

SKM 100GB128D



SEMITRANS® 2

SPT IGBT Module

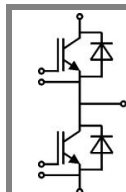
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Features

- SPT = Soft-Punch-Through technology
- V_{CEsat} with positive temperature coefficient
- High short circuit capability, self limiting to $6 \times I_C$

Typical Applications

- AC inverter drives
- UPS
- Electronic welders at f_{sw} up to 20 kHz



GB

Absolute Maximum Ratings		T _c = 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	145	A
		T _c = 80 °C	105	A
I _{CRM}	I _{CRM} =2xI _{Cnom} , t _p = 1 ms	150		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 _{case} = 25 °C	95	A
		T _{case} = 80 °C	65	A
I _{FRM}	I _{FRM} = 2xI _{Fnom} , t _p = 1 ms	150		A
I _{FSM}	t _p = 10 ms; sin. T _j = 150 °C	720		A
Module				
I _{t(RMS)}		200		A
T _{vj}		- 40... + 150		°C
T _{stg}	T _{OPERATION} ≤T _{stg}	- 40... + 125		°C
V _{isol}	AC, 1 min.	4000		V

Characteristics			T _c = 25 °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	6,45	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _j = 25 °C		0,1	0,3	mA
V _{CE0}		T _j = 25 °C		1	1,15	V
		T _j = 125 °C		0,9	1,05	V
r _{CE}	V _{GE} = 15 V	T _j = 25°C		13	16	mΩ
		T _j = 125°C		16	20	mΩ
V _{CE(sat)}	I _{Cnom} = 75 A, V _{GE} = 15 V	T _j = 25°C _{chiplev.}		1,9	2,35	V
		T _j = 125°C _{chiplev.}		2,1	2,55	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz		6,2		nF
C _{oes}				0,74		nF
C _{res}				0,71		nF
Q _G	V _{GE} = -8V - +20V			860		nC
R _{Gint}	T _j = 25 °C			5		Ω
t _{d(on)}	R _{Gon} = 4,7 Ω	V _{CC} = 600V I _{Cnom} = 75A T _j = 125 °C V _{GE} = ±15V		175		ns
t _r				38		ns
E _{on}				9		mJ
t _{d(off)}	R _{Goff} = 4,7 Ω			370		ns
t _f				65		ns
E _{off}				7,5		mJ
R _{th(j-c)}	per IGBT				0,21	K/W

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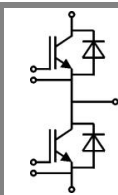
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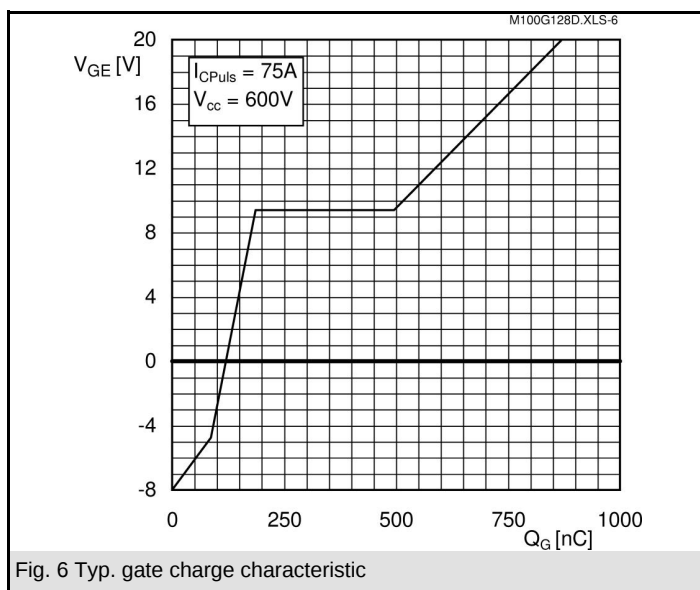
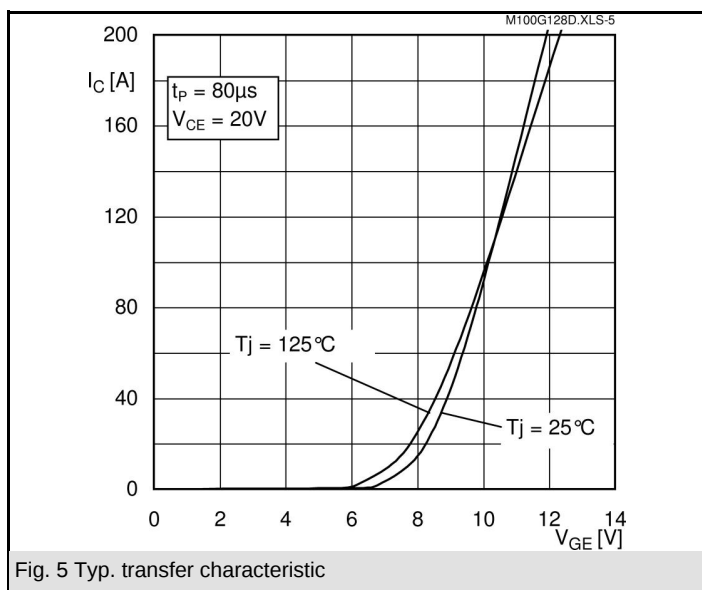
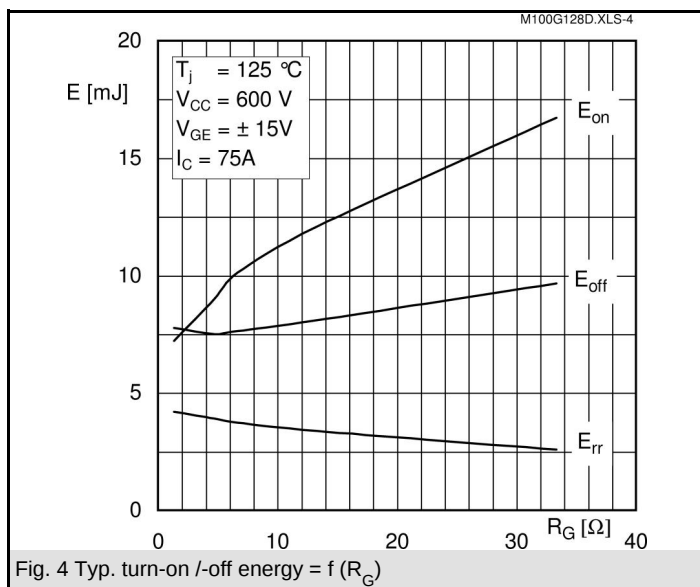
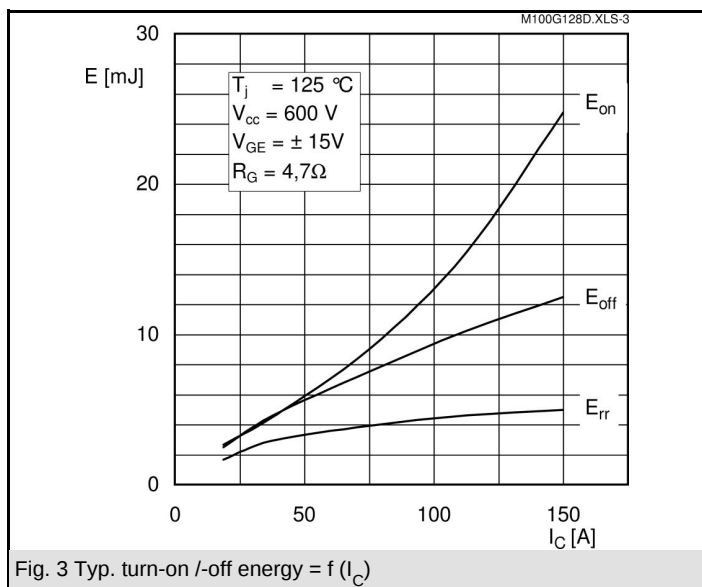
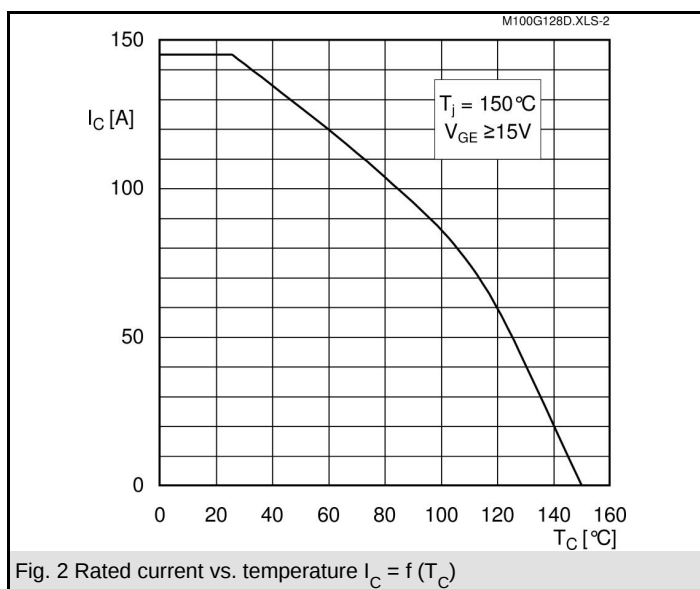
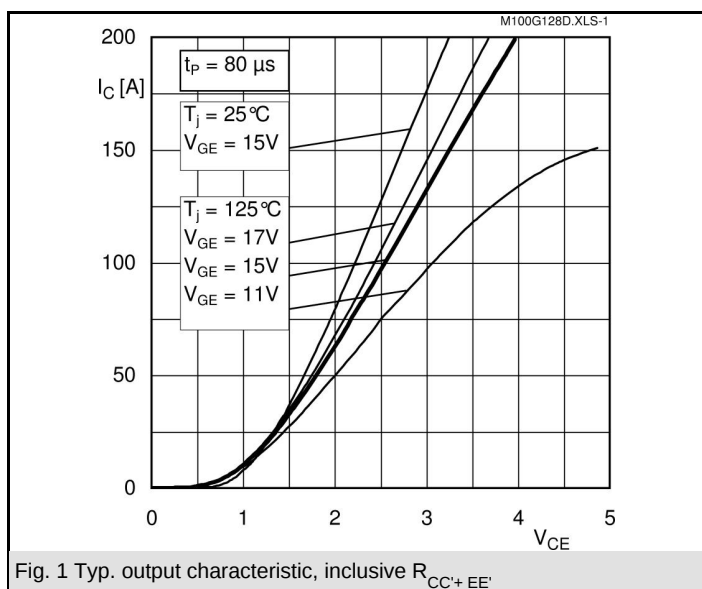
Typical Applications

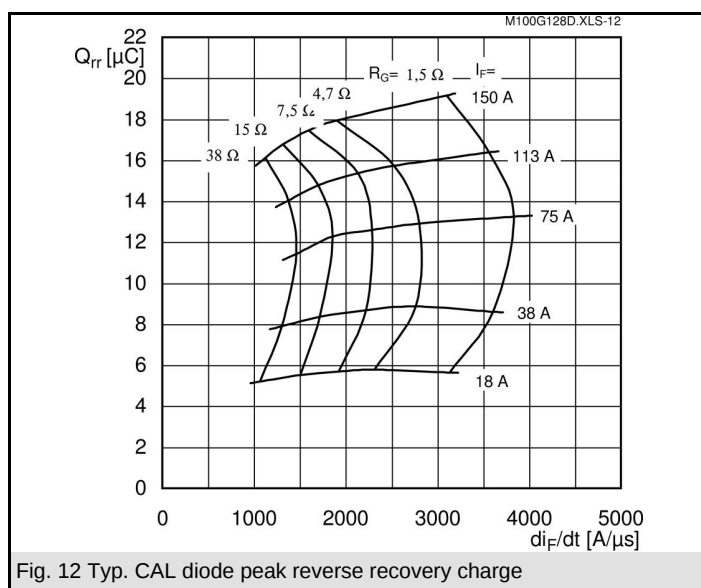
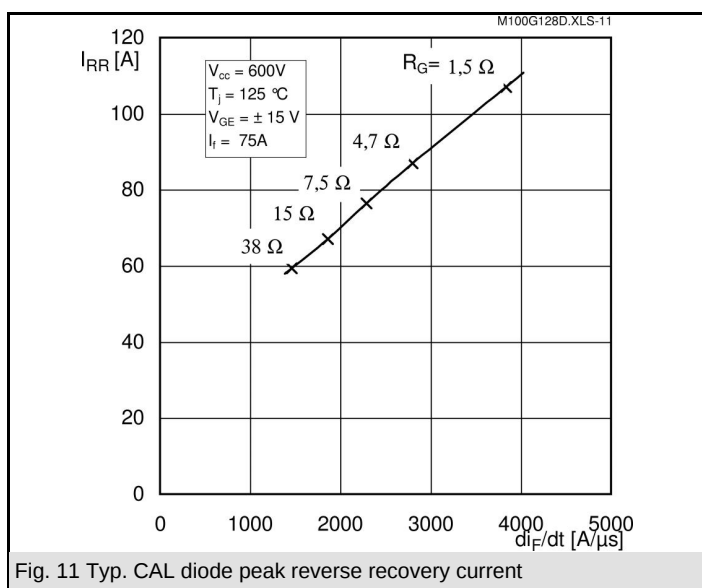
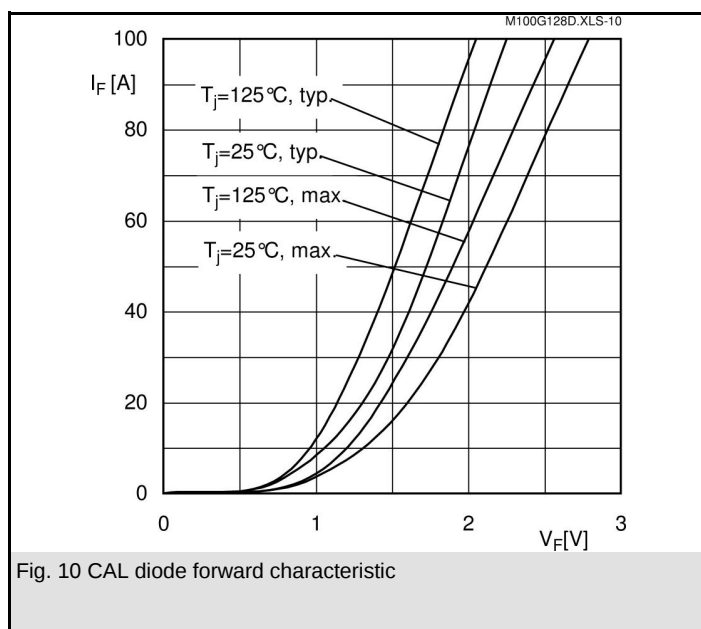
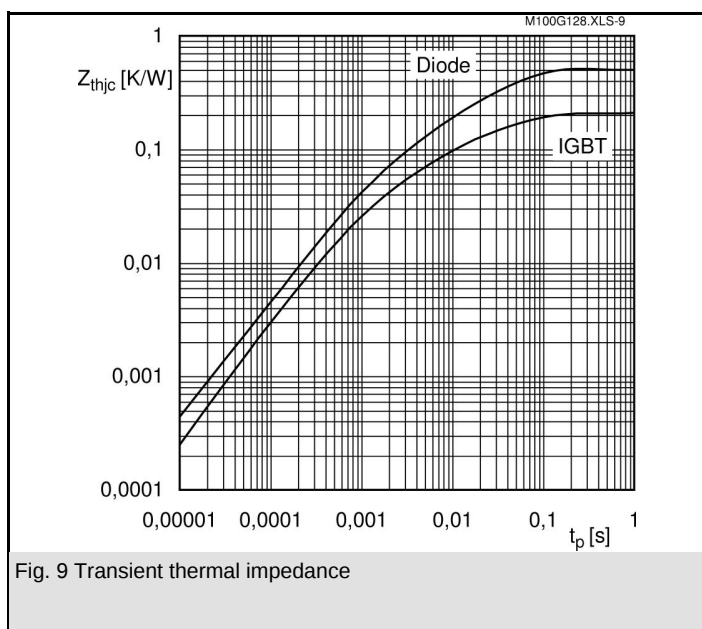
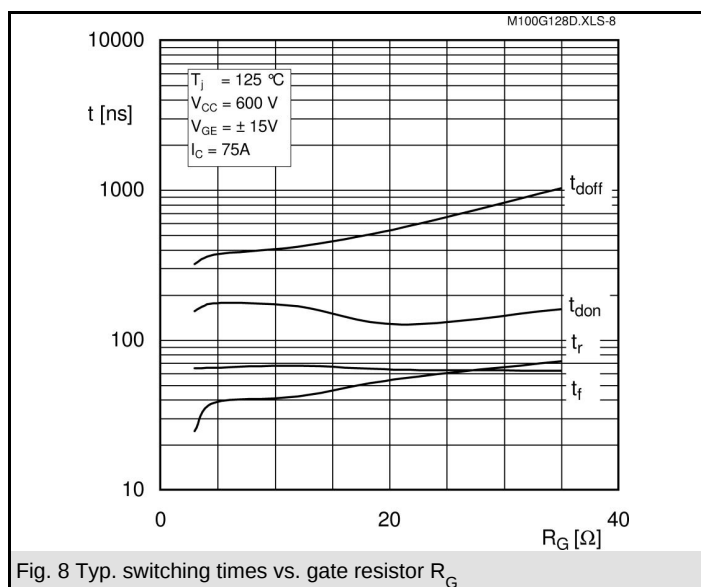
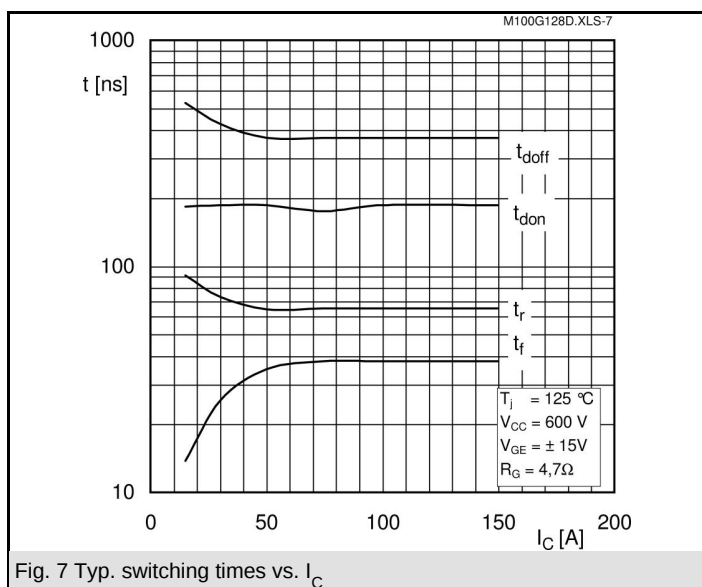
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Z_{th}			
Symbol	Conditions	Values	Units
$Z_{th(j-c)I}$			
R_i	$i = 1$	114	mk/W
R_i	$i = 2$	71	mk/W
R_i	$i = 3$	22	mk/W
R_i	$i = 4$	3	mk/W
τ_{ui}	$i = 1$	0,054	s
τ_{ui}	$i = 2$	0,0115	s
τ_{ui}	$i = 3$	0,0012	s
τ_{ui}	$i = 4$	0,001	s
$Z_{th(j-c)D}$			
R_i	$i = 1$	300	mk/W
R_i	$i = 2$	160	mk/W
R_i	$i = 3$	35,5	mk/W
R_i	$i = 4$	4,5	mk/W
τ_{ui}	$i = 1$	0,054	s
τ_{ui}	$i = 2$	0,0071	s
τ_{ui}	$i = 3$	0,0017	s
τ_{ui}	$i = 4$	0,005	s



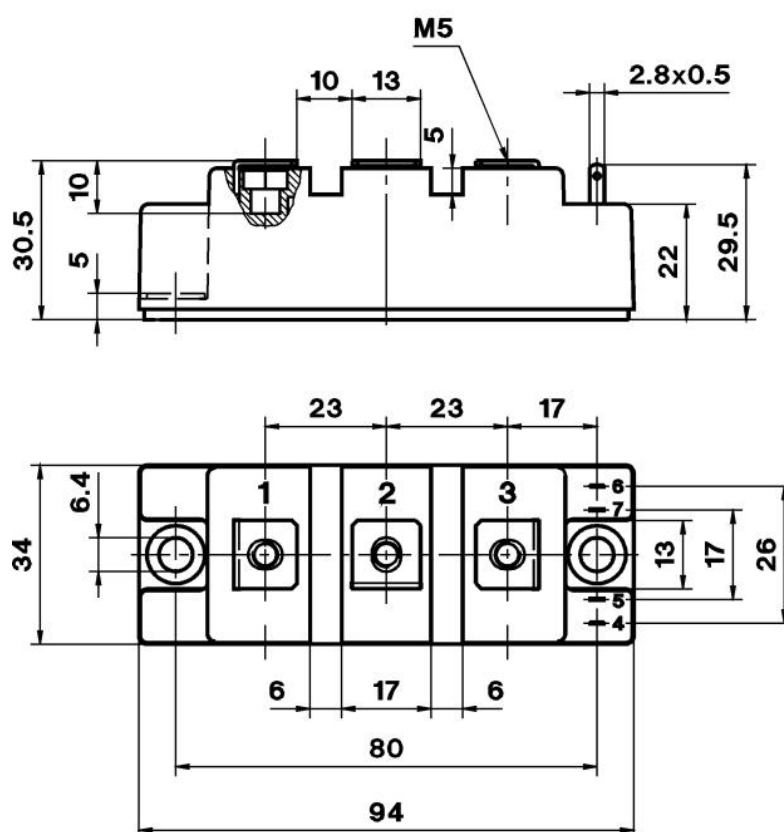


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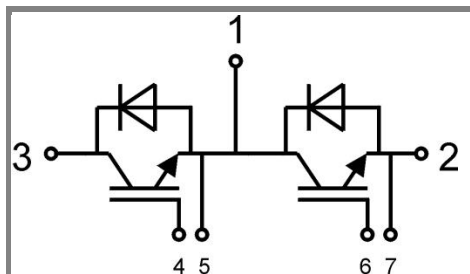
UL Recognized
File no. E 63 532

Dimensions in mm

CASED61



Case D 61



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Case D 61