

SKM 100GD063DL



SEMITRANS® 6

Superfast NPT-IGBT Module

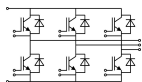
SKM 100GD063DL

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		$T_{case} = 25^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	Values	Units	
IGBT				
V_{CES}	$T_j = 25^\circ\text{C}$	600	V	
I_C	$T_j = 150^\circ\text{C}$	$T_c = 25^\circ\text{C}$	130	A
		$T_c = 80^\circ\text{C}$	95	A
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	200	A	
V_{GES}		± 20	V	
t_{psc}	$V_{CC} = 300\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 125^\circ\text{C}$ $V_{CES} < 600\text{ V}$	10	μs	
Inverse Diode				
I_F	$T_j = 150^\circ\text{C}$	$T_c = 25^\circ\text{C}$	100	A
		$T_c = 80^\circ\text{C}$	75	A
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	200	A	
I_{FSM}	$t_p = 10\text{ ms}; \sin.$	$T_j = 150^\circ\text{C}$	720	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		$T_{case} = 25^\circ\text{C}$, unless otherwise specified				
Symbol	Conditions	min.	typ.	max.	Units	
IGBT						
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = 3\text{ mA}$	4,5	5,5	6,5	V	
I_{CES}	$V_{GE} = 0\text{ V}, V_{CE} = V_{CES}$		$T_j = 25^\circ\text{C}$ 0,15	$T_j = 125^\circ\text{C}$ 0,45	mA	
V_{CE0}			$T_j = 25^\circ\text{C}$	1,05	V	
			$T_j = 125^\circ\text{C}$	1	V	
r_{CE}	$V_{GE} = 15\text{ V}$		$T_j = 25^\circ\text{C}$	10,5	$\text{m}\Omega$	
			$T_j = 125^\circ\text{C}$	14	$\text{m}\Omega$	
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}, V_{GE} = 15\text{ V}$		$T_j = 25^\circ\text{C}_{chiplev.}$	2,1	2,5	V
			$T_j = 125^\circ\text{C}_{chiplev.}$	2,4	2,8	V
C_{ies}	$V_{CE} = 25, V_{GE} = 0\text{ V}$	$f = 1\text{ MHz}$		5,6	nF	
C_{oes}			0,6	nF		
C_{res}			0,4	nF		
Q_G	$V_{GE} = 0\text{V} \dots 15\text{V}$		240		nC	
$t_{d(on)}$	$R_{Gon} = 10\ \Omega$	$V_{CC} = 300\text{V}$ $I_{Cnom} = 100\text{A}$		50	ns	
t_r			40	ns		
E_{on}	$R_{Goff} = 10\ \Omega$	$T_j = 125^\circ\text{C}$ $V_{GE} = \pm 15\text{V}$		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	



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 $6 \times I_C$

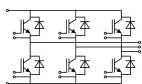
Typical Applications

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

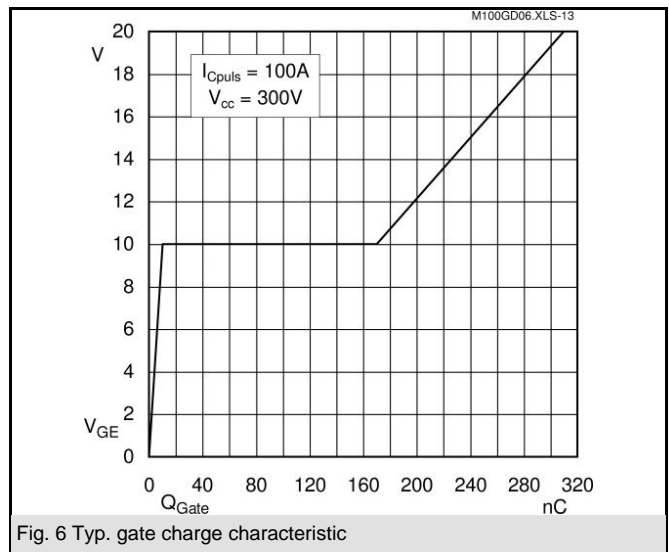
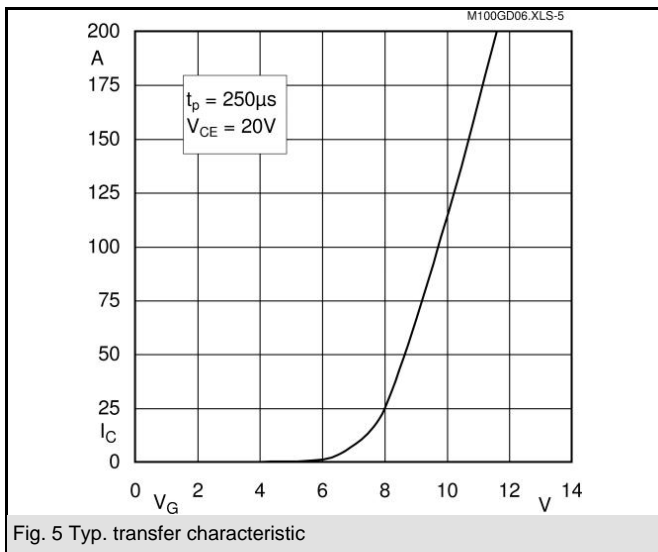
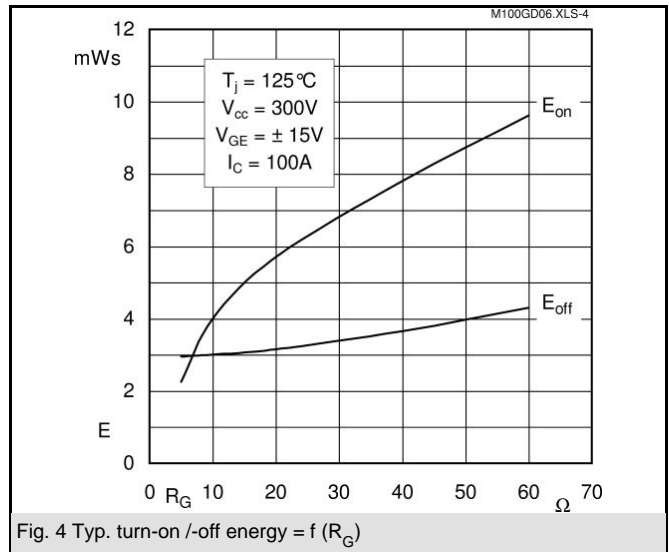
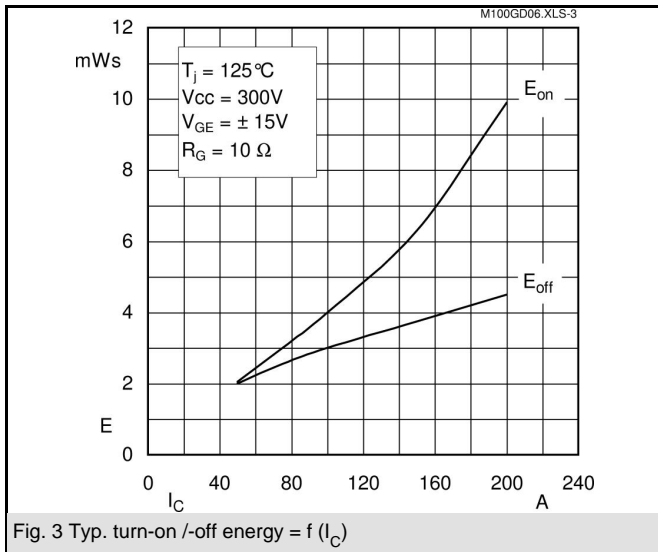
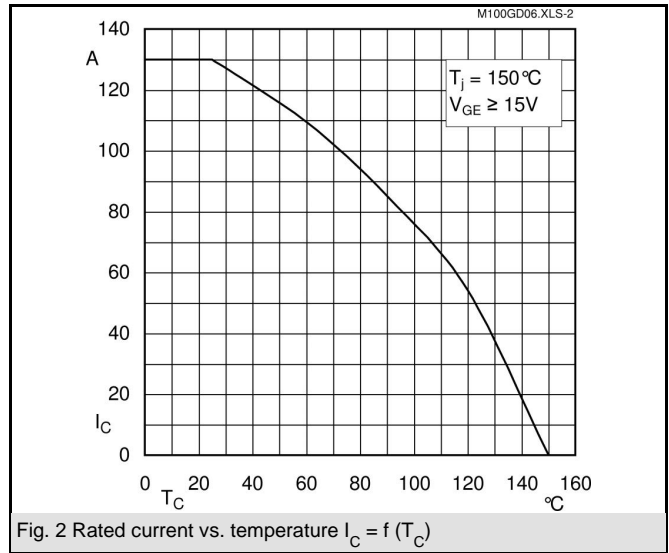
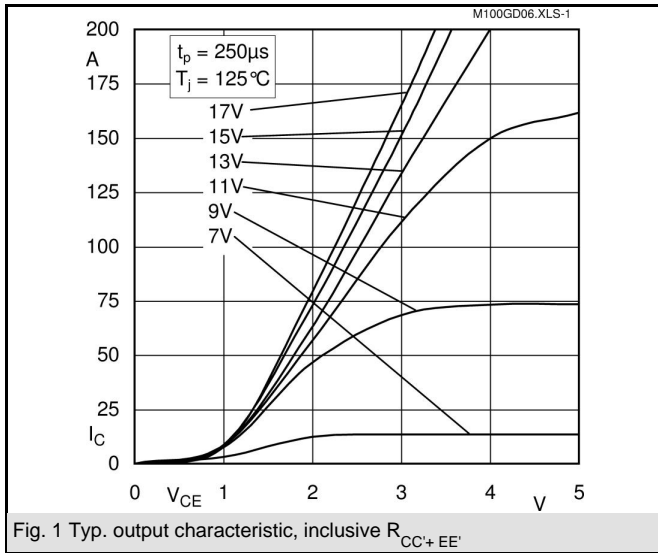
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 100$ A; $V_{GE} = 0$ V	$T_j = 25$ °C _{chiplev.}	1,55	1,9	V
		$T_j = 125$ °C _{chiplev.}	1,55		V
V_{F0}				0,9	V
r_F				10	mΩ
I_{RRM}	$I_{Fnom} = 100$ A		8		A
Q_{rr}	$di/dt = 1000$ A/μs		44		μC
E_{rr}	$V_{GE} = -15$ 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

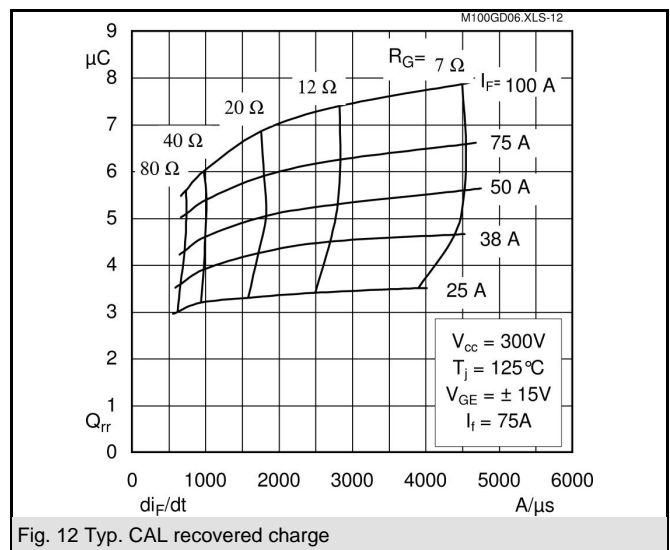
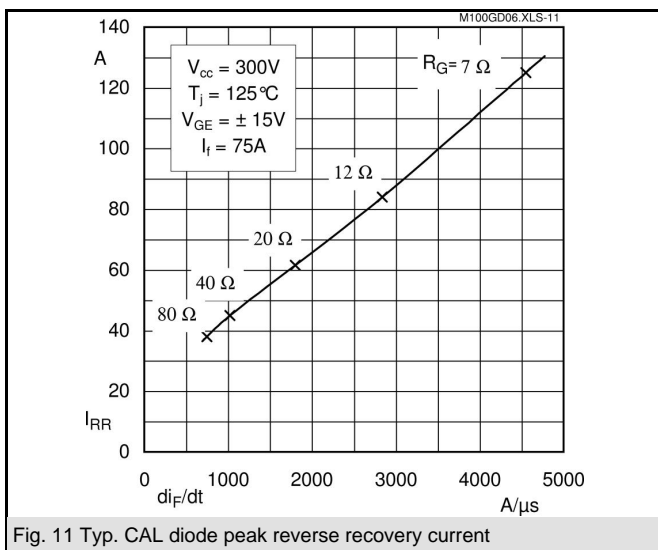
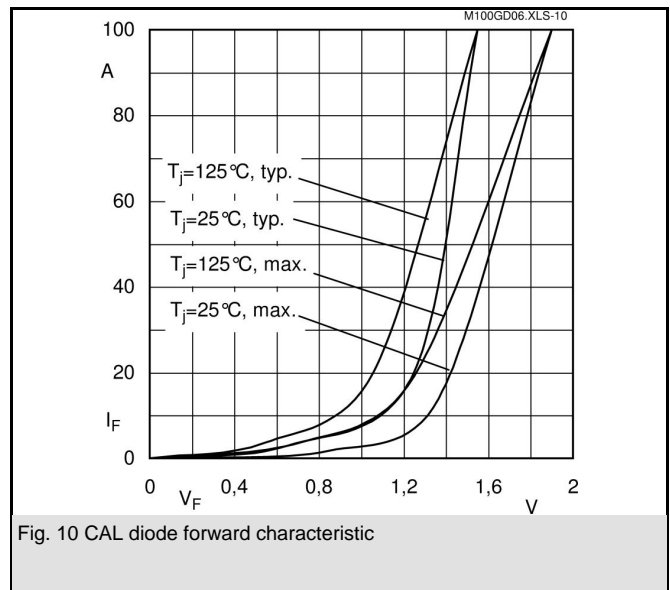
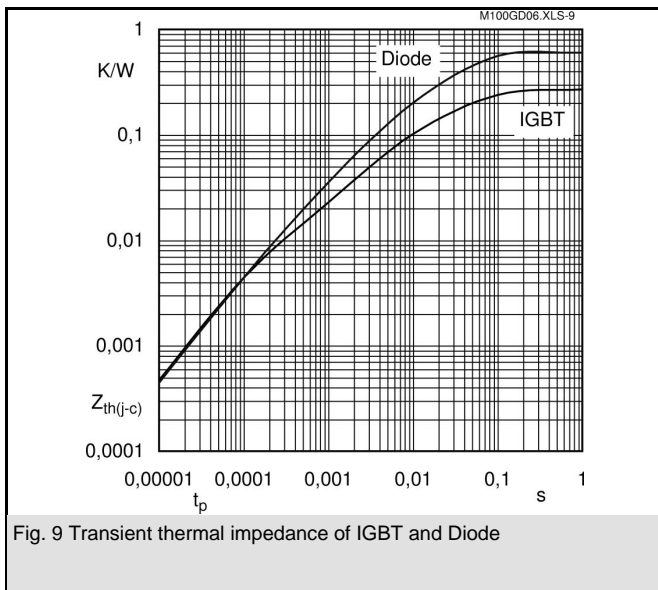
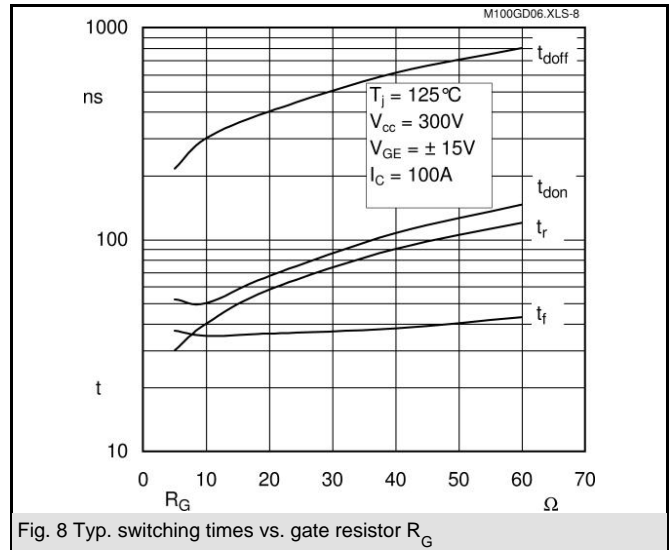
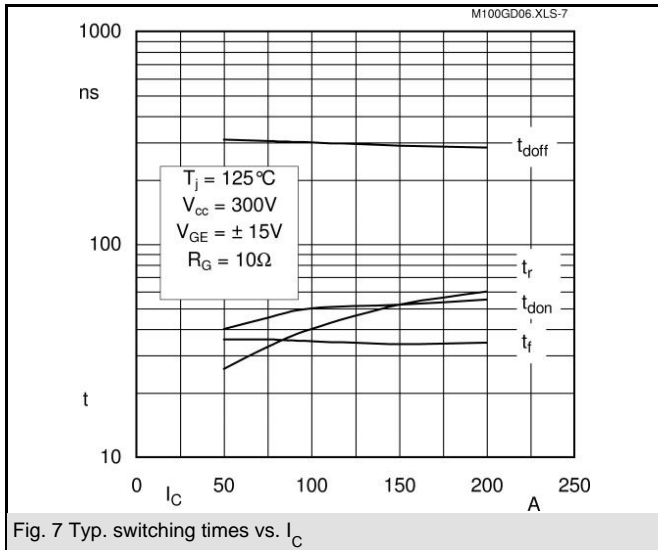
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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



GD



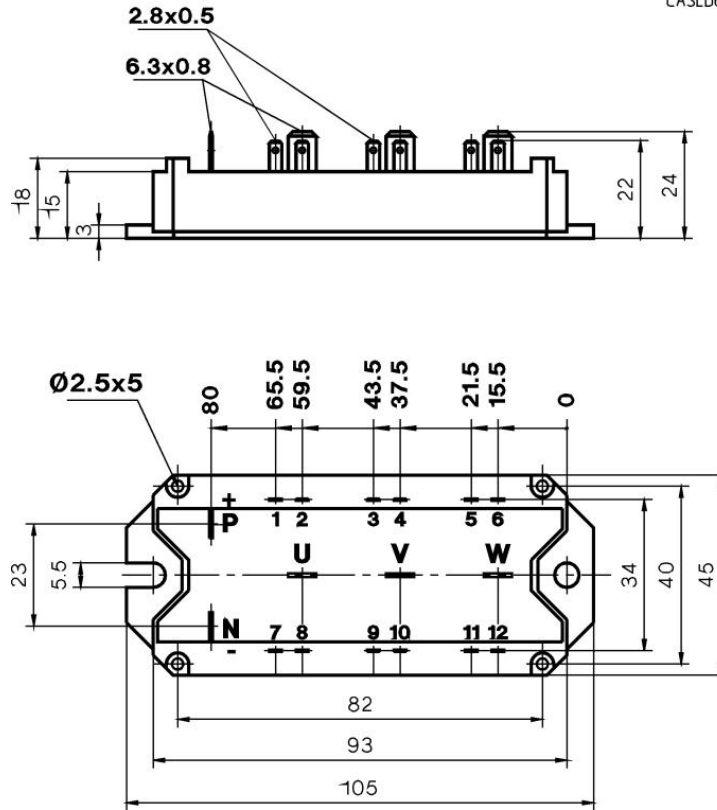


SKM 100GD063DL

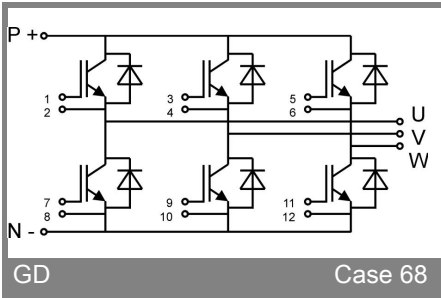
UL recognized file

CASED67

no E 63 532



Case D 68



GD

Case 68