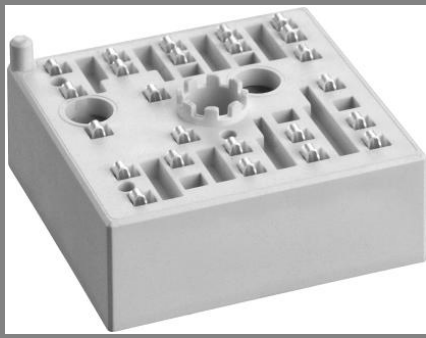


SKiiP 13AC12T4V1



MiniSKiiP®1

3-phase bridge inverter

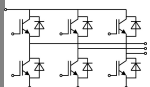
SKiiP 13AC12T4V1

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

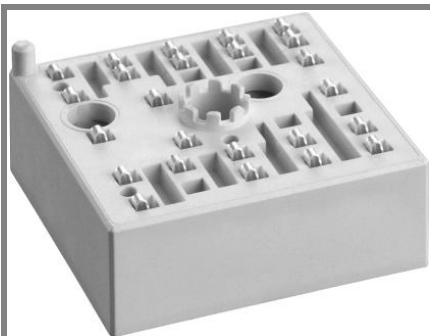


AC

Absolute Maximum Ratings		$T_c = 25\text{ }^\circ\text{C}$, unless otherwise specified		
Symbol	Conditions	Values		Units
IGBT				
V_{CES}	$T_j = 25\text{ }^\circ\text{C}$	1200		V
I_C	$T_j = 175\text{ }^\circ\text{C}$	$T_c = 25\text{ }^\circ\text{C}$	44	A
		$T_c = 70\text{ }^\circ\text{C}$	35	A
I_{CRM}	$I_{CRM} = 3xI_{Cnom}$	75		A
V_{GES}		± 20		V
t_{psc}	$V_{CC} = 600\text{ V}; V_{GE} \leq 20\text{ V}; T_j = 150\text{ }^\circ\text{C}$ $V_{CES} < 1200\text{ V}$	10		μs
Inverse Diode				
I_F	$T_j = 175\text{ }^\circ\text{C}$	$T_c = 25\text{ }^\circ\text{C}$	30	A
		$T_c = 70\text{ }^\circ\text{C}$	24	A
I_{FRM}	$I_{CRM} = 3xI_{Cnom}$	75		A
I_{FSM}	$t_p = 10\text{ ms}; \text{sin.}$	$T_j = 150\text{ }^\circ\text{C}$	100	A
Module				
$I_{t(RMS)}$		40		A
T_{vj}		-40...+175		$^\circ\text{C}$
T_{stg}		-40...+125		$^\circ\text{C}$
V_{isol}	AC, 1 min.	2500		V

Characteristics		$T_c = 25\text{ }^\circ\text{C}$, 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}	$V_{GE} = V, V_{CE} = V_{CES}, T_j = \text{ }^\circ\text{C}$				mA
V_{CE0}		$T_j = 25\text{ }^\circ\text{C}$	1,1	1,3	V
		$T_j = 150\text{ }^\circ\text{C}$	1	1,2	V
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$	30	30	$\text{m}\Omega$
		$T_j = 150\text{ }^\circ\text{C}$	50	50	$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 25\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ }^\circ\text{C}_{chiplev.}$	1,85	2,05	V
		$T_j = 150\text{ }^\circ\text{C}_{chiplev.}$	2,25	2,45	V
C_{res}	$V_{CE} = , V_{GE} = V$	$f = \text{MHz}$			nF
C_{oes}					nF
C_{res}					nF
R_{Gint}	$T_j = 25\text{ }^\circ\text{C}$	0		Ω	
$t_{d(on)}$	$R_{Gon} =$	$V_{CC} = 600\text{ V}$ $I_{Cnom} = 25\text{ A}$ $T_j = 150\text{ }^\circ\text{C}$	3		ns
t_r					ns
E_{on}	$R_{Goff} =$	$V_{GE} = \pm 15\text{ V}$	2		mJ
$t_{d(off)}$					ns
t_f					ns
E_{off}					mJ
$R_{th(j-s)}$	per IGBT	0,96		K/W	

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MiniSKiiP®1

3-phase bridge inverter

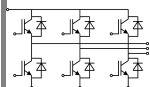
SKiiP 13AC12T4V1

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

Characteristics			min.	typ.	max.	Units
Symbol	Conditions					
Inverse Diode						
$V_F = V_{EC}$	$I_{Fnom} = 25 \text{ A}; V_{GE} = 0 \text{ V}$	$T_j = 25 \text{ }^\circ\text{C}_{\text{chiplev.}}$		2,4	2,75	V
		$T_j = 150 \text{ }^\circ\text{C}_{\text{chiplev.}}$		2,45	2,8	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		$T_j = 25 \text{ }^\circ\text{C}$		44	50	mΩ
		$T_j = 150 \text{ }^\circ\text{C}$		62	68	mΩ
I_{RRM}	$I_{Fnom} = \text{A}$	$T_j = 150 \text{ }^\circ\text{C}$				A
Q_{rr}						μC
E_{rr}	$V_{GE} = \pm 15 \text{ V}$			1,88		mJ
$R_{th(j-s)}$	per diode			1,7		K/W
M_s	to heat sink		2		2,5	Nm
w				35		g
Temperature sensor						
R_{ts}	3%, $T_r=25^\circ\text{C}$			1000		Ω
R_{ts}	3%, $T_r=100^\circ\text{C}$			1670		Ω

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

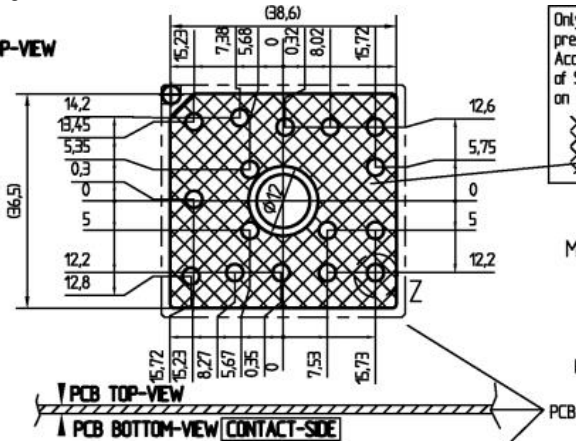
This technical information specifies semiconductor devices but promises no characteristics. No warranty or guarantee expressed or implied is made regarding delivery, performance or suitability.

SKiiP 13AC12T4V1

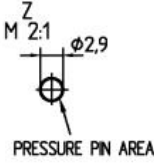
UL recognized file

no. E 63 532

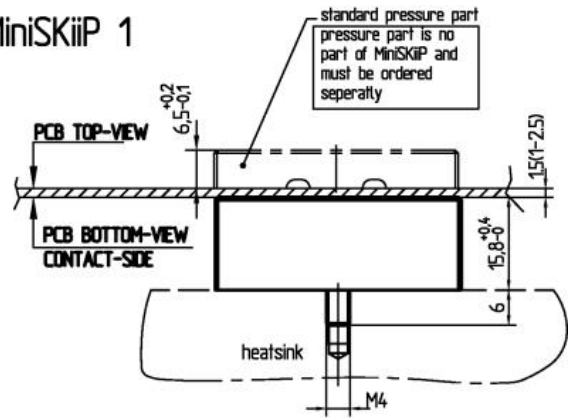
PCB PCB TOP-VIEW



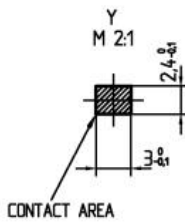
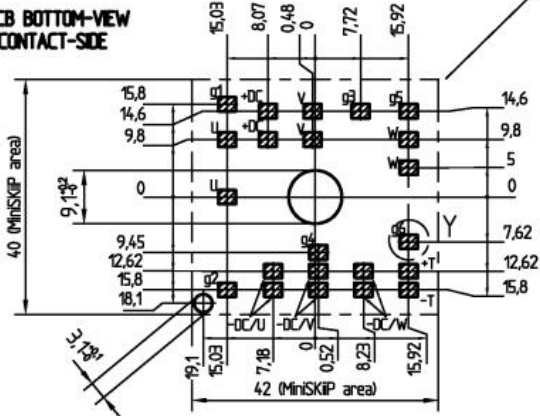
Only for the standard pressure part:
Accessible for mounting of SMD (max height 3.5) on PCB by customer



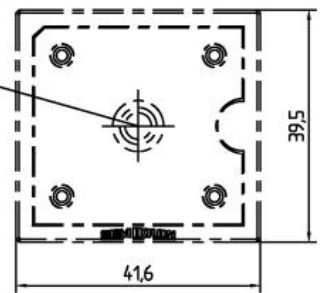
MiniSKiiP 1



PCB BOTTOM-VIEW CONTACT-SIDE

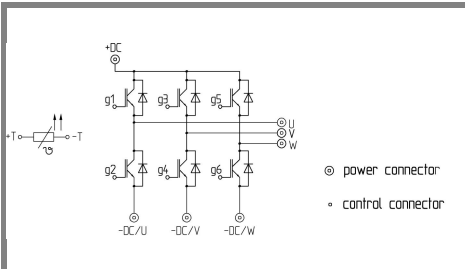


For mounting please follow the assembly instruction



measure: mm
tolerance: ISO 2768-f

case



pinout