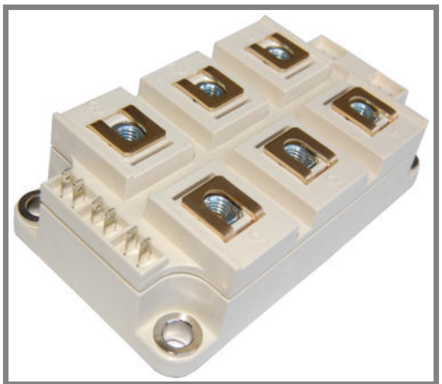
SKM 150 MLI 066 T



SEMITRANS® 5

Trench IGBT Modules

SKM 150 MLI 066 T

Target Data

Features

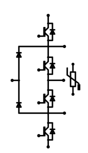
- Homogeneous Si
- Trench = Trenchgate technology
- $V_{CE(sat)}$ with positive temperature coefficient
- Integrated NTC temperature sensor

Typical Applications*

- UPS
- 3 Level Inverter

Remarks

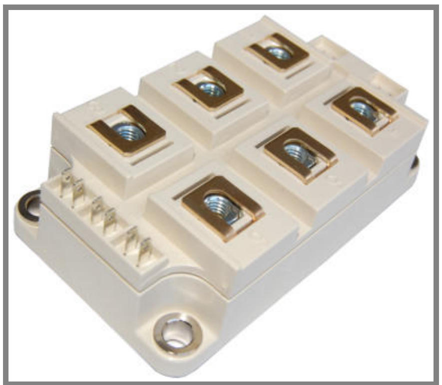
- Case temperature limited to T_c =125°C max, recommended T_{op} = -40..+150°C



MLI-T

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	200	A
		T_c = 80 °C	150	A
I_{CRM}	I_{CRM}=2xI_{Cnom}		300	A
V_{GES}			± 20	V
t_{psc}	V_{CC} = 360 V; $V_{GE} \leq$ 15 V; VCES < 600 V	T_j = 150 °C	6	µs
Inverse Diode				
I_F	T_j = 150 °C	T_c = 25 °C	200	A
		T_c = 80 °C	145	A
I_{FRM}	I_{FRM}=2xI_{Fnom}		300	A
I_{FSM}	t_p = 10 ms; half sine wave	T_j = 150 °C	1080	A
Freewheeling Diode				
I_F	T_j = 150 °C	T_c = 25 °C	200	A
		T_c = 80 °C	145	A
I_{FRM}	I_{FRM}=2xI_{Fnom}		300	A
I_{FSM}	t_p = 10 ms; half sine wave	T_j = 150 °C	1080	A
Module				
$I_{t(RMS)}$			500	A
T_{vj}			- 40 ... + 175	°C
T_{stg}			- 40 ... + 125	°C
V_{isol}	AC, 1 min.		2500	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 = 2,4 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = 0 V, V_{CE} = V_{CES}	T_j = 25 °C			0,0076	mA
I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V	T_j = 25 °C			600	nA
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		3,6	6	mΩ
		T_j = 150°C		5,4	7,6	mΩ
$V_{CE(sat)}$	I_{Cnom} = 150 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		9,2		nF
C_{oes}				0,57		nF
C_{res}				0,27		nF
R_{Gint}	T_j = °C			2		Ω
$t_{d(on)}$	R_{Gon} = 2 Ω	V_{CC} = 300V				ns
t_r		I_C= 150A				ns
E_{on}		T_j = 150 °C		0,7		mJ
$t_{d(off)}$	R_{Goff} = 4 Ω	V_{GE} = -8V/+15V				ns
t_f						ns
E_{off}				4,7		mJ
$R_{th(j-c)}$	per IGBT			0,29		K/W



SEMITRANS® 5

Trench IGBT Modules

SKM 150 MLI 066 T

Target Data

Features

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

Typical Applications*

- UPS
- 3 Level Inverter

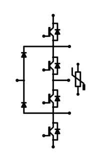
Remarks

- Case temperature limited to T_c =125°C max, recommended T_{op} = -40..+150°C

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 150 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,35	1,6	V
		T_j = 150 °$C_{chiplev.}$		1,35	1,6	V
V_{F0}		T_j = 25 °C		1	1,1	V
		T_j = 150 °C		0,9	1	V
r_F		T_j = 25 °C		2,3	3,3	mΩ
		T_j = 150 °C		3	4	mΩ
I_{RRM}	I_F = 150 A	T_j = 150 °C				A
Q_{rr}						µC
E_{rr}	V_{GE} = -8 V; V_{CC} = 300 V					mJ
$R_{th(j-c)D}$	per diode			0,52		K/W
Free-wheeling diode (Neutral Clamp Diode)						
$V_F = V_{EC}$	I_{Fnom} = 150 A; V_{GE} = 0 V	T_j = 25 °$C_{chiplev.}$		1,35	1,6	V
		T_j = 150 °$C_{chiplev.}$		1,35	1,6	V
V_{F0}		T_j = 25 °C		1	1,1	V
		T_j = 150 °C		0,9	1	V
r_F		T_j = 25 °C		2,3	3,3	V
		T_j = 150 °C		3	4	V
I_{RRM}	I_F = 150 A	T_j = 150 °C				A
Q_{rr}						µC
E_{rr}	V_{GE} = 0 V; V_{CC} = 600 V					mJ
$R_{th(j-c)FD}$	per diode			0,52		K/W
$R_{th(c-s)}$	per module				0,038	K/W
M_s	to heat sink M6		3		5	Nm
M_t	to terminals M6		2,5		5	Nm
w					310	g
Temperature sensor						
R_{100}	T_s=100°C (R_{25}=5kΩ)			493±5%		Ω
						K

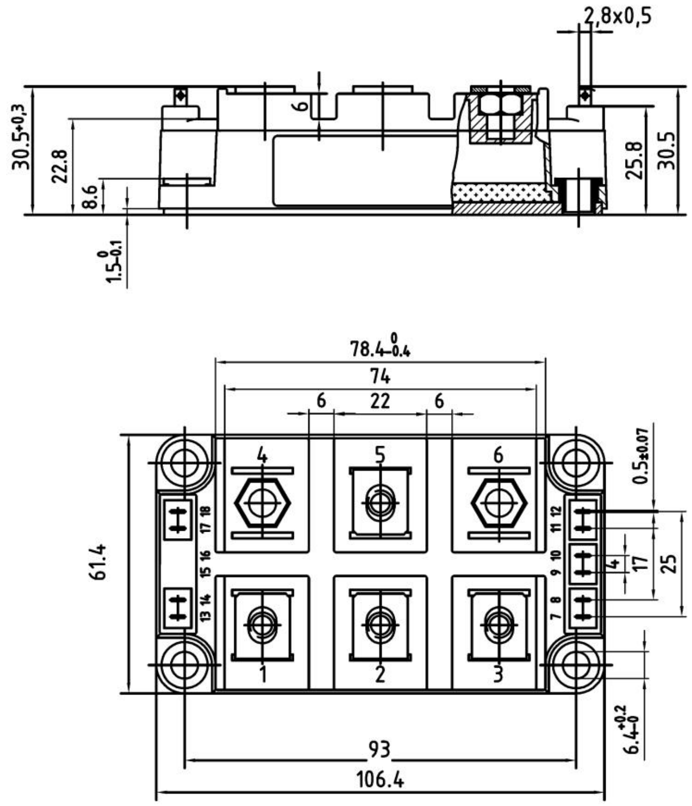
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

* 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.

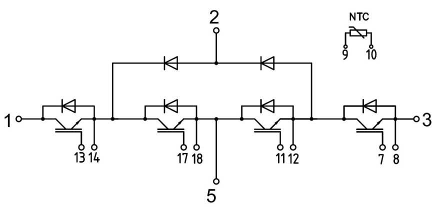


MLI-T

SKM 150 MLI 066 T



Case D60



MLI-T Case D60