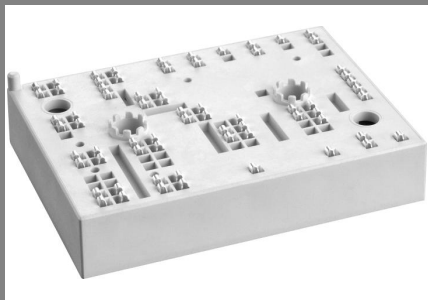


SKiiP 38AC12T4V1



MiniSKiiP^{®3}

3-phase bridge inverter

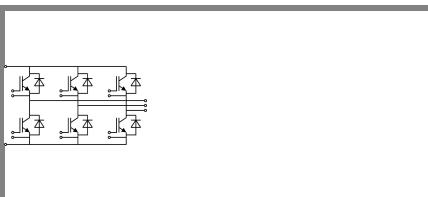
SKiiP 38AC12T4V1

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

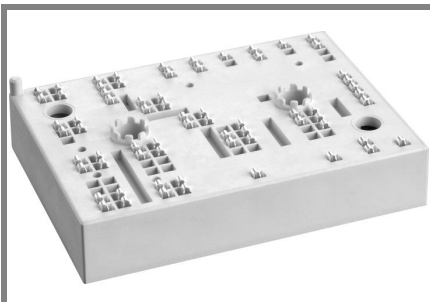


AC

Absolute Maximum Ratings		$T_s = 25\text{ °C}$, unless otherwise specified			
Symbol	Conditions	Values		Units	
IGBT					
V_{CES}	$T_j = 25\text{ °C}$	1200		V	
I_C	$T_j = 175\text{ °C}$	$T_c = 25\text{ °C}$	128		A
		$T_c = 70\text{ °C}$	102		A
I_{CRM}	$I_{CRM} = 3 \times I_{Cnom}$	300		A	
V_{GES}		±20		V	
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 150\text{ °C}$ $V_{CES} < 1200\text{ V}$	10		µs	
Inverse Diode					
I_F	$T_j = 175\text{ °C}$	$T_c = 25\text{ °C}$	103		A
		$T_c = 70\text{ °C}$	82		A
I_{FRM}	$I_{CRM} = 3 \times I_{Cnom}$	300		A	
I_{FSM}	$t_p = 10\text{ ms}; \sin$	$T_j = 150\text{ °C}$	545		A
Module					
$I_{t(RMS)}$		160		A	
T_{vj}		-40...+150		°C	
T_{stg}		-40...+125		°C	
V_{isol}	AC, 1 min.	2500		V	

Characteristics		$T_s = 25\text{ °C}$, unless otherwise specified				
Symbol	Conditions	min.	typ.	max.	Units	
IGBT						
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = \text{mA}$	5	5,8	6,5	V	
I_{CES}	$V_{GE} = V, V_{CE} = V_{CES}$		$T_j = 25\text{ °C}$	mA		
			$T_j = 150\text{ °C}$			
V_{CE0}			$T_j = 25\text{ °C}$	1,1	1,3	V
			$T_j = 150\text{ °C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$		$T_j = 25\text{ °C}$	7	7	mΩ
			$T_j = 150\text{ °C}$	12	12	mΩ
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}, V_{GE} = 15\text{ V}$		$T_j = 25\text{ °C}_{chiplev.}$	1,8	2	V
			$T_j = 150\text{ °C}_{chiplev.}$	2,2	2,4	V
C_{res}	$V_{CE} = V, V_{GE} = V$	$f = \text{MHz}$				nF
C_{oes}						nF
C_{res}						nF
R_{Gint}	$T_j = 25\text{ °C}$		7,5		Ω	
$t_{d(on)}$	$R_{Gon} =$	$V_{CC} = V$ $I_{Cnom} = 100\text{ A}$		6		ns
t_r						ns
E_{on}	$R_{Goff} =$	$T_j = 150\text{ °C}$ $V_{GE} = \pm 15\text{ V}$		14		mJ
$t_{d(off)}$						ns
t_f						ns
E_{off}						mJ
$R_{th(j-s)}$	per IGBT		0,37			K/W

SKiiP 38AC12T4V1



MiniSKiiP^{®3}

3-phase bridge inverter

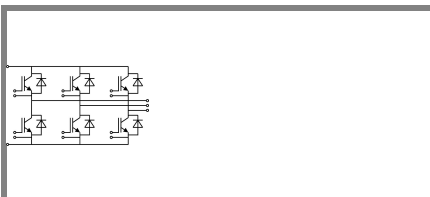
SKiiP 38AC12T4V1

Target Data

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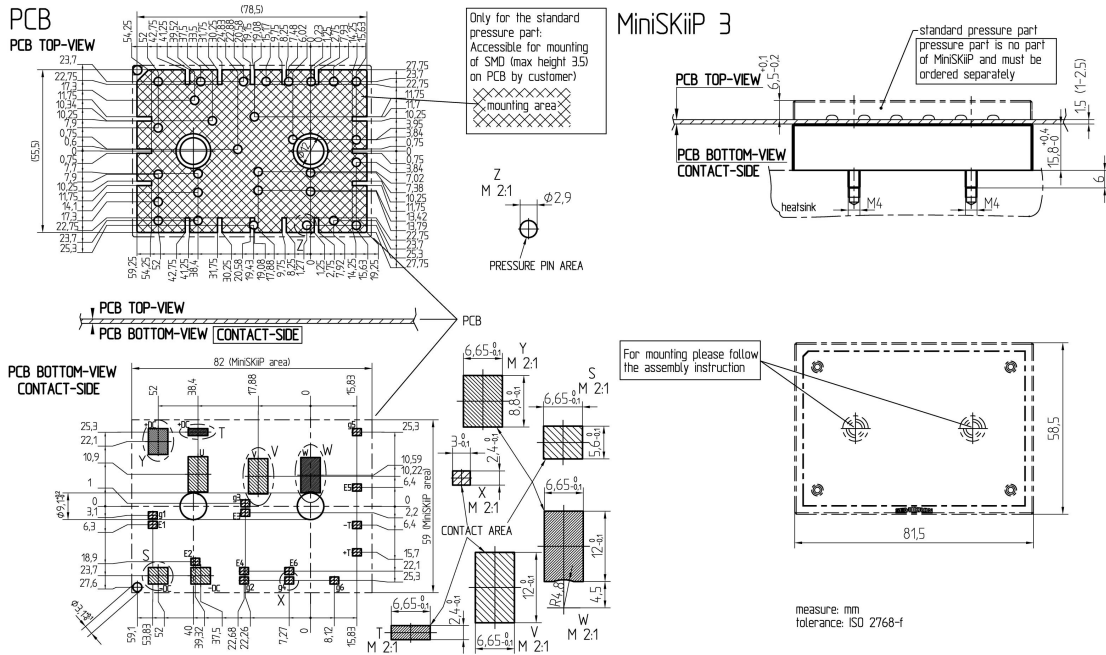


AC

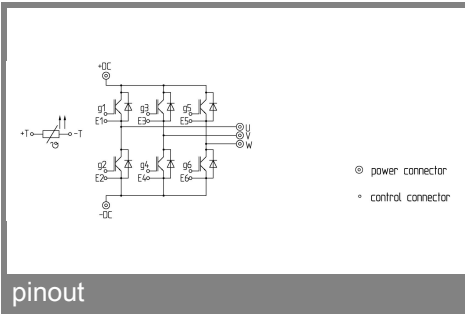
Characteristics					
Symbol	Conditions	min.	typ.	max.	Units
Inverse Diode					
$V_F = V_{EC}$	$I_{Fnom} = 100 \text{ A}; V_{GE} = 15 \text{ V}$				
	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$		2,2	2,5	V
	$T_j = 150 \text{ }^\circ\text{C}_{\text{chiplev.}}$		2,1	2,45	V
V_{F0}					
	$T_j = 25 \text{ }^\circ\text{C}$		1,3	1,5	V
	$T_j = 150 \text{ }^\circ\text{C}$		0,9	1,1	V
r_F					
	$T_j = 25 \text{ }^\circ\text{C}$		9	10	m Ω
	$T_j = 150 \text{ }^\circ\text{C}$		12	13,5	m Ω
I_{RRM}	$I_{Fnom} = 100 \text{ A}$				A
Q_{rr}					μC
E_{rr}	$V_{GE} = \pm 15 \text{ V}$		7,5		mJ
$R_{th(j-s)}$	per diode		0,62		K/W
M_s	to heat sink	2		2,5	Nm
w			95		g
Temperature sensor					
R_{ts}	3%, $T_r = 25 \text{ }^\circ\text{C}$		1000		Ω
R_{ts}	3%, $T_r = 100 \text{ }^\circ\text{C}$		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.



case



pinout