SKiiP 39AC12T4V1

MiniSKiiP®3

3-phase bridge inverter

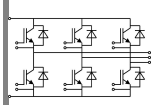
SKiiP 39AC12T4V1

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



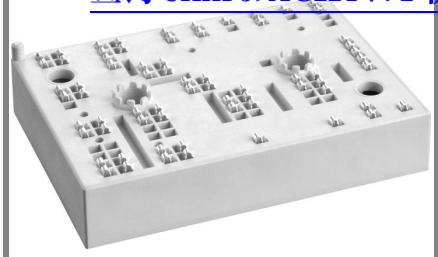
AC

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



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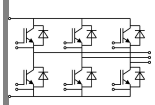


AC

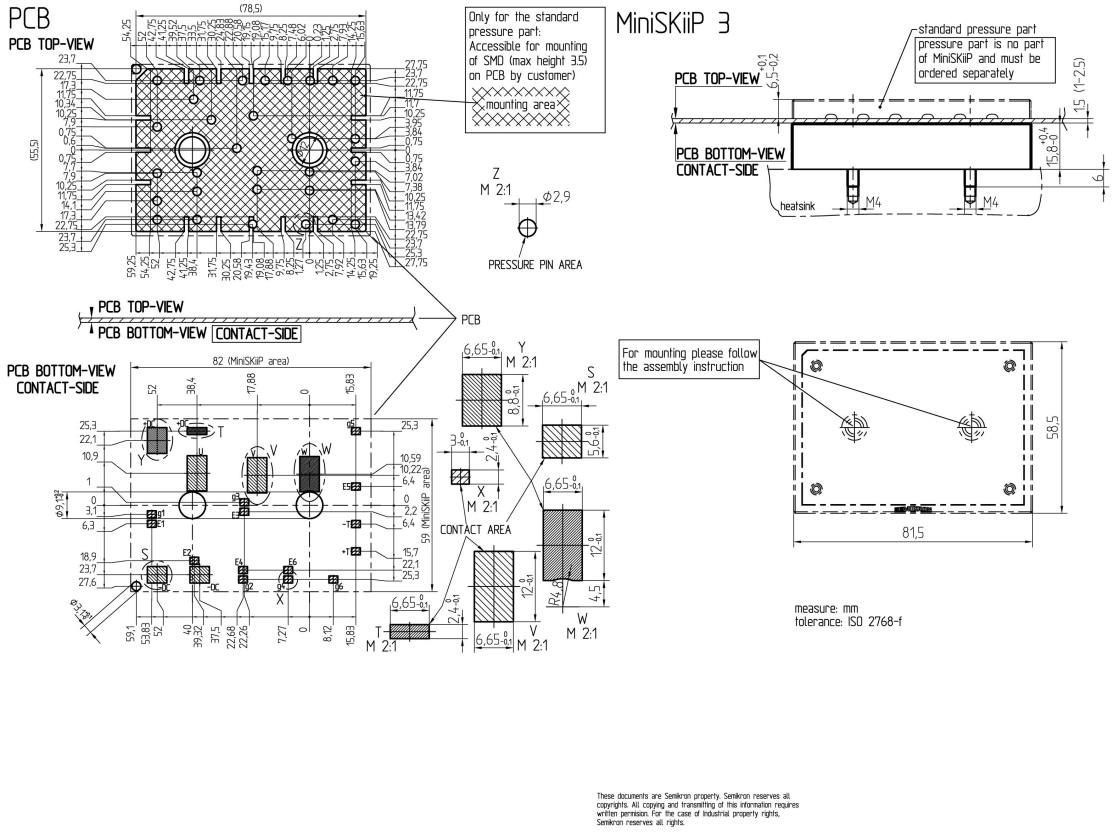
Characteristics

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

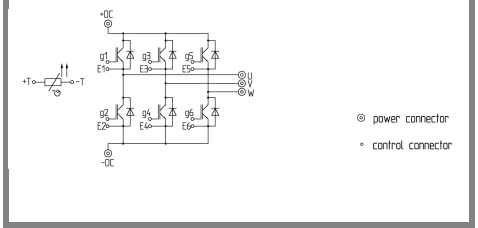
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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

UL recognized file no. E 63 532



case



pinout