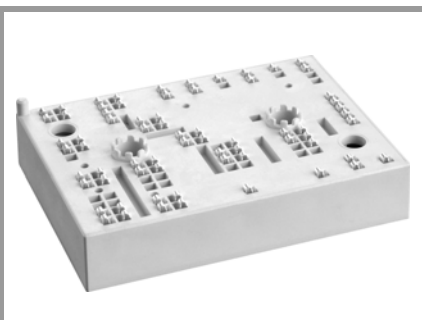


SKiiP 39AN16V1



MiniSKiiP® 3

3-phase bridge rectifier

SKiiP 39AN16V1

Features*

- NEW SKR PEP diode-technology for enhanced power and environmental robustness
- Highly reliable spring contacts for electrical connections
- UL recognized: File no. E63532

Remarks

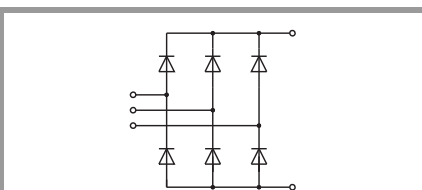
- Max. case temperature limited to $T_C=125^\circ\text{C}$
- Product reliability results valid for $T_j \leq 150^\circ\text{C}$ (recommended $T_{j,op} = -40 \dots +150^\circ\text{C}$)
- MiniSKiiP "Technical Explanations" and "Mounting Instructions" are part of the data sheet. Please refer to both documents for further information.
- For storage and case temperature with TIM see document: "Technical Explanations Thermal Interface Materials"

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Diode 1				
V_{RRM}	$T_j = 25^\circ\text{C}$		1600	V
I_F	$\lambda_{paste}=0.8 \text{ W/(mK)}$	$T_s = 25^\circ\text{C}$	365	A
		$T_s = 70^\circ\text{C}$	277	A
I_F	$\lambda_{paste}=2.5 \text{ W/(mK)}$	$T_s = 25^\circ\text{C}$	467	A
		$T_s = 70^\circ\text{C}$	358	A
I_{FSM}	10 ms, sin 180°, $T_j = 150^\circ\text{C}$		2300	A
i^2t	10 ms, sin 180°, $T_j = 150^\circ\text{C}$		26450	A^2s
T_j			-40 ... 175	$^\circ\text{C}$

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Module				
$I_{t(RMS)}$	20 A per spring		200	A
T_{stg}	module without TIM		-40 ... 125	$^\circ\text{C}$
V_{isol}	AC sinus 50 Hz, $t = 1 \text{ min}$		2500	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Diode 1						
V_F	$I_F = 154 \text{ A}$ $V_{GE} = 0 \text{ V}$ chiplevel	$T_j = 25^\circ\text{C}$		0.97	1.20	V
		$T_j = 150^\circ\text{C}$		0.84	1.07	V
V_{F0}	chiplevel	$T_j = 25^\circ\text{C}$		0.89	1.09	V
		$T_j = 150^\circ\text{C}$		0.73	0.92	V
r_F	chiplevel	$T_j = 25^\circ\text{C}$		0.53	0.71	$\text{m}\Omega$
		$T_j = 150^\circ\text{C}$		0.74	1.00	$\text{m}\Omega$
I_R	$T_j = 150^\circ\text{C}$, V_{RRM}				6	mA
$R_{th(j-s)}$	per Diode, $\lambda_{paste}=0.8 \text{ W/(mK)}$			0.32		K/W
$R_{th(j-s)}$	per Diode, $\lambda_{paste}=2.5 \text{ W/(mK)}$			0.23		K/W

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Module						
M_s	to heat sink		2		2.5	Nm
w	weight			82		g



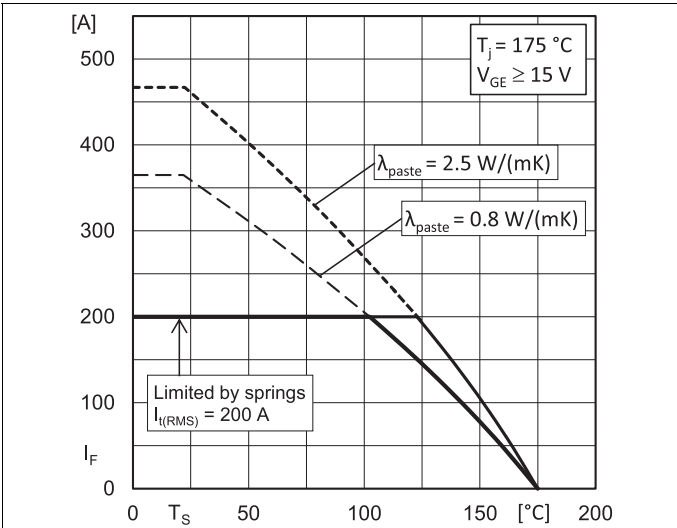


Fig. 1: Typ. rated current vs. temperature $I_F = f(T_s)$

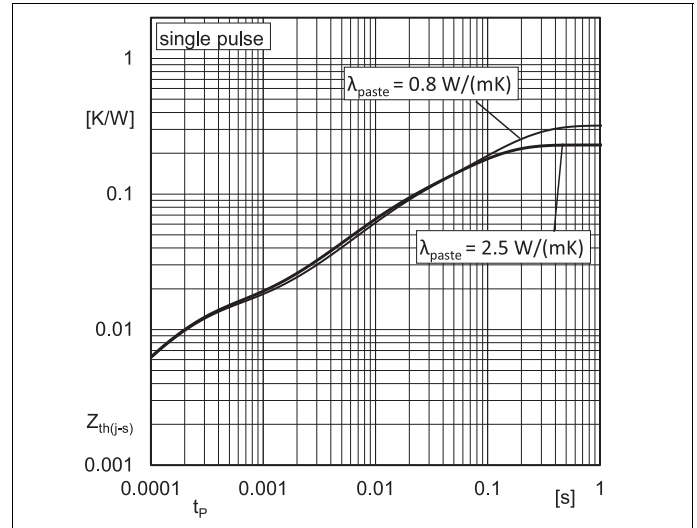


Fig. 2: Typ. transient thermal impedance

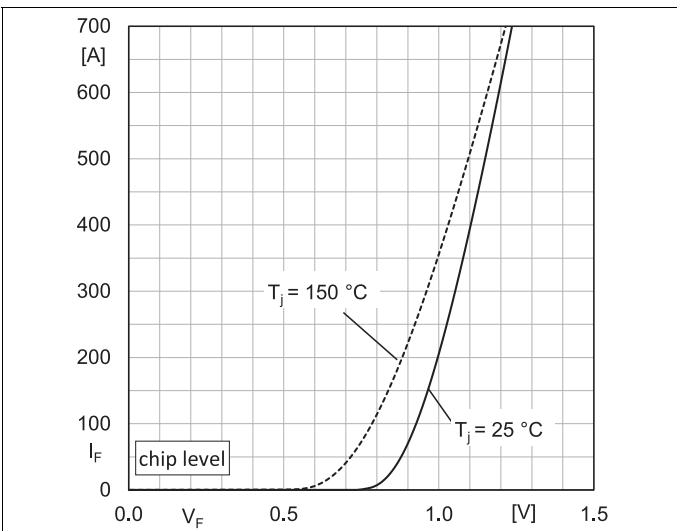
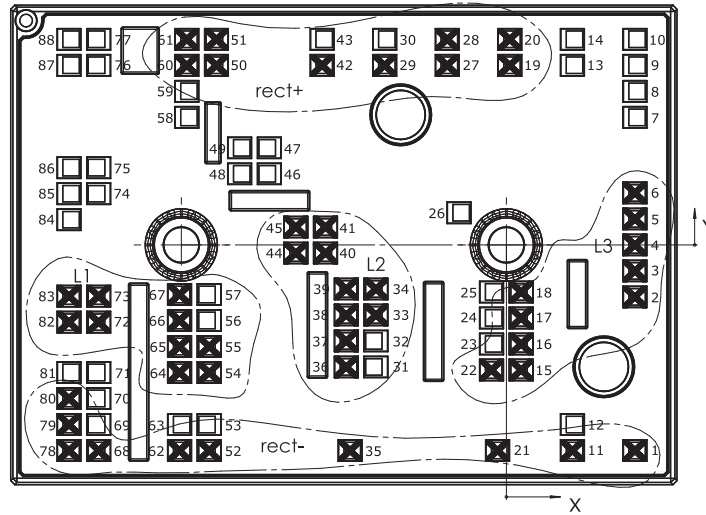


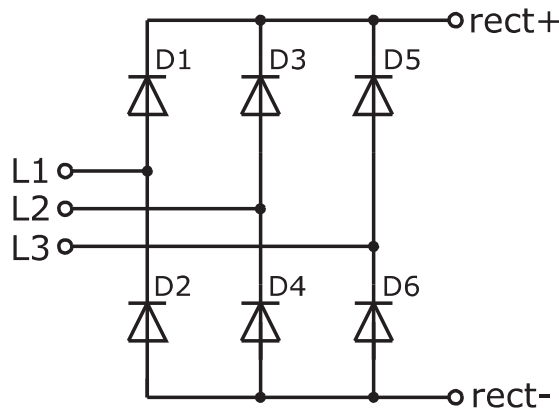
Fig. 3: Typ. input bridge forward characteristic

Pin out											
Pin	X	Y	Function	Pin	X	Y	Function	Pin	X	Y	Function
1	15,83	-25,30	rect-	31	-16,05	-15,02		61	-39,33	25,30	rect+
2	15,83	-6,40	L3	32	-16,05	-11,82		62	-40,23	-25,30	rect-
3	15,83	-3,20	L3	33	-16,05	-8,62	L2	63	-40,23	-22,10	
4	15,83	0	L3	34	-16,05	-5,42	L2	64	-40,23	-15,70	L1
5	15,83	3,20	L3	35	-19,23	-25,30	rect-	65	-40,23	-12,50	L1
6	15,83	6,40	L3	36	-19,70	-15,02	L2	66	-40,23	-9,30	L1
7	15,83	15,70		37	-19,70	-11,82	L2	67	-40,23	-6,10	L1
8	15,83	18,90		38	-19,70	-8,62	L2	68	-50,18	-25,30	rect-
9	15,83	22,10		39	-19,70	-5,42	L2	69	-50,18	-22,10	
10	15,83	25,30		40	-22,26	-1,00	L2	70	-50,18	-18,90	
11	8,13	-25,30	rect-	41	-22,26	2,20	L2	71	-50,18	-15,70	
12	8,13	-22,10		42	-22,68	22,10	rect+	72	-50,18	-9,50	L1
13	8,13	-22,10		43	-22,68	25,30		73	-50,18	-6,30	L1
14	8,13	25,30		44	-25,91	-1,00	L2	74	-50,18	6,30	
15	1,83	-15,39	L3	45	-25,91	2,20	L2	75	-50,18	9,50	
16	1,83	-12,19	L3	46	-29,18	8,74		76	-50,18	22,10	
17	1,83	-8,99	L3	47	-29,18	11,94		77	-50,18	25,30	
18	1,83	-5,79	L3	48	-32,83	8,74		78	-53,83	-25,30	rect-
19	0,43	22,10	rect+	49	-32,83	11,94		79	-53,83	-22,10	rect-
20	0,43	25,30	rect+	50	-35,68	22,10	rect+	80	-53,83	-18,90	rect-
21	-1,08	-25,30	rect-	51	-35,68	25,30	rect+	81	-53,83	-15,70	
22	-1,83	-15,39	L3	52	-36,58	-25,30	rect-	82	-53,83	-9,50	L1
23	-1,83	-12,19		53	-36,58	-22,10		83	-53,83	-6,30	L1
24	-1,83	-8,99		54	-36,58	-15,70	L1	84	-53,83	3,10	
25	-1,83	-5,79		55	-36,58	-12,50	L1	85	-53,83	6,30	
26	-5,83	3,95		56	-36,58	-9,30		86	-53,83	9,50	
27	-7,28	22,10	rect+	57	-36,58	-6,10		87	-53,83	22,10	
28	-7,28	25,30	rect+	58	-39,33	15,70		88	-53,83	25,30	
29	-14,98	22,10	rect+	59	-39,33	18,90					
30	-14,98	25,30		60	-39,33	22,10	rect+				

all values in mm



Pinout and Dimensions



Pinout

This is an electrostatic discharge sensitive device (ESDS) due to international standard IEC 61340.

***IMPORTANT INFORMATION AND WARNINGS**

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