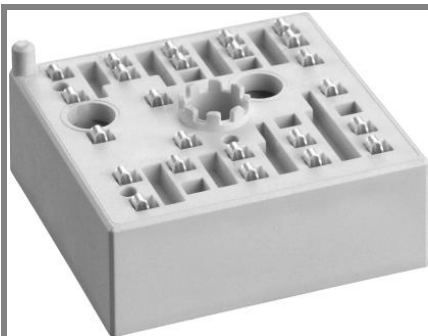


# SKiiP 13AC12T4V1



MiniSKiiP®1

## 3-phase bridge inverter

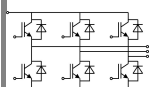
### SKiiP 13AC12T4V1

#### 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

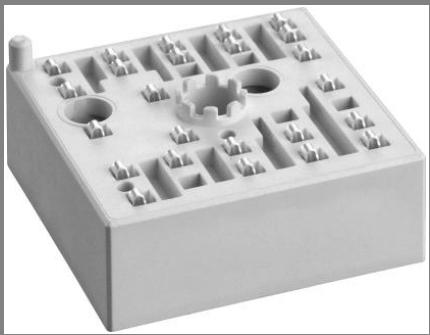


AC

Absolute Maximum Ratings			T <sub>c</sub> = 25 °C, unless otherwise specified	
Symbol	Conditions		Values	Units
IGBT				
V <sub>CES</sub>	T <sub>j</sub> = 25 °C		1200	V
I <sub>C</sub>	T <sub>j</sub> = 175 °C	T <sub>c</sub> = 25 °C	44	A
		T <sub>c</sub> = 70 °C	35	A
I <sub>CRM</sub>	I <sub>CRM</sub> = 3xI <sub>Cnom</sub>		75	A
V <sub>GES</sub>			±20	V
t <sub>psc</sub>	V <sub>CC</sub> = 600 V; V <sub>GE</sub> ≤ 20 V; T <sub>j</sub> = 150 °C V <sub>CES</sub> < 1200 V		10	μs
Inverse Diode				
I <sub>F</sub>	T <sub>j</sub> = 175 °C	T <sub>c</sub> = 25 °C	30	A
		T <sub>c</sub> = 70 °C	24	A
I <sub>FRM</sub>	I <sub>CRM</sub> = 3xI <sub>Cnom</sub>		75	A
I <sub>FSM</sub>	t <sub>p</sub> = 10 ms; sin.	T <sub>j</sub> = 150 °C	100	A
Module				
I <sub>t(RMS)</sub>			40	A
T <sub>vj</sub>			-40...+175	°C
T <sub>stg</sub>			-40...+125	°C
V <sub>isol</sub>	AC, 1 min.		2500	V

Characteristics			T <sub>c</sub> = 25 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V <sub>GE(th)</sub>	V <sub>GE</sub> = V <sub>CE</sub> , I <sub>C</sub> = mA		5	5,8	6,5	V
I <sub>CES</sub>	V <sub>GE</sub> = V, V <sub>CE</sub> = V <sub>CES</sub> T <sub>j</sub> = °C					mA
V <sub>CE0</sub>	T <sub>j</sub> = 25 °C			1,1	1,3	V
	T <sub>j</sub> = 150 °C			1	1,2	V
r <sub>CE</sub>	V <sub>GE</sub> = 15 V      T <sub>j</sub> = 25°C			30	30	mΩ
	T <sub>j</sub> = 150°C			50	50	mΩ
V <sub>CE(sat)</sub>	I <sub>Cnom</sub> = 25 A, V <sub>GE</sub> = 15 V      T <sub>j</sub> = 25°C <sub>chiplev.</sub>			1,85	2,05	V
	T <sub>j</sub> = 150°C <sub>chiplev.</sub>			2,25	2,45	V
C <sub>ies</sub>	V <sub>CE</sub> = , V <sub>GE</sub> = V      f = MHz					nF
C <sub>oes</sub>						nF
C <sub>res</sub>						nF
R <sub>Gint</sub>	T <sub>j</sub> = 25 °C		0			Ω
t <sub>d(on)</sub>	R <sub>Gon</sub> =	V <sub>CC</sub> = 600V I <sub>Cnom</sub> = 25A T <sub>j</sub> = 150 °C V <sub>GE</sub> = ±15V	3			ns
t <sub>r</sub>						ns
E <sub>on</sub>	2			mJ		
t <sub>d(off)</sub>				ns		
t <sub>f</sub>	ns					
E <sub>off</sub>	2			mJ		
R <sub>th(j-s)</sub>	per IGBT		0,96			K/W

# SKiiP 13AC12T4V1



MiniSKiiP®1

## 3-phase bridge inverter

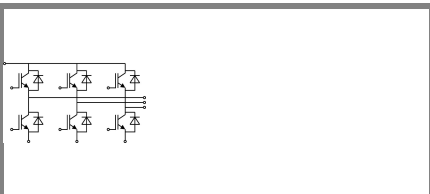
### SKiiP 13AC12T4V1

#### 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

Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V <sub>F</sub> = V <sub>EC</sub>	I <sub>Fnom</sub> = 25 A; V <sub>GE</sub> = 0 V	T <sub>j</sub> = 25 °C <sub>chiplev.</sub>		2,4	2,75	V
		T <sub>j</sub> = 150 °C <sub>chiplev.</sub>		2,45	2,8	V
V <sub>F0</sub>		T <sub>j</sub> = 25 °C		1,3	1,5	V
		T <sub>j</sub> = 150 °C		0,9	1,1	V
r <sub>F</sub>		T <sub>j</sub> = 25 °C		44	50	mΩ
		T <sub>j</sub> = 150 °C		62	68	mΩ
I <sub>RRM</sub>	I <sub>Fnom</sub> = A	T <sub>j</sub> = 150 °C				A
Q <sub>rr</sub>						μC
E <sub>rr</sub>	V <sub>GE</sub> = ±15V			1,88		mJ
R <sub>th(j-s)</sub>	per diode			1,7		K/W
M <sub>s</sub>	to heat sink		2		2,5	Nm
w				35		g
Temperature sensor						
R <sub>ts</sub>	3%, Tr=25°C			1000		Ω
R <sub>ts</sub>	3%, Tr=100°C			1670		Ω

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

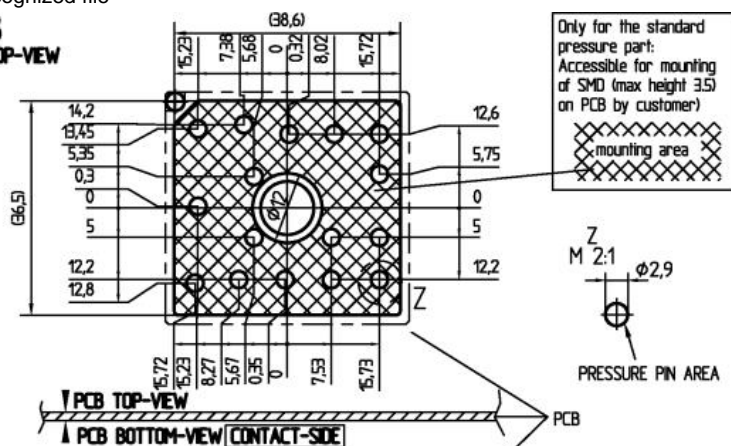
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# SKiiP 13AC12T4V1

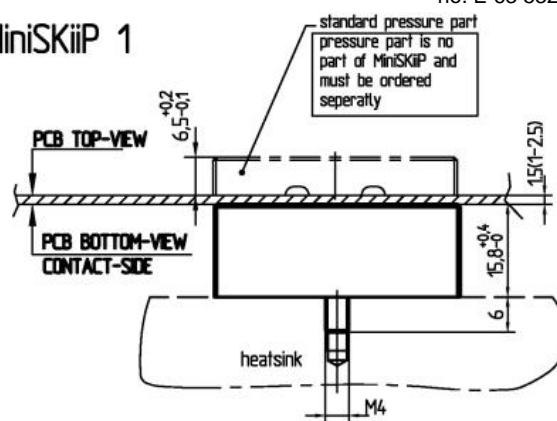
UL recognized file

no. E 63 532

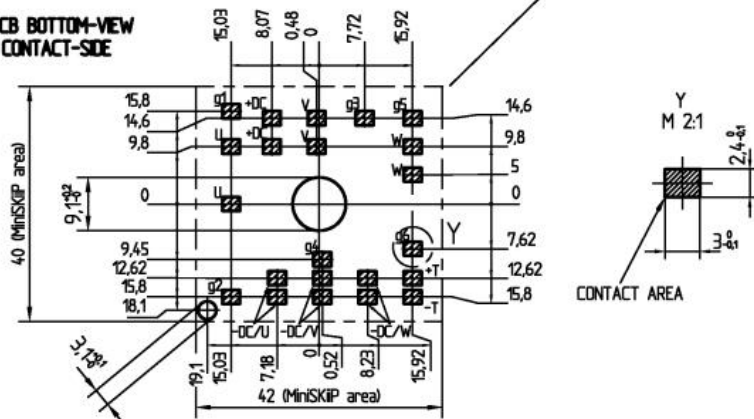
## PCB PCB TOP-VIEW



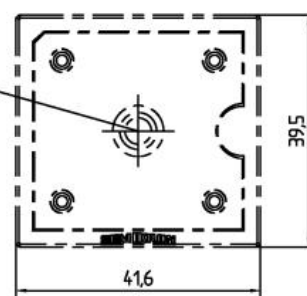
## MiniSKiiP 1



## PCB BOTTOM-VIEW CONTACT-SIDE



For mounting please follow the assembly instruction



measure: mm  
tolerance: ISO 2768-f

case

