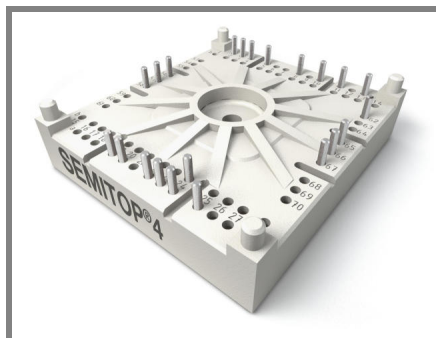




SEMIPACK® 4

IGBT Module

SK100MLI066T

Preliminary Data

Features

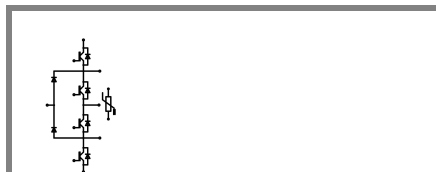
- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications*

- Multi level inverter

Remarks

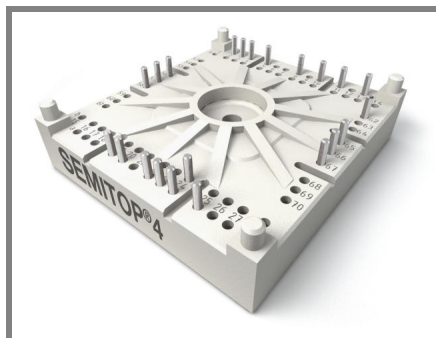
- $V_{isol} = 3000V$ AC, 1s, 50Hz
- Dynamic measure: DUT= IGBT (Gate pin 55) and Neutral Clamp Diode (Kathode pin 56) as free-wheeling diode



MLI-T

Absolute Maximum Ratings		T _s = 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 _s = 25 °C	105	A
		T _s = 70 °C	80	A
I _{CRM}	I _{CRM} = 2 x I _{Cnom}	200	A	
V _{GES}		± 20	V	
t _{psc}	V _{CC} = 360 V; V _{GE} ≤ 20 V; T _j = 125 °C V _{CES} < 600 V	6	μs	
Inverse Diode				
I _F	T _j = 175 °C	T _s = 25 °C	110	A
		T _s = 70 °C	85	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}	200	A	
Freewheeling Diode				
I _F	T _j = 175 °C	T _s = 25 °C	110	A
		T _s = 70 °C	85	A
I _{FRM}	I _{FRM} = 2 x I _{Fnom}	200	A	
Module				
I _{t(RMS)}			A	
T _{vj}		-40 ... +175	°C	
T _{stg}		-40 ... +125	°C	
V _{isol}	AC, 1 min.	2500	V	

Characteristics			T _s = 25 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 1,6 mA		5	5,8	6,5	V
I _{CES}	V _{GE} = 0 V, V _{CE} = V _{CES}	T _J = 25 °C T _J = 125 °C	0,0052			mA mA
I _{GES}	V _{CE} = 0 V, V _{GE} = 20 V	T _J = 25 °C	1200			nA
V _{CE0}		T _J = 25 °C T _J = 150 °C	0,8 0,7		1,1 1	V V
r _{CE}	V _{GE} = 15 V	T _J = 25°C T _J = 150°C	6,5 9,5		8 10,5	mΩ mΩ
V _{CE(sat)}	I _{Cnom} = 100 A, V _{GE} = 15 V	T _J = 25°C _{chiplev.} T _J = 150°C _{chiplev.}	1,45 1,65		1,85 2,05	V V
C _{ies}	V _{CE} = 25, V _{GE} = 0 V	f = 1 MHz	6,28			nF
C _{oes}			0,4			nF
C _{res}			0,19			nF
Q _G	V _{GE} =-7V...+15V		1000			nC
t _{d(on)}	R _{Gon} = 4 Ω di/dt = 3100 A/μs	V _{CC} = 300V I _C = 100A T _J = 150 °C V _{GE} =-7/+15V	136			ns
t _r			48			ns
E _{on}			2,5			mJ
t _{d(off)}	R _{Goff} = 4 Ω di/dt = 3100 A/μs	T _J = 150 °C V _{GE} =-7/+15V	457			ns
t _f			50			ns
E _{off}			4,2			mJ
R _{th(j-s)}	per IGBT		0,65			K/W



SEMITOP® 4

IGBT Module

SK100MLI066T

Preliminary Data

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- Trench IGBT technology
- CAL technology FWD
- Integrated NTC temperature sensor

Typical Applications*

- Multi level inverter

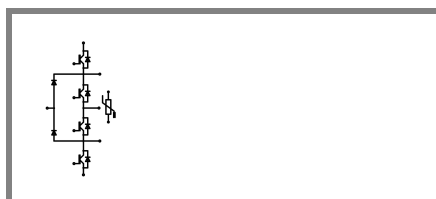
Remarks

- $V_{isol} = 3000V$ AC, 1s, 50Hz
- Dynamic measure: DUT= IGBT (Gate pin 55) and Neutral Clamp Diode (Kathode pin 56) as free-wheeling diode

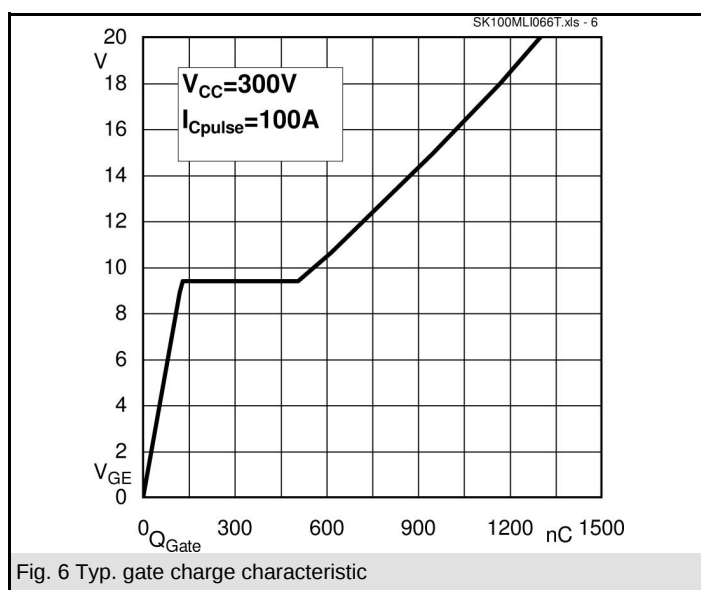
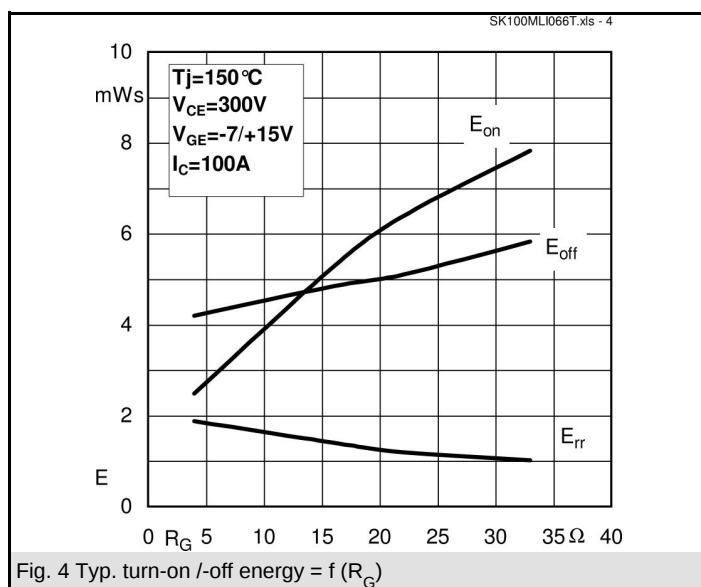
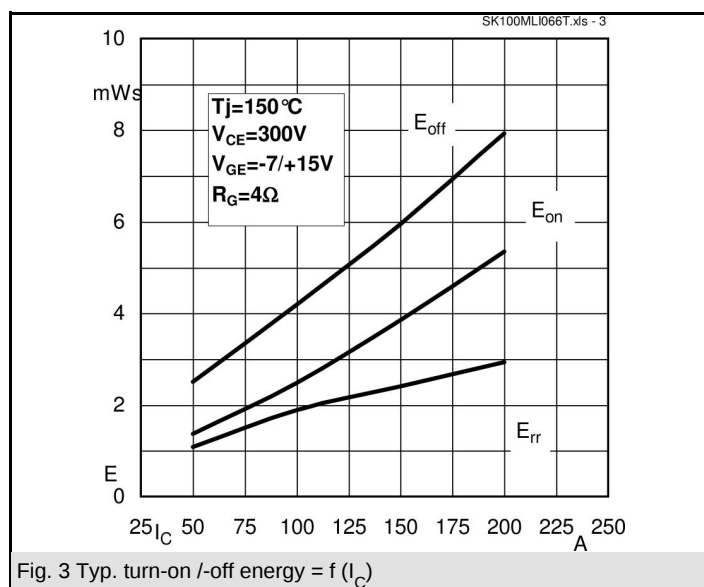
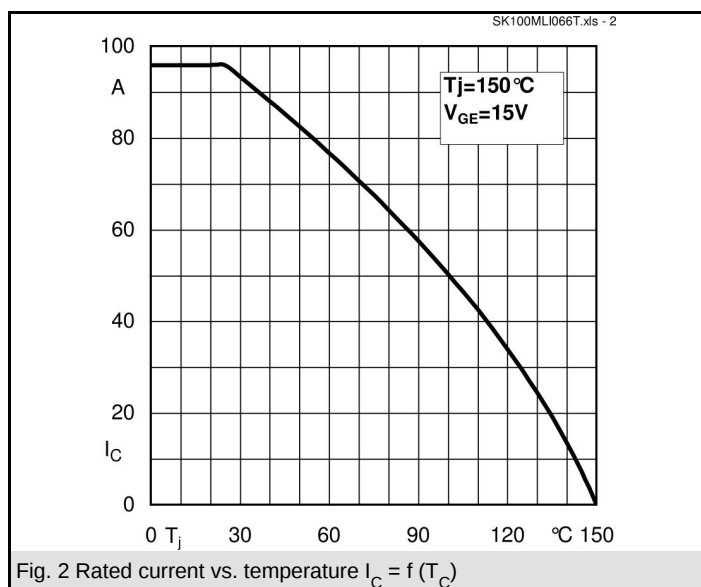
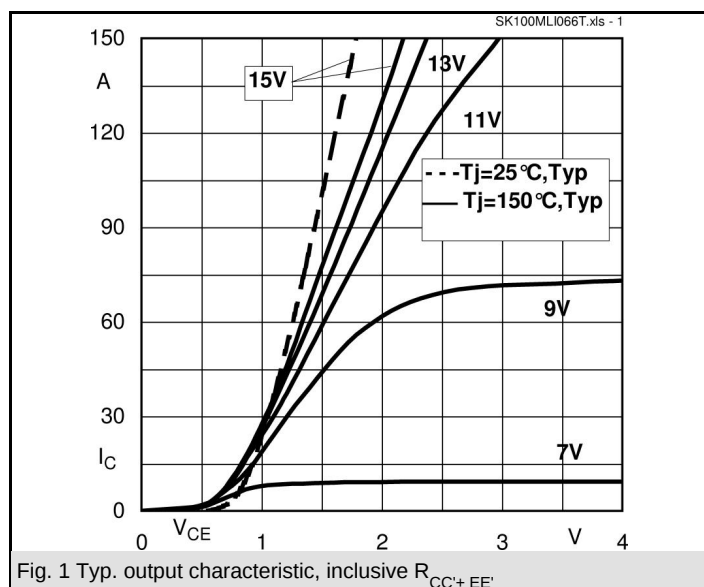
Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 100 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,35		V
		T _j = 150 °C _{chiplev.}		1,31		V
V _{F0}		T _j = 25 °C		0,9		V
		T _j = 150 °C		0,85		V
r _F		T _j = 25 °C		4,5		mΩ
		T _j = 150 °C		6,3		mΩ
I _{RRM}	I _F = 100 A	T _j = 150 °C		84		A
Q _{rr}	di/dt = 3100 A/μs			6		μC
E _{rr}	V _R = 300V			1,9		mJ
R _{th(j-s)D}	per diode			0,9		K/W
Freewheeling Diode (Neutral Clamp Diode)						
V _F = V _{EC}	I _{Fnom} = 100 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		1,35		V
		T _j = 150 °C _{chiplev.}		1,31		V
V _{F0}		T _j = 25 °C		0,9		V
		T _j = 150 °C		0,85		V
r _F		T _j = 25 °C		4,5		V
		T _j = 150 °C		6,3		V
I _{RRM}	I _F = 100 A	T _j = 150 °C		80		A
Q _{rr}	di/dt = 3000 A/μs			18		μC
E _{rr}	V _R =300V			1,9		mJ
R _{th(j-s)FD}	per diode			0,9		K/W
M _s	to heat sink		2,5		2,75	Nm
w				60		g
Temperature sensor						
R ₁₀₀	T _s =100°C (R ₂₅ =5kΩ)			493±5%		Ω

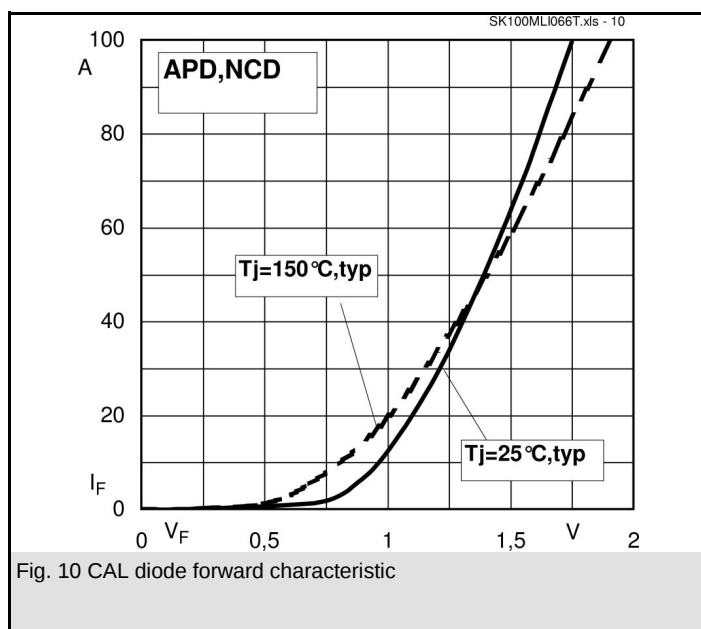
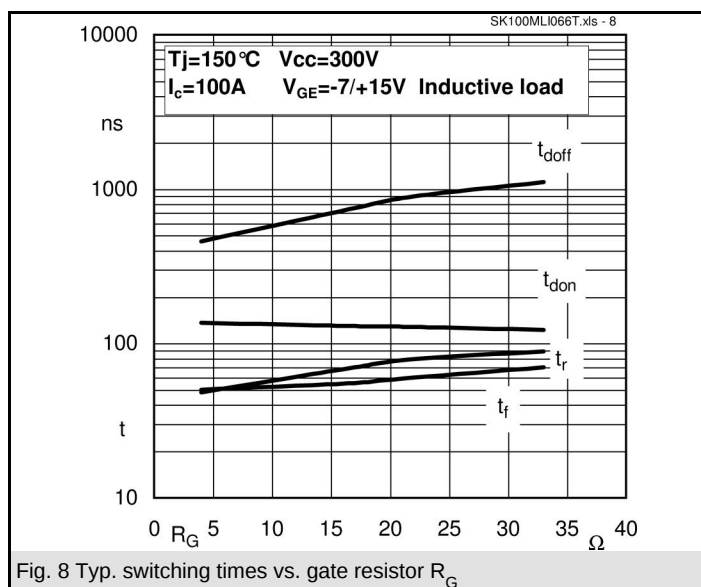
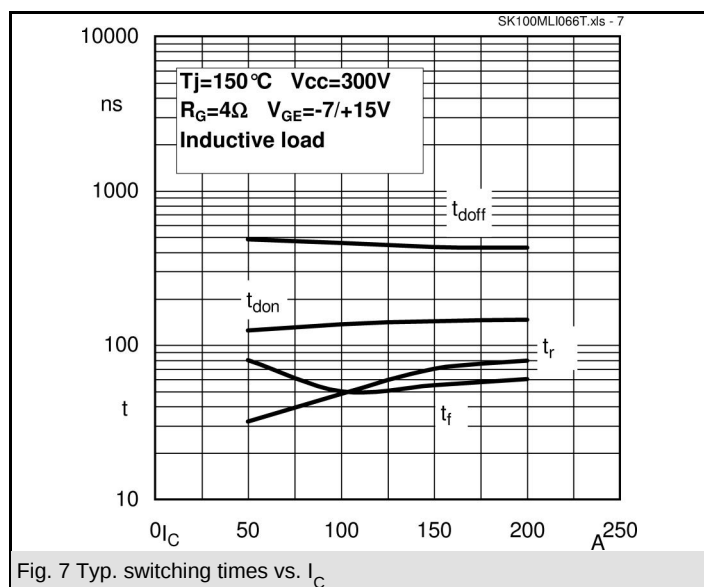
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our personal.



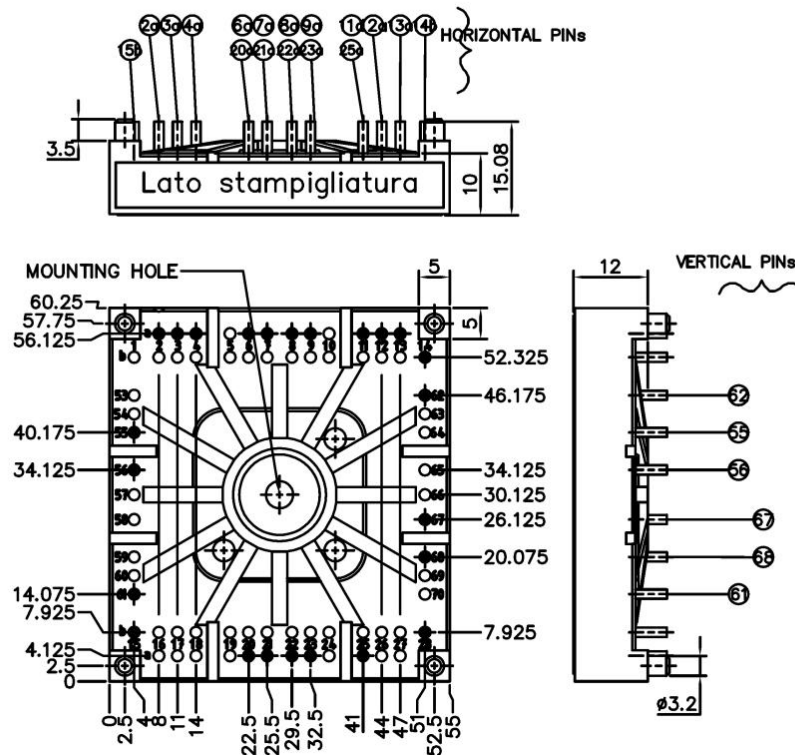
MLI-T



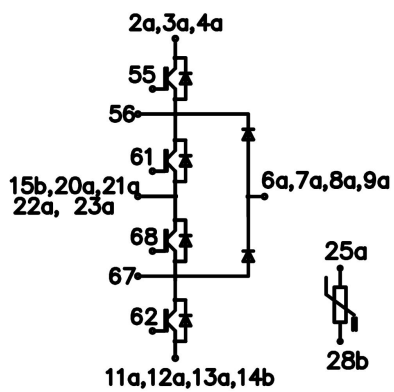


UL recognized

file no. E 63 532



Case T 88 (Suggested hole diameter for the solder pins in the circuit board: 2mm. Suggested hole diameter for the mounting pins in the circuit board: 3,6mm)



Case T 88

MLI-T