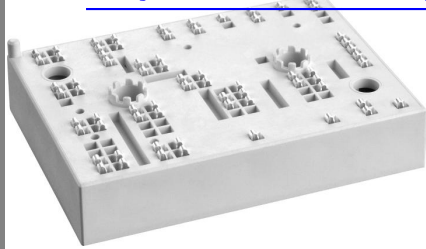


# SKiiP 38AC12T4V1

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MiniSKiiP<sup>®3</sup>

3-phase bridge inverter

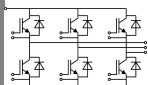
SKiiP 38AC12T4V1

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



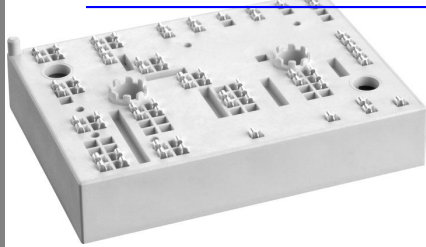
AC

Absolute Maximum Ratings		$T_s = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	Values			Units
<b>IGBT</b>					
$V_{CES}$	$T_j = 25\text{ °C}$	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
$V_{GES}$		$\pm 20$			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			$\mu\text{s}$
<b>Inverse Diode</b>					
$I_F$	$T_j = 175\text{ °C}$	$T_c = 25\text{ °C}$	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
<b>Module</b>					
$I_{t(RMS)}$		160			A
$T_{vj}$		-40...+150			$^{\circ}\text{C}$
$T_{stg}$		-40...+125			$^{\circ}\text{C}$
$V_{isol}$	AC, 1 min.	2500			V

Characteristics		$T_s = 25\text{ °C}$ , unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
<b>IGBT</b>					
$V_{GE(th)}$	$V_{GE} = V_{CE}, I_C = \text{mA}$	5	5,8	6,5	V
$I_{CES}$	$V_{GE} = V, V_{CE} = V_{CES}, T_j = \text{°C}$				mA
$V_{CE0}$		$T_j = 25\text{ °C}$	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	$\text{m}\Omega$
		$T_j = 150\text{ °C}$	12	12	$\text{m}\Omega$
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ °C}_{chiplev.}$	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		$\Omega$
$t_{d(on)}$	$R_{Gon} =$	$V_{CC} = V$ $I_{Cnom} = 100\text{ A}$ $T_j = 150\text{ °C}$ $V_{GE} = \pm 15\text{ V}$	6		ns
$t_r$					ns
$E_{on}$					mJ
$t_{d(off)}$	$R_{Goff} =$				ns
$t_f$					ns
$E_{off}$					mJ
$R_{th(j-s)}$	per IGBT		0,37		K/W

# SKiiP 38AC12T4V1

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MiniSKiiP<sup>®3</sup>

## 3-phase bridge inverter

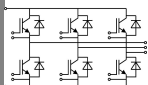
### SKiiP 38AC12T4V1

#### 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

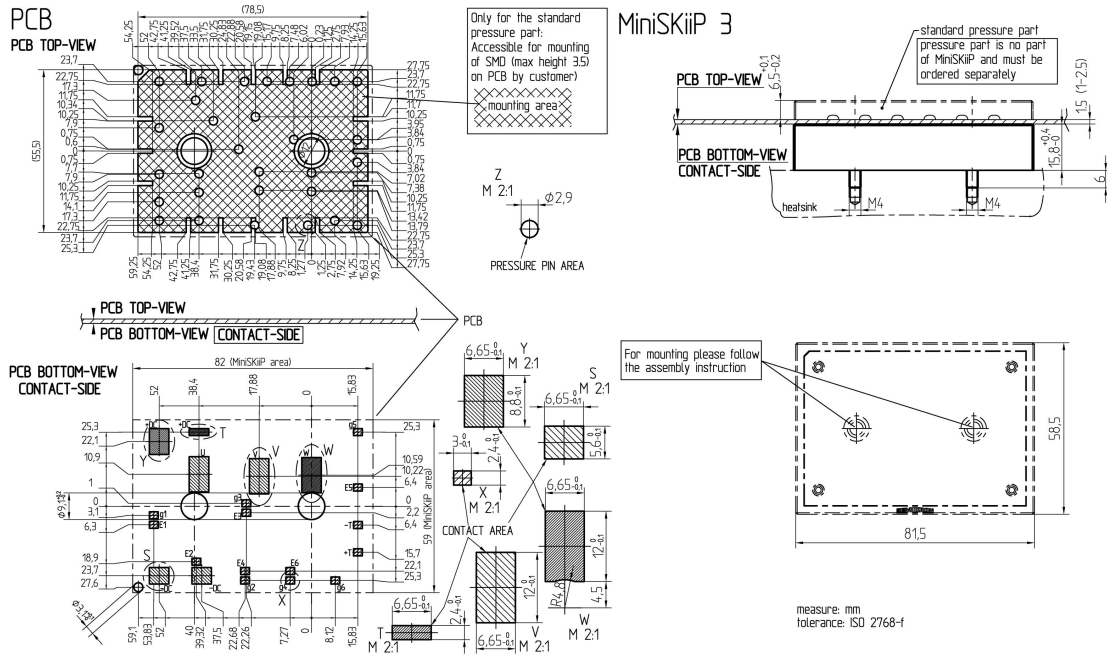


AC

Characteristics		min.	typ.	max.	Units
<b>Inverse Diode</b>					
$V_F = V_{EC}$	$I_{Fnom} = 100\text{ A}; V_{GE} = 15\text{ V}$		2,2	2,5	V
	$T_j = 25\text{ }^\circ\text{C}_{chiplev.}$				
	$T_j = 150\text{ }^\circ\text{C}_{chiplev.}$		2,1	2,45	V
$V_{F0}$			1,3	1,5	V
	$T_j = 25\text{ }^\circ\text{C}$				
	$T_j = 150\text{ }^\circ\text{C}$		0,9	1,1	V
$r_F$			9	10	mΩ
	$T_j = 25\text{ }^\circ\text{C}$				
	$T_j = 150\text{ }^\circ\text{C}$		12	13,5	mΩ
$I_{RRM}$	$I_{Fnom} = 100\text{ A}$				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
<b>Temperature sensor</b>					
$R_{ts}$	3%, $T_r = 25\text{ }^\circ\text{C}$		1000		Ω
$R_{ts}$	3%, $T_r = 100\text{ }^\circ\text{C}$		1670		Ω

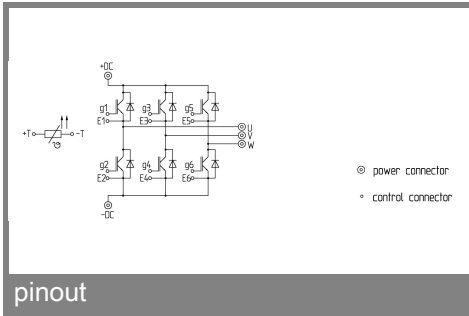
This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX.

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## case



## pinout