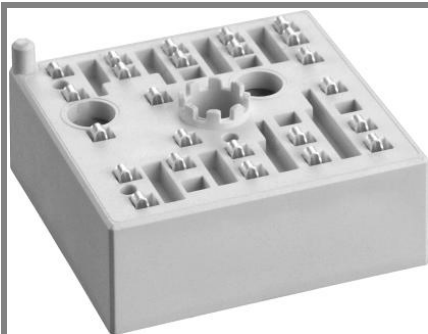


SKiiP 12AC12T4V1



MiniSKiiP®1

3-phase bridge inverter

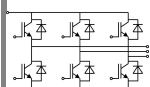
SKiiP 12AC12T4V1

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 °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	18	A
		T _c = 70 °C	18	A
I _{CRM}	I _{CRM} = 3xI _{Cnom}		45	A
V _{GES}			±20	V
t _{psc}	V _{CC} = 600 V; V _{GE} ≤ 20 V; T _j = 150 °C V _{CES} < 1200 V		10	μs
Inverse Diode				
I _F	T _j = 175 °C	T _c = 25 °C	22	A
		T _c = 70 °C	18	A
I _{FRM}	I _{CRM} = 3xI _{Cnom}		45	A
I _{FSM}	t _p = 10 ms; sin.	T _j = 25 °C	60	A
Module				
I _{t(RMS)}			40	A
T _{vj}			-40...+175	°C
T _{stg}			-40...+125	°C
V _{isol}	AC, 1 min.		2500	V

Characteristics			T _c = 25 °C, unless otherwise specified			
Symbol	Conditions		min.	typ.	max.	Units
IGBT						
V _{GE(th)}	V _{GE} = V _{CE} , I _C = 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			50	50	mΩ
	T _j = 150°C			83	83	mΩ
V _{CE(sat)}	I _{Cnom} = 15 A, V _{GE} = 15 V T _j = 25°C _{chiplev.}			1,85	2,05	V
	T _j = 150°C _{chiplev.}			2,25	2,45	V
C _{ies}	V _{CE} = , V _{GE} = V f = MHz					nF
C _{oes}						nF
C _{res}						nF
R _{Gint}	T _j = 25 °C		0			Ω
t _{d(on)}	R _{Gon} =	V _{CC} = 600V I _{Cnom} = 15A	1,8			ns
t _r						ns
E _{on}	R _{Goff} =	T _j = 150 °C V _{GE} = ±15V	1,2			mJ
t _{d(off)}						ns
t _f						ns
E _{off}						mJ
R _{th(j-s)}	per IGBT		1,22			K/W

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3-phase bridge inverter

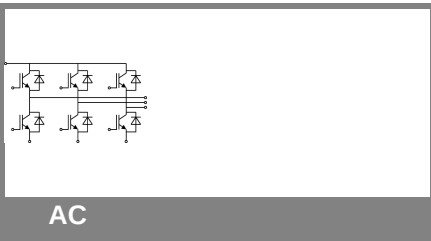
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Target Data

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



Characteristics						
Symbol	Conditions		min.	typ.	max.	Units
Inverse Diode						
V _F = V _{EC}	I _{Fnom} = 15 A; V _{GE} = 0 V	T _j = 25 °C _{chiplev.}		2,4	2,75	V
		T _j = 150 °C _{chiplev.}		2,45	2,8	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		73	83	mΩ
		T _j = 150 °C		103	113	mΩ
I _{RRM}	I _{Fnom} = 15 A	T _j = 150 °C				A
Q _{rr}						μC
E _{rr}	V _{GE} = ±15V			1,13		mJ
R _{th(j-s)}	per diode			2,02		K/W
M _s	to heat sink		2		2,5	Nm
w				35		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.

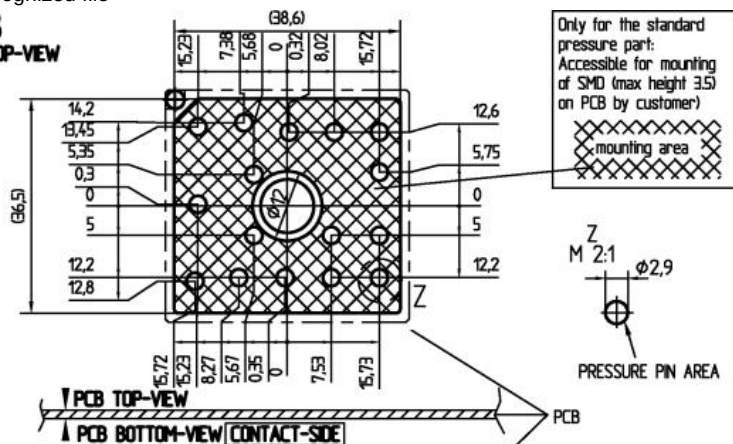
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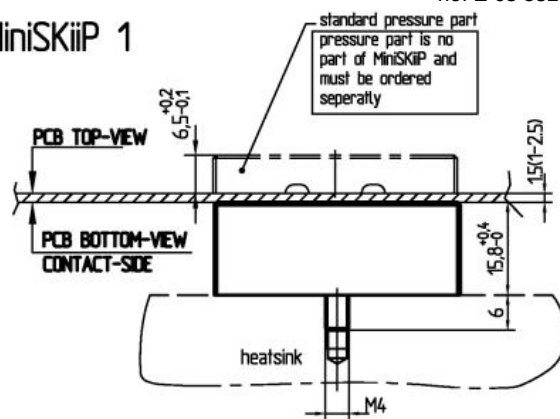
UL recognized file

no. E 63 532

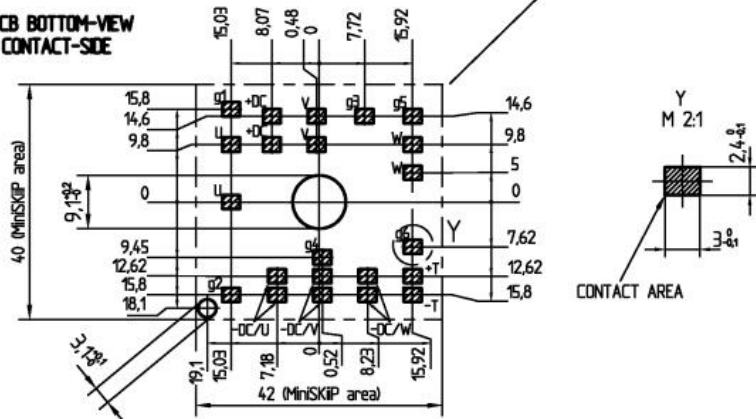
PCB PCB TOP-VIEW



MiniSKiiP 1



PCB BOTTOM-VIEW CONTACT-SIDE



case

