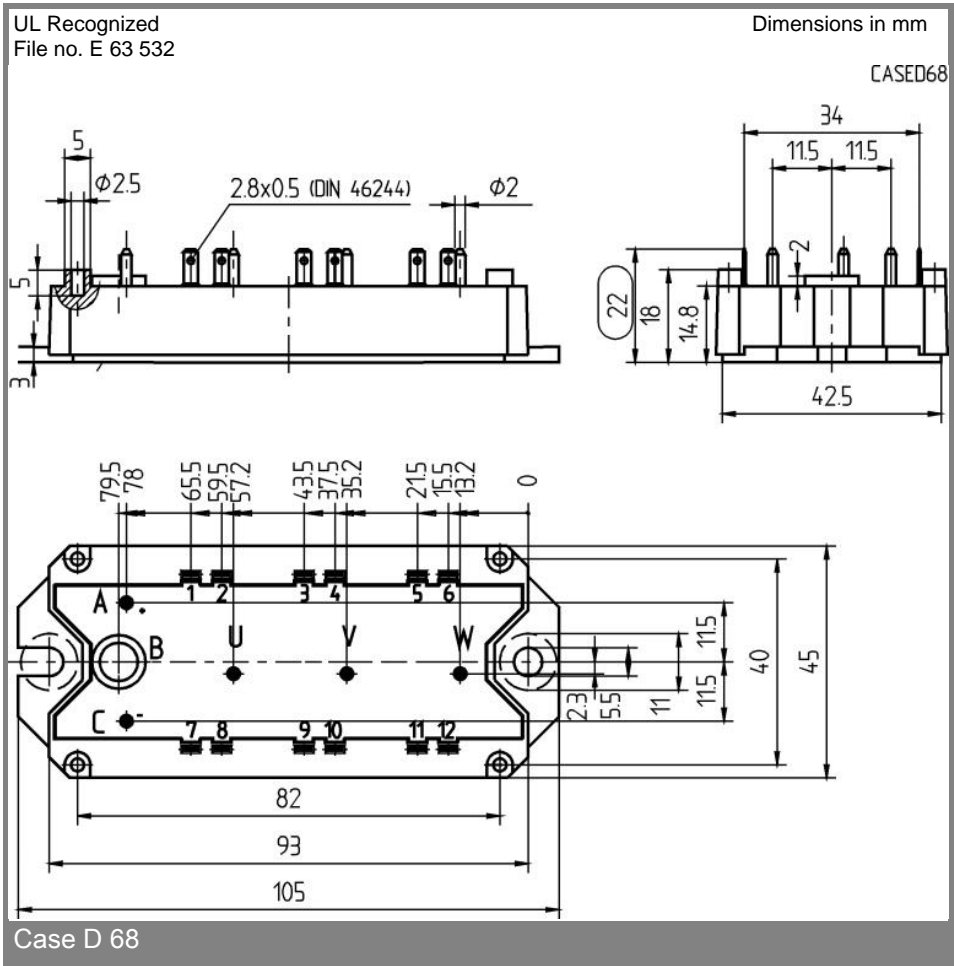
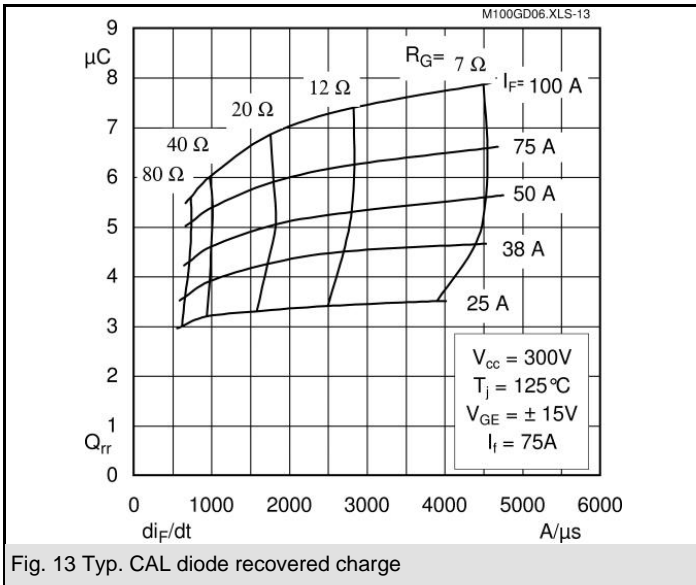
Absolute Maximum Ratings		$T_{case} = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
IGBT			
V_{CES}		600	V
I_C	$T_c = 25$ (80) $^\circ\text{C}$	130 (95)	A
I_{CRM}	$t_p = 1$ ms	200	A
V_{GES}		± 20	V
T_{vj} (T_{stg})	$T_{OPERATION} \leq T_{stg}$	- 40 ... +150 (125)	$^\circ\text{C}$
V_{isol}	AC, 1 min.	2500	V
Inverse diode			
I_F	$T_c = 25$ (80) $^\circ\text{C}$	100 (75)	A
I_{FRM}	$t_p = 1$ ms	200	A
I_{FSM}	$t_p = 10$ ms; sin.; $T_j = 150$ $^\circ\text{C}$	720	A

Characteristics		$T_{case} = 25^\circ\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 3$ mA	4,5	5,5	6,5	V
I_{CES}	$V_{GE} = 0$, $V_{CE} = V_{CES}$, $T_j = 25$ (125) $^\circ\text{C}$		0,15	0,45	mA
$V_{CE(TO)}$	$T_j = 25$ (125) $^\circ\text{C}$		1,05 (1)		V
r_{CE}	$V_{GE} = 15$ V, $T_j = 25$ (125) $^\circ\text{C}$		10,5 (14)		m Ω
$V_{CE(sat)}$	$I_{Cnom} = 100$ A, $V_{GE} = 15$ V, chip level		2,1 (2,4)	2,5 (2,8)	V
C_{ies}	under following conditions		5,6		nF
C_{oes}	$V_{GE} = 0$, $V_{CE} = 25$ V, $f = 1$ MHz		0,6		nF
C_{res}			0,4		nF
L_{CE}				60	nH
$R_{CC'+EE'}$	res., terminal-chip $T_c = 25$ (125) $^\circ\text{C}$				m Ω
$t_{d(on)}$	$V_{CC} = 300$ V, $I_{Cnom} = 100$ A		50		ns
t_r	$R_{Gon} = R_{Goff} = 10$ Ω , $T_j = 125$ $^\circ\text{C}$		40		ns
$t_{d(off)}$	$V_{GE} \pm 15$ V		300		ns
t_f			35		ns
$E_{on} (E_{off})$			4 (3)		mJ
Inverse diode					
$V_F = V_{EC}$	$I_{Fnom} = 100$ A; $V_{GE} = 0$ V; $T_j = 25$ (125)		1,55 (1,55)	1,9	V
$V_{(TO)}$	$T_j = 25$ (125) $^\circ\text{C}$			0,9	V
r_T	$T_j = 25$ (125) $^\circ\text{C}$			10	m Ω
I_{RRM}	$I_{Fnom} = 100$ A; $T_j = 125$ () $^\circ\text{C}$		8		A
Q_{rr}	$di/dt = 1000$ A/ μs		44		μC
E_{rr}	$V_{GE} = 0$ V		1,5		mJ
Thermal characteristics					
$R_{th(j-c)}$	per IGBT			0,27	K/W
$R_{th(j-c)D}$	per Inverse Diode			0,6	K/W
$R_{th(c-s)}$	per module			0,05	K/W
Mechanical data					
M_s	to heatsink M5	4		5	Nm
M_t	to terminals				Nm
w				175	g





SKM 100GD063DL



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.