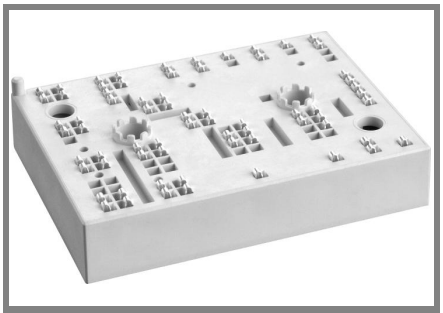
SKiiP 39AC12T4V1



MiniSKiiP®3

3-phase bridge inverter

SKiiP 39AC12T4V1

Target Data

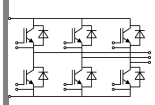
Features

- Trench 4 IGBT´s
- Robust and soft freewheeling diodes in CAL technology
- Highly reliable spring contacts for electrical connections
- UL recognised file no. E63532

Typical Applications

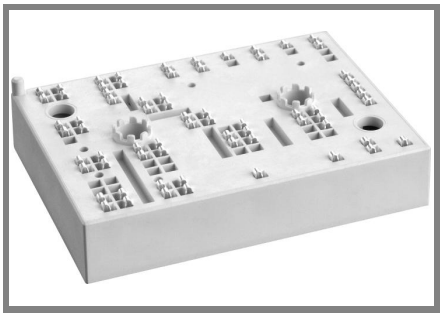
Absolute Maximum Ratings			T_s = 25 °C, unless otherwise specified	
Symbol	**Conditions**		**Values**	**Units**
IGBT				
V_{CES}	T_j = 25 °C		1200	V
I_C	T_j = 175 °C	T_c = 25 °C	171	A
		T_c = 70 °C	135	A
I_{CRM}	I_{CRM} = 3xI_{Cnom}		450	A
V_{GES}			±20	V
t_{psc}	V_{CC} = 600 V; $V_{GE} \leq$ 20 V; V_{CES} < 1200 V	T_j = 150 °C	10	µs
Inverse Diode				
I_F	T_j = 175 °C	T_c = 25 °C	144	A
		T_c = 70 °C	128	A
I_{FRM}	I_{CRM} = 3xI_{Cnom}		450	A
I_{FSM}	t_p = 10 ms; sin	T_j = 150 °C	900	A
Module				
$I_{t(RMS)}$			160	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 = 6 mA		5	5,8	6,5	V
I_{CES}	V_{GE} = V, V_{CE} = V_{CES}	T_j = °C				mA
V_{CE0}		T_j = 25 °C		1,1	1,3	V
		T_j = 150 °C		1	1,2	V
r_{CE}	V_{GE} = 15 V	T_j = 25°C		5	5	mΩ
		T_j = 150°C		8,3	8,3	mΩ
$V_{CE(sat)}$	I_{Cnom} = 150 A, V_{GE} = 15 V	T_j = 25°C$_{chiplev.}$		1,8	2	V
		T_j = 150°C$_{chiplev.}$		2,2	2,4	V
C_{ies}	V_{CE} = 25, V_{GE} = 0 V	f = 1 MHz				nF
C_{oes}						nF
C_{res}						nF
R_{Gint}	T_j = 25 °C			5		Ω
$t_{d(on)}$	R_{Gon} =	V_{CC} = V				ns
t_r		I_{Cnom}= A				ns
E_{on}		T_j = °C		9		mJ
$t_{d(off)}$	R_{Goff} =	V_{GE} = ±15V				ns
t_f						ns
E_{off}				21		mJ
$R_{th(j-s)}$	per IGBT			0,33		K/W



AC

SKiiP 39AC12T4V1



MiniSKiiP®3

3-phase bridge inverter

SKiiP 39AC12T4V1

Target Data

Features

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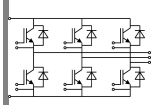
Typical Applications



AC

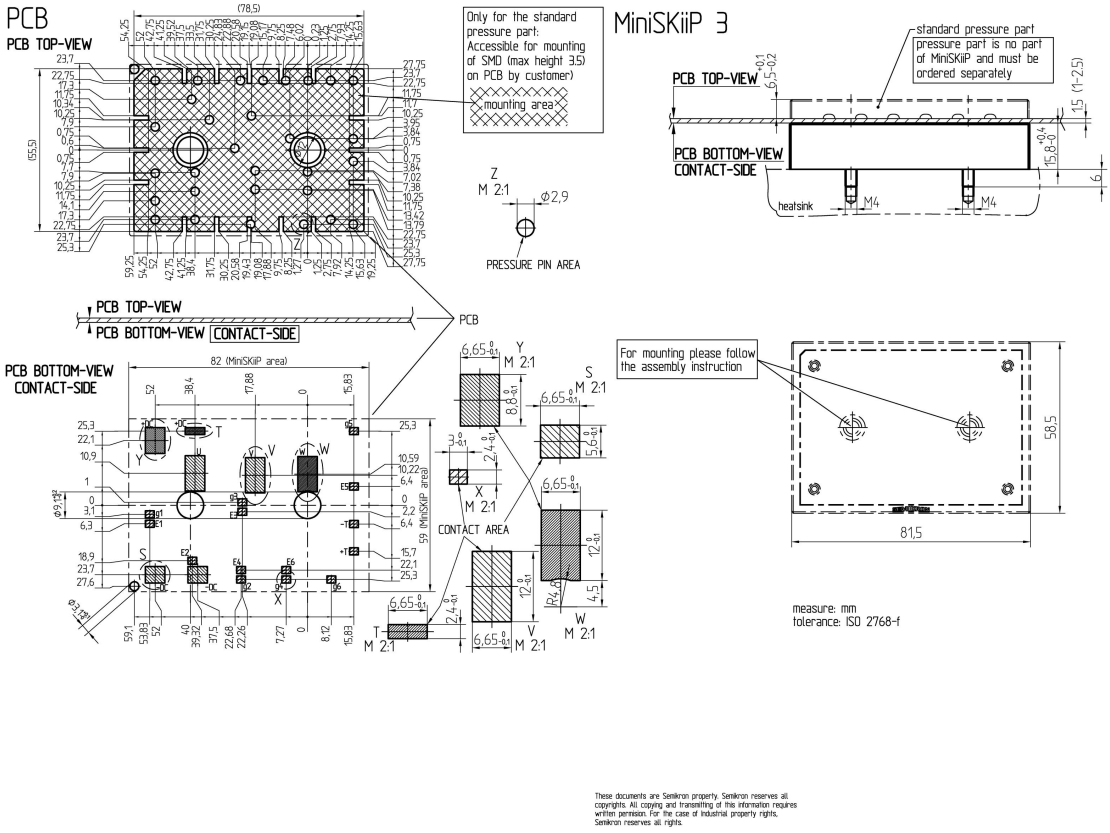
Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Units**
Inverse Diode						
$V_F = V_{EC}$	I_{Fnom} = 150 A; V_{GE} = 15 V	T_j = 25 °$C_{chiplev.}$		2,15	2,45	V
		T_j = 150 °$C_{chiplev.}$		2,05	2,4	V
V_{F0}		T_j = 25 °C		1,3	1,5	V
		T_j = 150 °C		0,9	1,1	V
r_F		T_j = 25 °C		5,7	6,3	mΩ
		T_j = 150 °C		7,7	8,6	mΩ
I_{RRM}	I_{Fnom} = 150 A	T_j = 150 °C				A
Q_{rr}						µC
E_{rr}	V_{GE} = ±15V			11,3		mJ
$R_{th(j-s)}$	per diode			0,4		K/W
M_s	to heat sink		2		2,5	Nm
w				95		g
Temperature sensor						
R_{ts}	3%, Tr = 25°C			1000		Ω
R_{ts}	3%, Tr = 100°C			1670		Ω

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

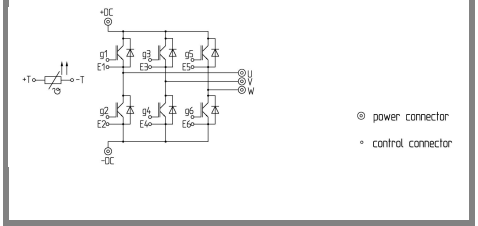
This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

SKiiP 39AC12T4V1

UL recognized file no. E 63 532



case



pinout

