

SEMiX 603GB066HD

查询"SEMIX603GB066HD" 07%供应商



SEMiX® 3

Trench IGBT Modules

SEMiX 603GB066HD

Preliminary Data

Features

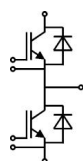
- Homogeneous Si
- Trench = Trenchgate technology
- $V_{CE(sat)}$ with positive temperature coefficient

Typical Applications

- Matrix Converter
- Resonant Inverter
- Current Source Inverter

Remarks

- Case temperatur limited to $T_C=125^{\circ}\text{C}$ max.
- Product reliability results are valid for $T_J=150^{\circ}\text{C}$
- use of soft RG necessary, take care of over-voltage caused by stray inductance
- not for new design



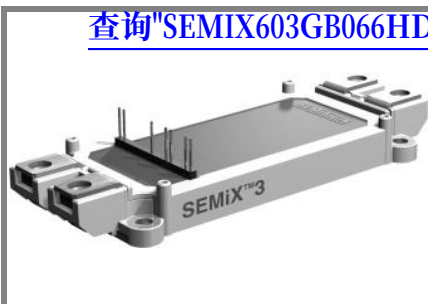
GB

0744 0100

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 = 175 °C	T _c = 25 °C	720	A
		T _c = 80 °C	540	A
I _{CRM}	I _{CRM} =2xI _{Cnom}	1200		A
V _{GES}		± 20		V
t _{psc}	V _{CC} = 360 V; V _{GE} ≤ 15 V; T _j = 150 °C V _{CES} < 600 V	6		µs
Inverse Diode				
I _F	T _j = 175 °C	T _c = 25 °C	760	A
		T _c = 80 °C	555	A
I _{FRM}	I _{FRM} =2xI _{Fnom}	1200		A
I _{FSM}	t _p = 10 ms; sin. T _j = 25 °C	1800		A
Module				
I _{t(RMS)}		600		A
T _{vj}		- 40 ... + 175		°C
T _{stg}		- 40 ... + 125		°C
V _{isol}	AC, 1 min.	4000		V

Characteristics		T _{case} = 25°C, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 9,6 mA		5,8		V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES} T _J = 25 °C			0,45	mA
V _{CE0}	T _J = 25 °C		0,9	1	V
		T _J = 150 °C	0,85	0,9	V
r _{CE}	V _{GE} = 15 V	T _J = 25°C	0,9	1,5	mΩ
		T _J = 150°C	1,4	2	mΩ
V _{CE(sat)}	I _{Cnom} = 600 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.}	1,45	1,9	V
		T _J = 150°C _{chiplev.}	1,7	2,1	V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V f = 1 MHz		37		nF
C _{oes}			2,3		nF
C _{res}			1,1		nF
Q _G	V _{GE} = -8 ... +15V		4800		nC
t _{d(on)}	R _{Gon} = 3 Ω	V _{CC} = 300V I _{Cnom} = 600A T _J = 150 °C	150		ns
t _r			145		ns
E _{on}	12		mJ		
t _{d(off)}	R _{Goff} = 3 Ω		1050		ns
t _f			105		ns
E _{off}		43		mJ	
R _{th(j-c)}	per IGBT		0,087		K/W

查询"SEMiX603GB066HD" 07"供应商



SEMiX® 3

Trench IGBT Modules

SEMiX 603GB066HD

Preliminary Data

Features

- Homogeneous Si
- Trench = Trenchgate technology
- $V_{CE(sat)}$ with positive temperature coefficient

Typical Applications

- Matrix Converter
- Resonant Inverter
- Current Source Inverter

Remarks

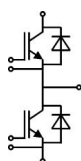
- Case temperatur limited to $T_C=125^\circ\text{C}$ max.
- Product reliability results are valid for $T_j=150^\circ\text{C}$
- use of soft RG necessary, take care of over-voltage caused by stray inductance
- not for new design

0 供货应用

Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
$V_F = V_{EC}$	$I_{Fnom} = 600\text{ A}; V_{GE} = 0\text{ V}$	$T_j = 25\text{ }^{\circ}\text{C}_{chiplev.}$		1,4	1,6	V
		$T_j = 150\text{ }^{\circ}\text{C}_{chiplev.}$		1,4	1,6	V
V_{F0}		$T_j = 25\text{ }^{\circ}\text{C}$		1	1,1	V
		$T_j = 150\text{ }^{\circ}\text{C}$		0,85	0,95	V
r_F		$T_j = 25\text{ }^{\circ}\text{C}$		0,65	0,85	mΩ
		$T_j = 150\text{ }^{\circ}\text{C}$		0,9	1,1	mΩ
I_{RRM}	$I_{Fnom} = 600\text{ A}$	$T_j = 150\text{ }^{\circ}\text{C}$		350		A
Q_{rr}	$di/dt = 3800\text{ A}/\mu\text{s}$			63		μC
E_{rr}	$V_{GE} = -8\text{ V}; V_{CC} = 300\text{ V}$			13		mJ
$R_{th(j-c)D}$	per diode				0,11	K/W
Module						
L_{CE}				20		nH
$R_{CC'+EE'}$	res., terminal-chip	$T_{case} = 25\text{ }^{\circ}\text{C}$		0,7		mΩ
		$T_{case} = 125\text{ }^{\circ}\text{C}$		1		mΩ
$R_{th(c-s)}$	per module			0,04		K/W
M_s	to heat sink (M5)		3		5	Nm
M_t	to terminals (M6)		2,5		5	Nm
w					300	g
Temperature sensor						
R_{100}	$T_c = 100^{\circ}\text{C}$ ($R_{25} = 5\text{ k}\Omega$)			0,493±5%		kΩ
$B_{100/125}$	$R(T) = R_{100} \exp[B_{100/125}(1/T - 1/T_{100})]$; $T[\text{K}]; B$			3550±2%		K

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.



GB

查询"SEMiX603GB066HD_07"供应商

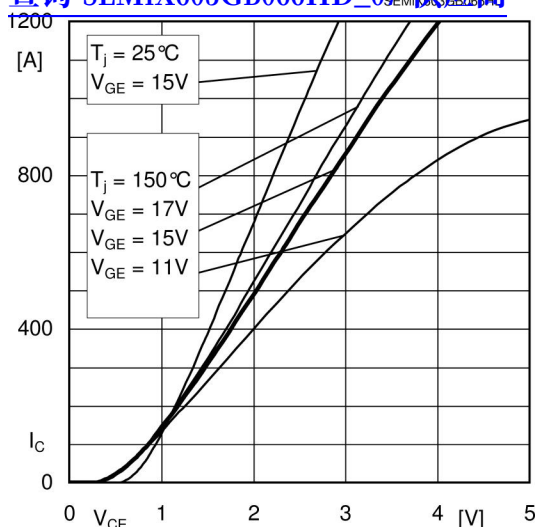


Fig. 1 Typ. output characteristic, inclusive $R_{CC'+EE'}$

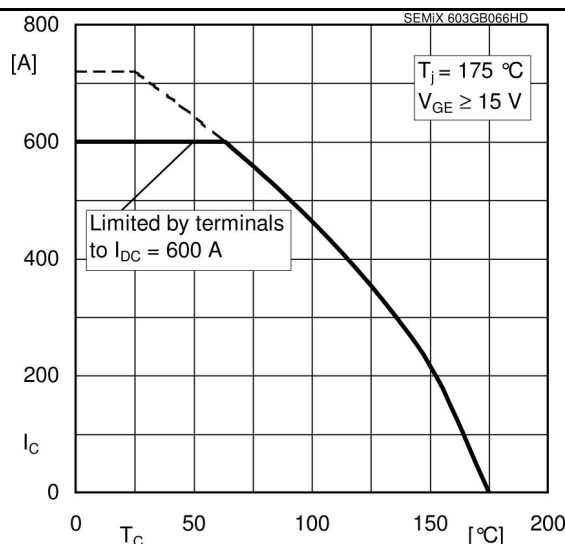


Fig. 2 Rated current vs. temperature $I_C = f(T_C)$

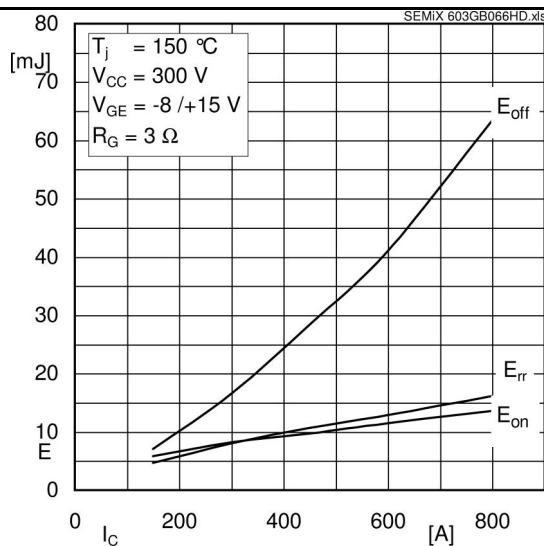


Fig. 3 Typ. turn-on /off energy = $f(I_C)$

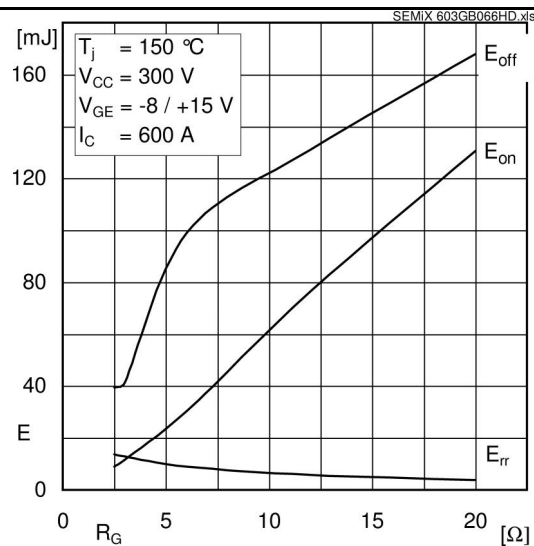


Fig. 4 Typ. turn-on /off energy = $f(R_G)$

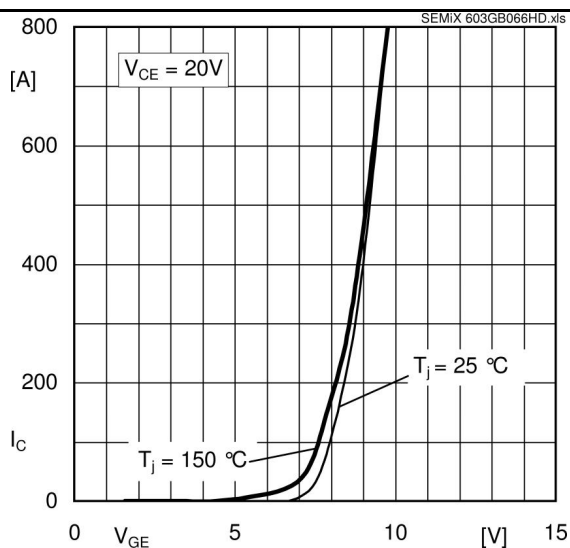


Fig. 5 Typ. transfer characteristic

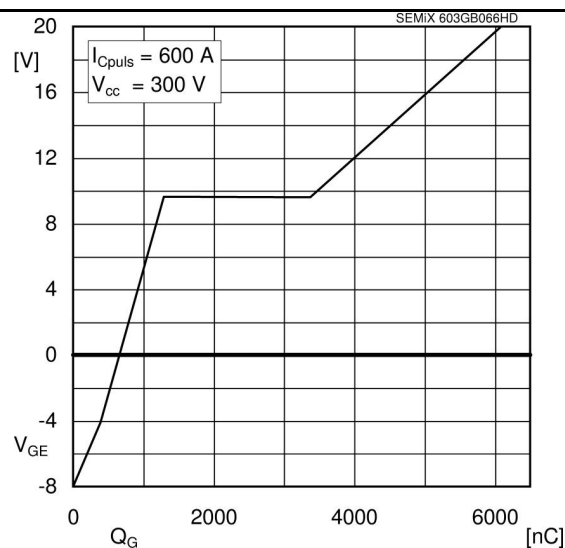


Fig. 6 Typ. gate charge characteristic

查询"SEMiX603GB066HD-07"供应商

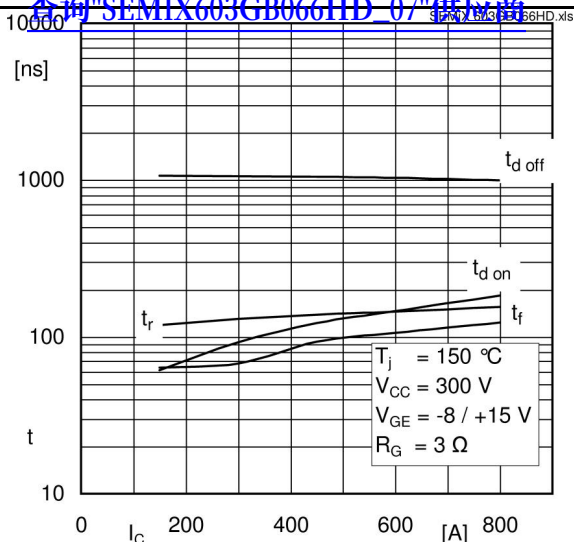


Fig. 7 Typ. switching times vs. I_C

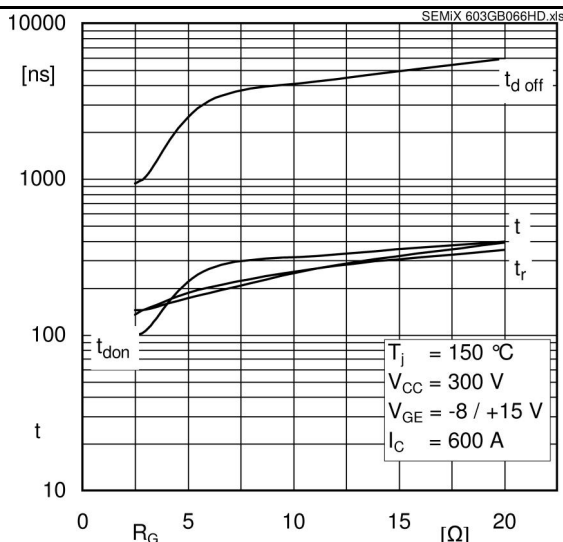


Fig. 8 Typ. switching times vs. gate resistor R_G

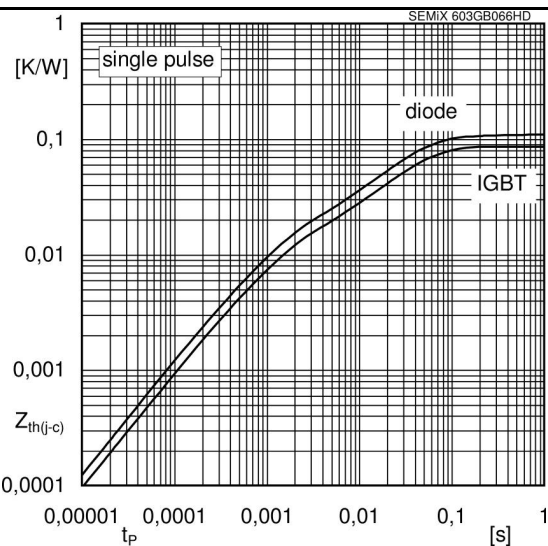


Fig. 9 Typ. transient thermal impedance

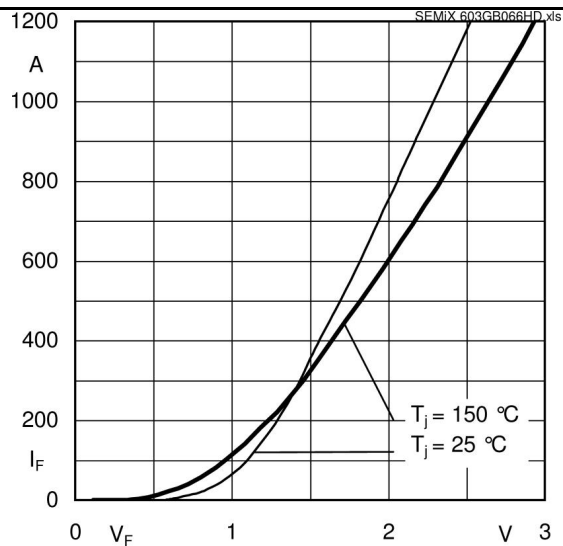


Fig. 10 Typ. CAL diode forward char., incl. $R_{CC'+EE'}$

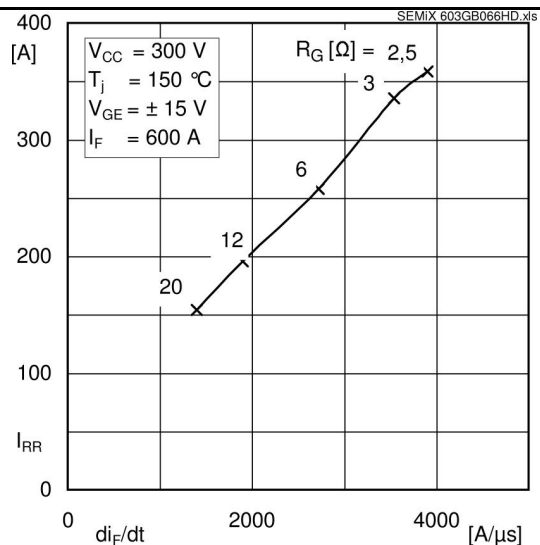


Fig. 11 Typ. CAL diode peak reverse recovery current

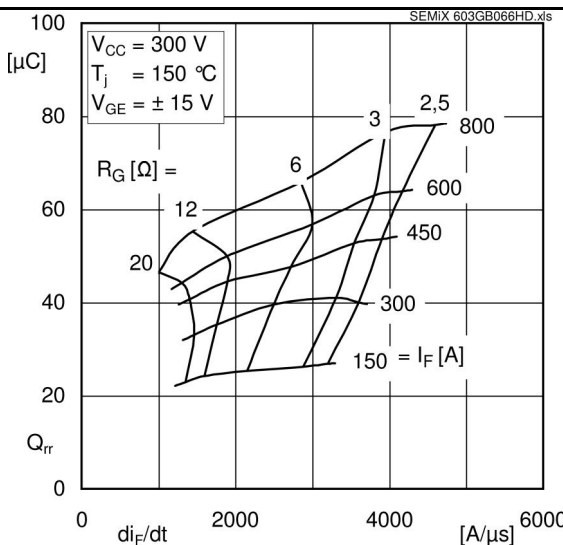
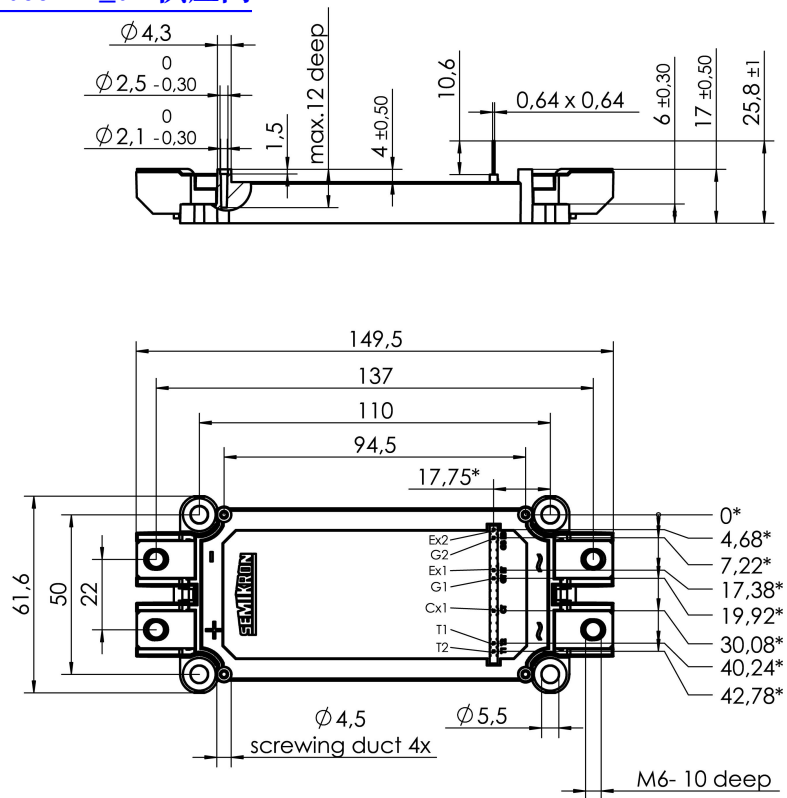


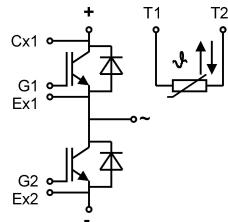
Fig. 12 Typ. CAL diode recovery charge

[查询"SEMIX603GB066HD"供应商](#)



* = all measures with $\pm 0,5$

Case SEMiX 3



Pinout

Gb