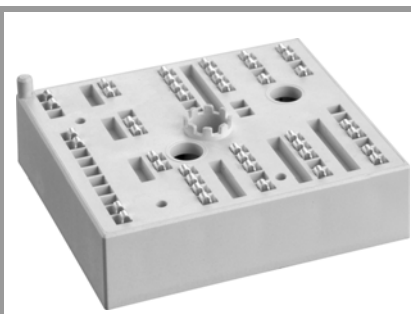




MiniSKiIP® 2

SKiIP 26ACM12V17

Target Data

Features

- SiC MOSFETs
- SiC Schottky Diodes
- Highly reliable spring contacts for electrical connections

Remarks

- Max. case temperature limited to $T_C = 125^\circ\text{C}$
- Recommended $T_{j,op} = -40 \dots +150^\circ\text{C}$ for Inverse Diode, $T_{j,op} = -40 \dots +125^\circ\text{C}$ for MOSFET

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
MOSFET			
V_{DS}		1200	V
I_D	$T_j = 175^\circ\text{C}$	$T_s = 25^\circ\text{C}$ $T_s = 70^\circ\text{C}$	A
I_{DM}		320	A
V_{GS}		-6 ... 22	V
T_j		-40 ... 175	$^\circ\text{C}$
Integrated MOS-diode			
I_{FM}			A

Absolute Maximum Ratings

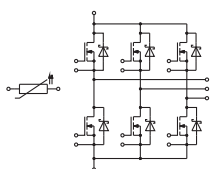
Symbol	Conditions	Values	Unit
Diode 1			
V_{RRM}	$T_j = 25^\circ\text{C}$	1200	V
I_F	$T_j = 175^\circ\text{C}$	$T_s = 25^\circ\text{C}$ $T_s = 70^\circ\text{C}$	A
I_{Fnom}		50	A
I_{FRM}		164	A
I_{FSM}	8.3 ms sin 180°	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	A
T_j		-40 ... 175	$^\circ\text{C}$

Absolute Maximum Ratings

Symbol	Conditions	Values	Unit
Module			
$I_{t(RMS)}$	$T_{terminal} = 80^\circ\text{C}$, 20 A per spring	100	A
T_{stg}		-40 ... 125	$^\circ\text{C}$
V_{isol}	AC sinus 50 Hz, $t = 1$ min	2500	V

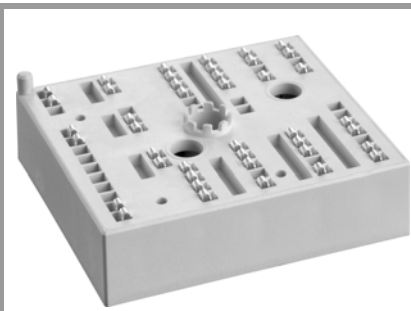
Characteristics

Symbol	Conditions	min.	typ.	max.	Unit
Diode 1					
$V_F = V_{EC}$	$I_F = 50$ A $V_{GE} = 0$ V chiplevel	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	1.40 1.80	1.60 2.20	V
V_{F0}	chiplevel	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	0.95 0.80	1.05 0.90	V
r_F	chiplevel	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$	9.0 20	11 26	m Ω
Q_c	$V_R = 800$ V, $T_j = 25^\circ\text{C}$	0.167			μC
$R_{th(j-s)}$	per Diode, $\lambda_{paste} = 0.8$ W/(K*m)	0.9			K/W



ACM

SKiiP 26ACM12V17



MiniSKiiP® 2

SKiiP 26ACM12V17

Target Data

Features

- SiC MOSFETs
- SiC Schottky Diodes
- Highly reliable spring contacts for electrical connections

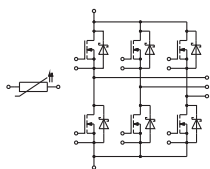
Remarks

- Max. case temperature limited to $T_C = 125^\circ\text{C}$
- Recommended $T_{j,op} = -40 \dots +150^\circ\text{C}$ for Inverse Diode, $T_{j,op} = -40 \dots +125^\circ\text{C}$ for MOSFET

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
MOSFET					
$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = 2\text{ mA}$	1200			V
$V_{GS(th)}$	$V_{DS} = V_{GS}$ $I_D = 17.8\text{ mA}$	1.6		4	V
I_{DSS}	$V_{GS} = 0\text{ V}, V_{DS} = 1200, T_j = 25^\circ\text{C}$			1	mA
I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = 22\text{ V}$			200	nA
$R_{DS(on)}$	$V_{GS} = 18\text{ V}$ $I_D = 22\text{ A}$		23	28	mΩ
	$T_j = 25^\circ\text{C}$ $T_j = 150^\circ\text{C}$		39		mΩ
C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = 800\text{ V}, f = 1\text{ MHz}$		8620		pF
C_{oss}	$V_{GS} = 0\text{ V}, V_{DS} = 800\text{ V}, f = 1\text{ MHz}$		274		pF
C_{rss}	$V_{GS} = 0\text{ V}, V_{DS} = 800\text{ V}, f = 1\text{ MHz}$		38		pF
R_{Gint}	$T_j = 25^\circ\text{C}$		2.4		Ω
Q_G	$V_{GS} = 18\text{ V}$		378		nC
$t_{d(on)}$	$V_{DD} = 600\text{ V}$ $T_j = 150^\circ\text{C}$				ns
$t_{d(off)}$	$V_{GS} = 20\text{ V}$ $T_j = 150^\circ\text{C}$				ns
t_r	$I_D = 85\text{ A}$ $T_j = 150^\circ\text{C}$				ns
t_f	$T_j = 150^\circ\text{C}$				ns
E_{on}	$T_j = 150^\circ\text{C}$		3.3		mJ
E_{off}	$T_j = 150^\circ\text{C}$		1.4		mJ
$R_{th(j-s)}$	per MOSFET, $\lambda_{paste} = 0.8\text{ W/(K}\cdot\text{m)}$		0.6		K/W

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Module					
M_s	to heat sink	2		2.5	Nm
w	weight		55		g

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Temperature Sensor					
R_{100}	$T_r = 100^\circ\text{C}$ ($R_{25} = 1000\Omega$)		1670 ± 3%		Ω
$R(T)$	$R(T) = 1000\Omega[1 + A(T - 25^\circ\text{C}) + B(T - 25^\circ\text{C})^2]$], $A = 7.635 \cdot 10^{-3} \text{ }^\circ\text{C}^{-1}$, $B = 1.731 \cdot 10^{-5} \text{ }^\circ\text{C}^{-2}$				



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* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.