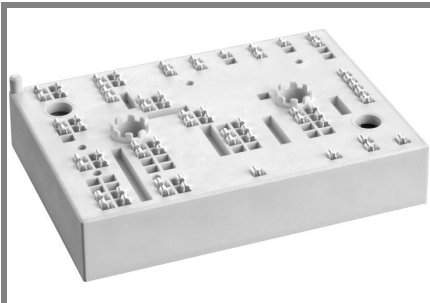


SKiiP 38AC12T4V1



MiniSKiiP^{®3}

3-phase bridge inverter

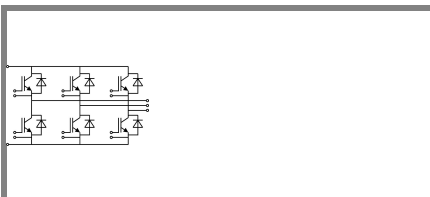
SKiiP 38AC12T4V1

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

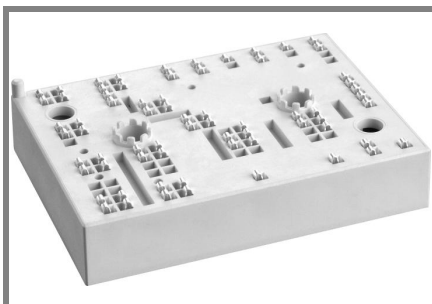


AC

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

Characteristics		$T_s = 25\text{ }^\circ\text{C}$, 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
		$T_j = 150\text{ }^\circ\text{C}$	1		1,2
r_{CE}	$V_{GE} = 15\text{ V}$	$T_j = 25\text{ }^\circ\text{C}$	7		7
		$T_j = 150\text{ }^\circ\text{C}$	12		12
$V_{CE(sat)}$	$I_{Cnom} = 100\text{ A}, V_{GE} = 15\text{ V}$	$T_j = 25\text{ }^\circ\text{C}_{chiplev.}$	1,8		2
		$T_j = 150\text{ }^\circ\text{C}_{chiplev.}$	2,2		2,4
C_{ies}	$V_{CE} = , V_{GE} = V$	$f = \text{MHz}$			nF
C_{oes}					nF
C_{res}					nF
R_{Gint}	$T_j = 25\text{ }^\circ\text{C}$	7,5			Ω
$t_{d(on)}$	$R_{Gon} =$	$V_{CC} = V$ $I_{Cnom} = 100\text{ A}$ $T_j = 150\text{ }^\circ\text{C}$	6		ns
t_r					ns
E_{on}	$R_{Goff} =$	$V_{GE} = \pm 15\text{ V}$	14		mJ
$t_{d(off)}$					ns
t_f					ns
E_{off}			14		mJ
$R_{th(j-s)}$	per IGBT	0,37			K/W

SKiiP 38AC12T4V1



MiniSKiiP^{®3}

3-phase bridge inverter

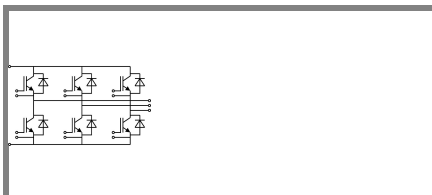
SKiiP 38AC12T4V1

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

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	mΩ
	$T_j = 150 \text{ }^\circ\text{C}$		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
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.

