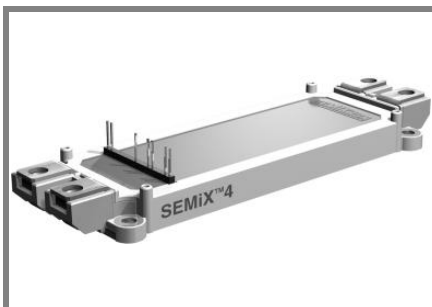


SEMIX 754GB128D



SEMIX® 4

SPT IGBT Modules

SEMIX 754GB128D

Preliminary Data

Features

- Homogeneous Si
- SPT = Soft-Punch-Through technology
- $V_{CE(sat)}$ with positive temperature coefficient
- High short circuit capability

Typical Applications

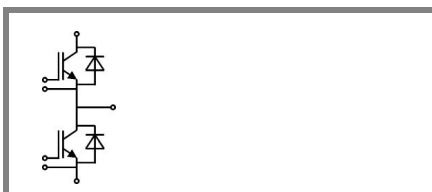
- AC inverter drives
- UPS
- Electronic welders up to 20 kHz

Remarks

- Not for new design

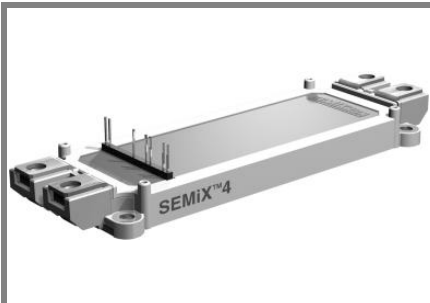
Absolute Maximum Ratings		$T_{case} = 25^{\circ}C$, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V_{CES}	$T_j = 25^{\circ}C$	1200		V
I_C	$T_j = 150^{\circ}C$	$T_{case} = 25^{\circ}C$	675	
		$T_{case} = 80^{\circ}C$	480	
I_{CRM}	$I_{CRM} = 2 \times I_{Cnom}$	800		A
V_{GES}		±20		V
t_{psc}	$V_{CC} = 600 V$; $V_{GE} \leq 20 V$; $T_j = 125^{\circ}C$ $V_{CES} < 1200 V$	10		µs
Inverse Diode				
I_F	$T_j = 150^{\circ}C$	$T_{case} = 25^{\circ}C$	565	
		$T_{case} = 80^{\circ}C$	385	
I_{FRM}	$I_{FRM} = 2 \times I_{Fnom}$	800		A
I_{FSM}	$t_p = 10 ms$; sin.	$T_j = 25^{\circ}C$	3100	
Module				
$I_{t(RMS)}$		600		A
T_{vj}		-40 ... +150		°C
T_{stg}		-40 ... +125		°C
V_{isol}	AC, 1 min.	4000		V

Characteristics		$T_{case} = 25^{\circ}C$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
IGBT					
$V_{GE(th)}$	$V_{GE} = V_{CE}$, $I_C = 16 mA$	4,5	5	6,5	V
I_{CES}	$V_{GE} = 0 V$, $V_{CE} = V_{CES}$	$T_j = 25^{\circ}C$	0,6		mA
		$T_j = 125^{\circ}C$			
V_{CE0}		$T_j = 25^{\circ}C$	1		V
		$T_j = 125^{\circ}C$	0,9		
r_{CE}	$V_{GE} = 15 V$	$T_j = 25^{\circ}C$	2,3		mΩ
		$T_j = 125^{\circ}C$	3		
$V_{CE(sat)}$	$I_{Cnom} = 400 A$, $V_{GE} = 15 V$	$T_j = 25^{\circ}C_{chiplev.}$	1,9		V
		$T_j = 125^{\circ}C_{chiplev.}$	2,1		
C_{ies}	$V_{CE} = 25$, $V_{GE} = 0 V$	37,7		nF	
C_{oes}		2,5		nF	
C_{res}		1,6		nF	
Q_G	$V_{GE} = -8 V \dots +15 V$	3800		nC	
$t_{d(on)}$	$R_{Gon} = 2,5 \Omega$	$V_{CC} = 600V$ $I_{Cnom} = 400A$	180		ns
t_r			88		
E_{on}	$R_{Goff} = 2,5 \Omega$	$T_j = 125^{\circ}C$	48		mJ
$t_{d(off)}$			655		
t_f			120		
E_{off}			44		mJ
$R_{th(j-c)}$	per IGBT	0,05		K/W	



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SEMiX 754GB128D



SEMiX® 4

SPT IGBT Modules

SEMiX 754GB128D

Preliminary Data

Features

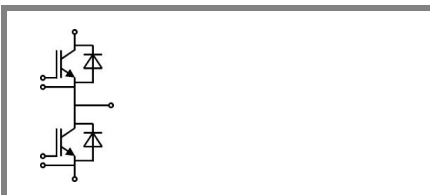
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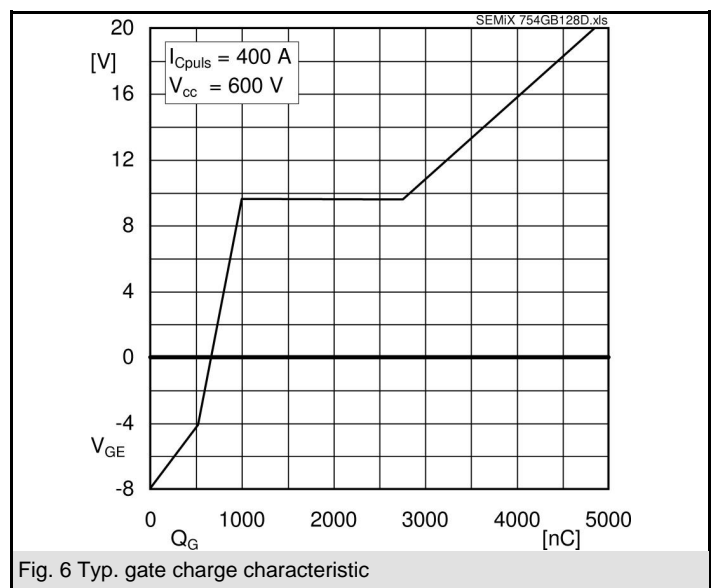
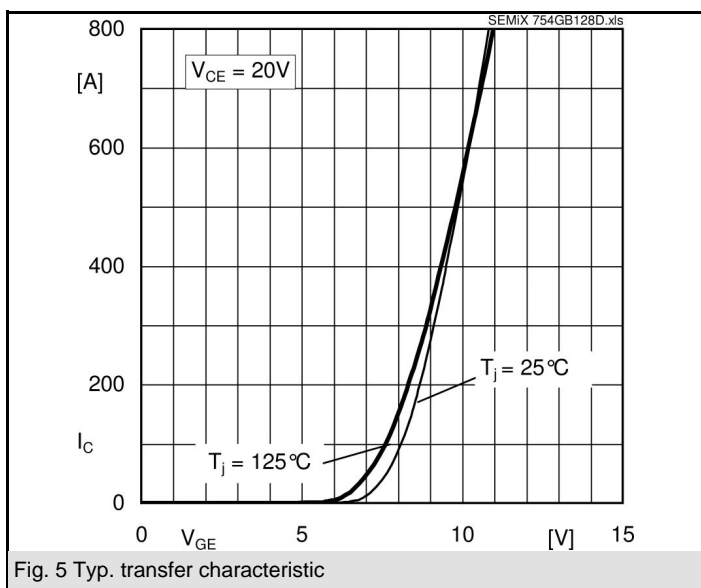
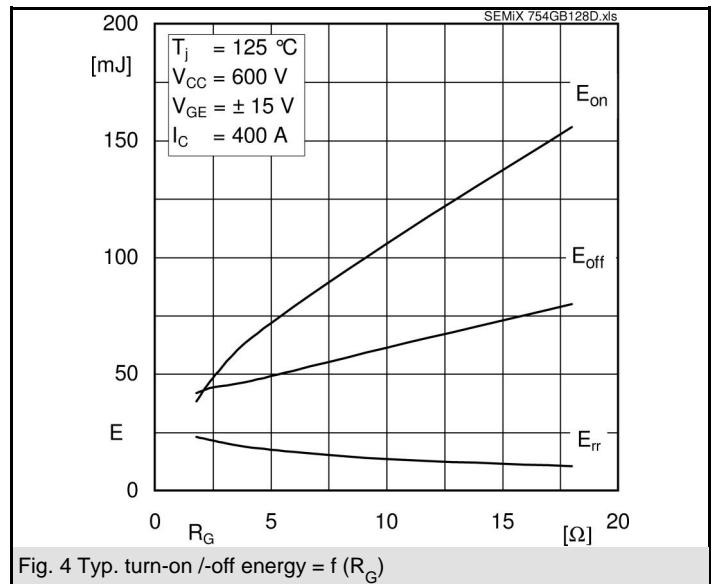
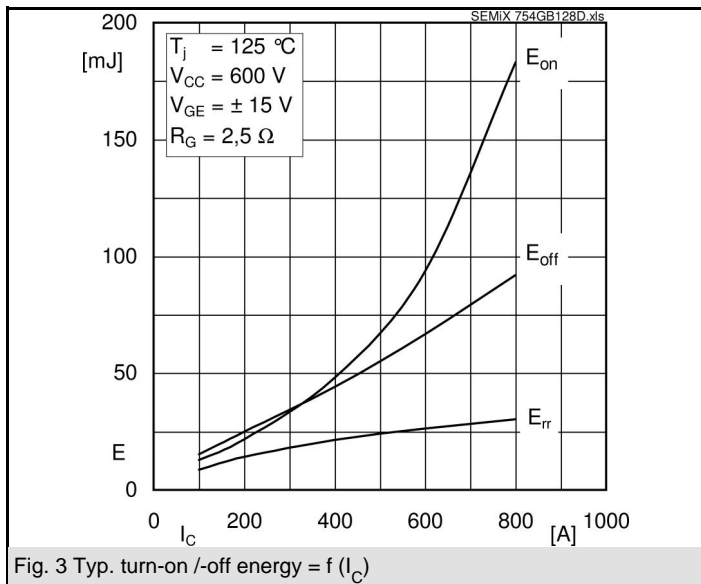
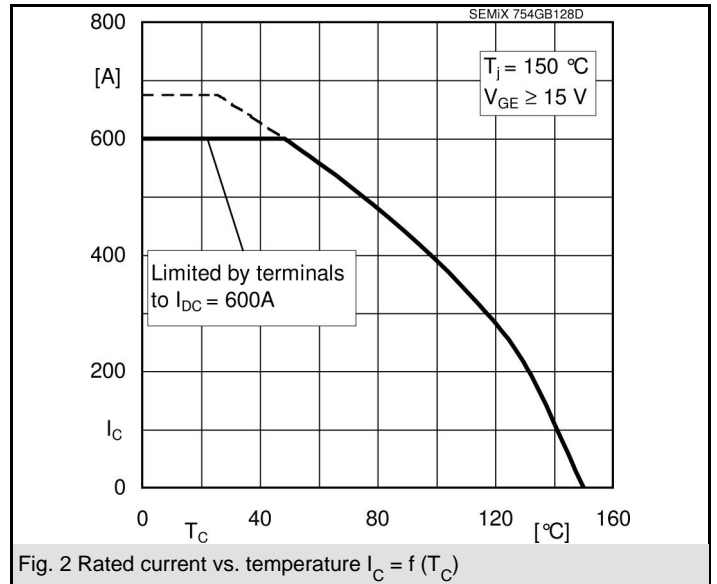
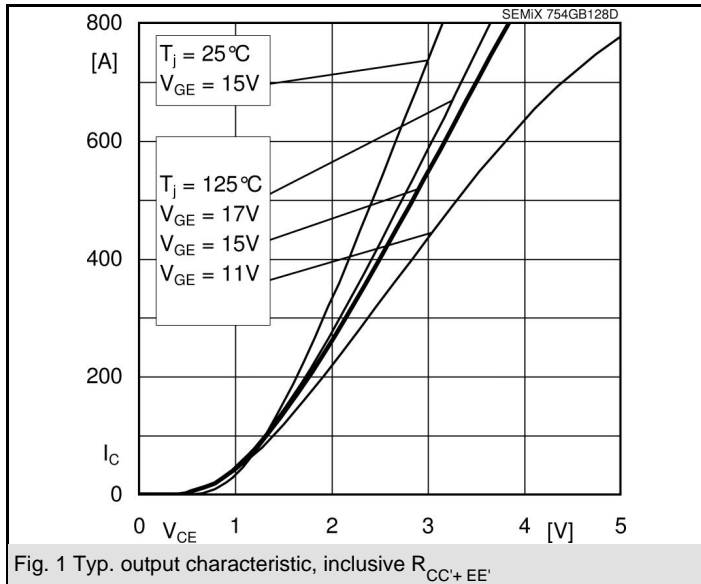


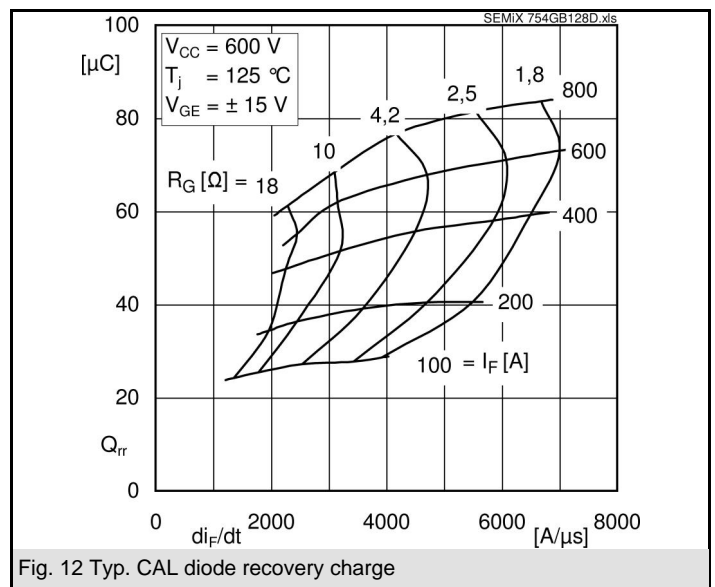
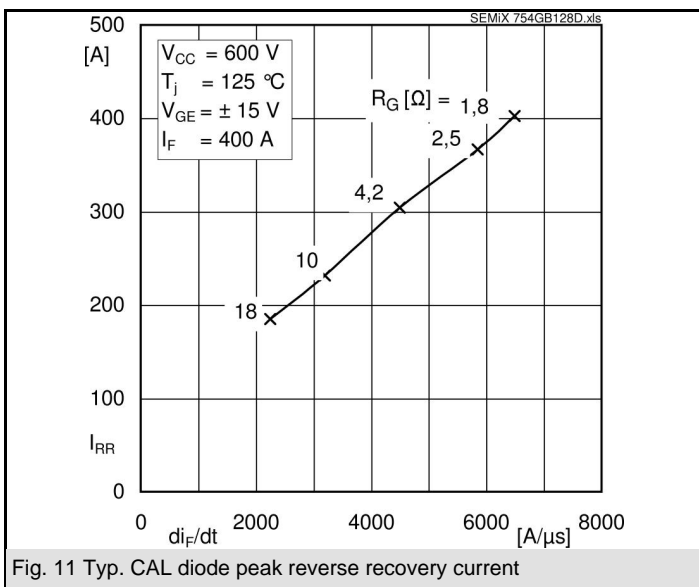
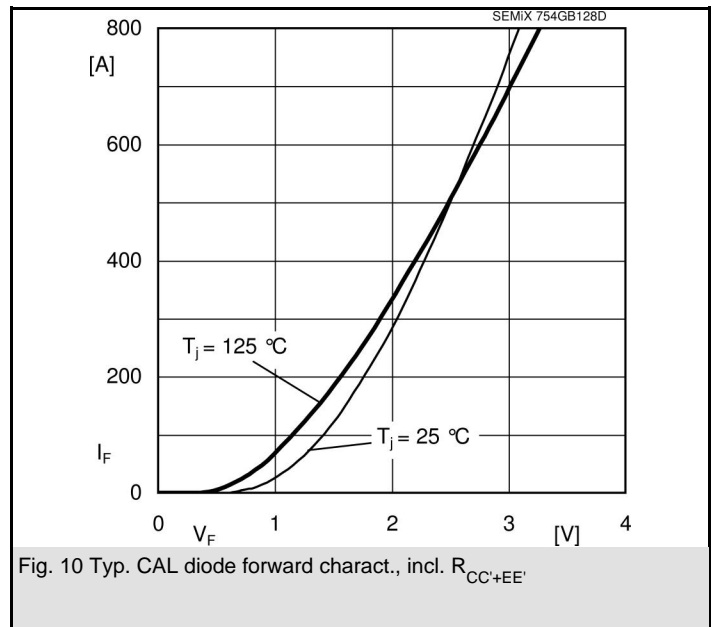
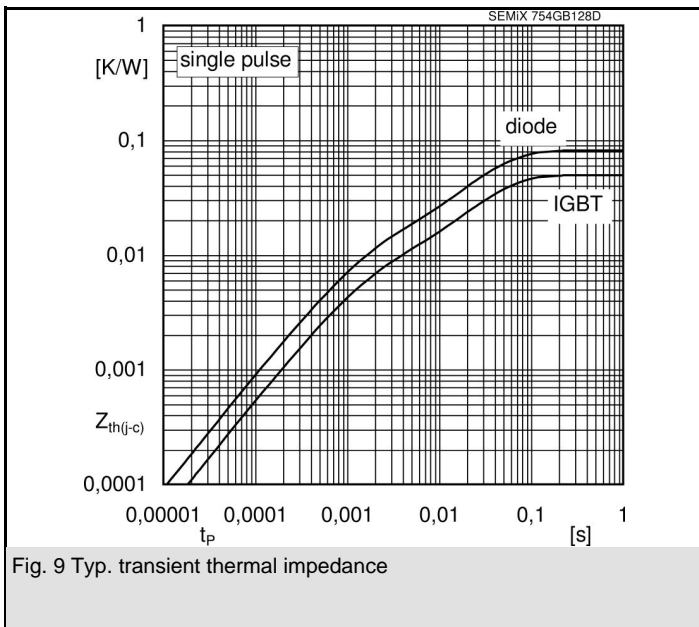
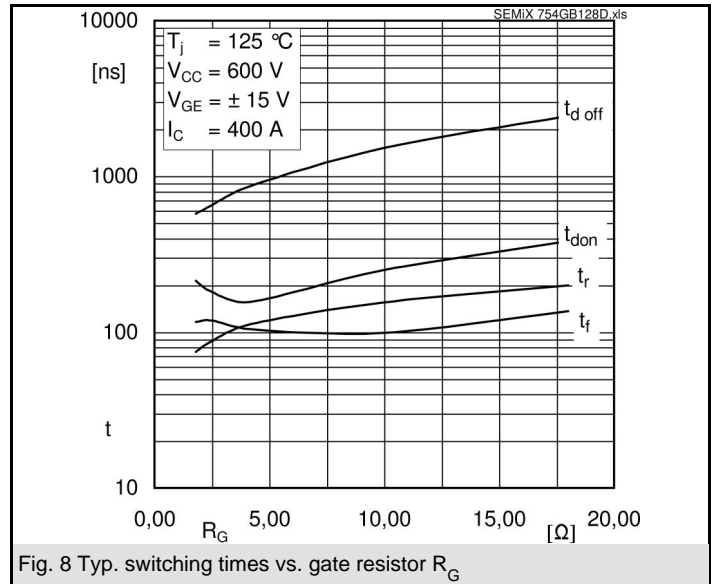
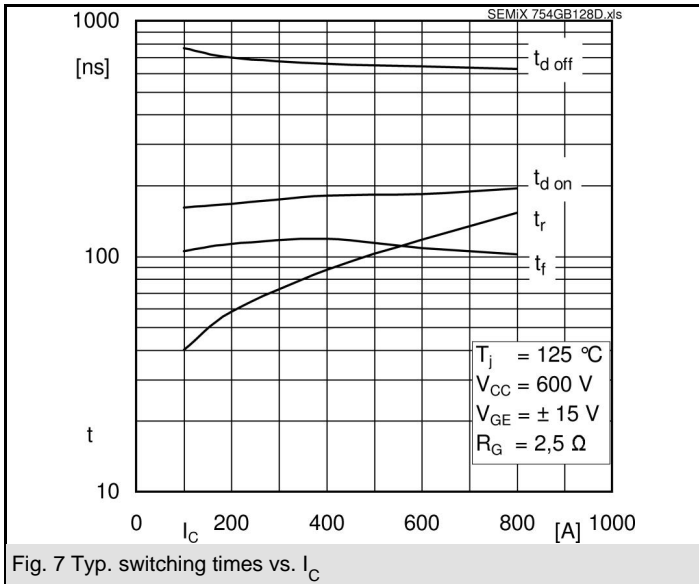
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Characteristics		min.	typ.	max.	Units
Symbol	Conditions				
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 400 \text{ A}; V_{GE} = 0 \text{ V}$		2	2,5	V
			1,8	2,3	V
					V
V_{F0}			1,1	1,45	V
			0,85	1,2	V
r_F			2,3	2,6	mΩ
			2,4	2,8	mΩ
I_{RRM}	$I_{Fnom} = 400 \text{ A}$		365		A
Q_{rr}	$di/dt = 5800 \text{ A}/\mu\text{s}$		58		μC
E_{rr}	$V_{GE} = -15 \text{ V}; V_{CC} = 600 \text{ V}$		22		mJ
$R_{th(j-c)D}$	per diode			0,082	K/W
Module					
L_{CE}			22		nH
$R_{CC'+EE'}$	res., terminal-chip	$T_{case} = 25 \text{ °C}$	0,7		mΩ
		$T_{case} = 125 \text{ °C}$	1		mΩ
$R_{th(c-s)}$	per module		0,03		K/W
M_s	to heat sink (M5)		3	5	Nm
M_t	to terminals (M6)		2,5	5	Nm
w				400	g
Temperature sensor					
R_{100}	$T_c = 100 \text{ °C}$ ($R_{25} = 5 \text{ k}\Omega$)		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

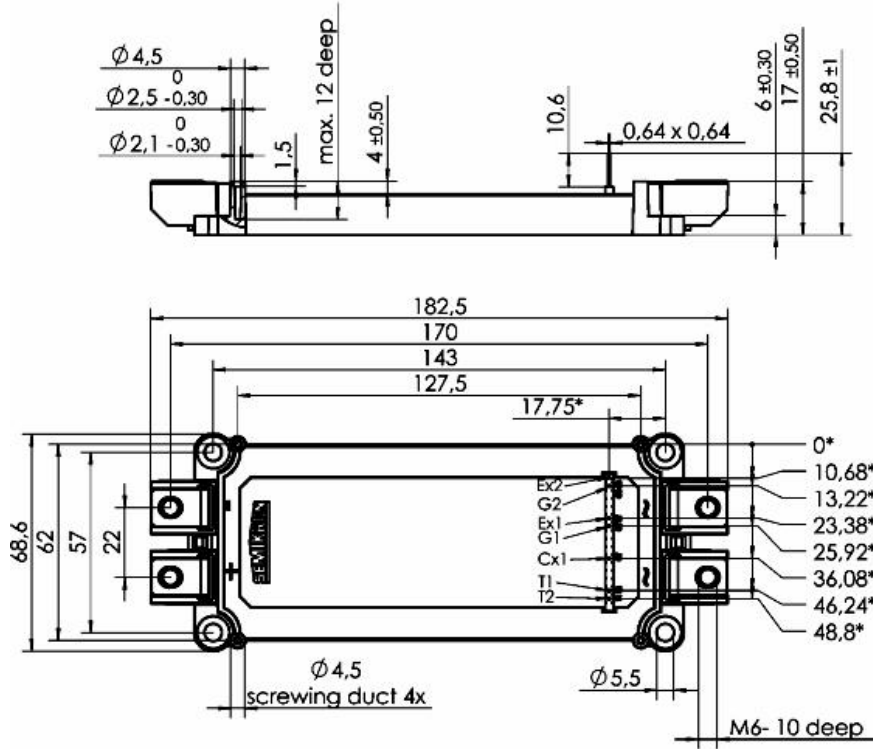
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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



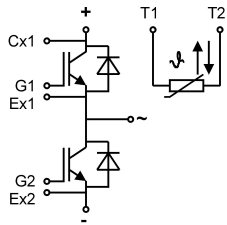


SEMiX 754GB128D



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

Case SEMiX 4



Pinout

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