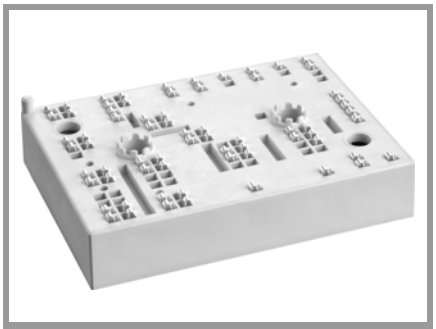
SKiiP 39AN22V1



MiniSKiiP® 3

3-phase bridge rectifier

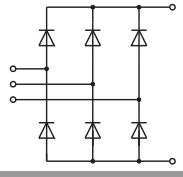
SKiiP 39AN22V1

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°C
- Product reliability results valid for T_j≤150°C (recommended $T_{j,op}$=-40...+150°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 °C		2200	V
I_F	λ_{paste}=0.8 W/(mK) T_j = 150 °C	T_s = 25 °C	323	A
		T_s = 70 °C	229	A
I_F	λ_{paste}=2.5 W/(mK) T_j = 150 °C	T_s = 25 °C	411	A
		T_s = 70 °C	296	A
I_{FSM}	10 ms, sin 180°, T_j = 150 °C		2000	A
i^2t	10 ms, sin 180°, T_j = 150 °C		20000	A^2s
T_j			-40 ... 150	°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	°C
V_{isol}	AC sinus 50 Hz, t = 1 min	2500	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
Diode 1						
V_F	I_F = 149 A V_{GE} = 0 V chiplevel	T_j = 25 °C		1.00	1.10	V
		T_j = 125 °C		0.91	1.01	V
V_{F0}	chiplevel	T_j = 25 °C		0.90	0.97	V
		T_j = 125 °C		0.78	0.83	V
r_F	chiplevel	T_j = 25 °C		0.67	0.91	mΩ
		T_j = 125 °C		0.87	1.18	mΩ
I_R	T_j = 150 °C, V_{RRM}				9	mA
$R_{th(j-s)}$	per Diode, λ_{paste}=0.8 W/(mK)			0.32		K/W
$R_{th(j-s)}$	per Diode, λ_{paste}=2.5 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

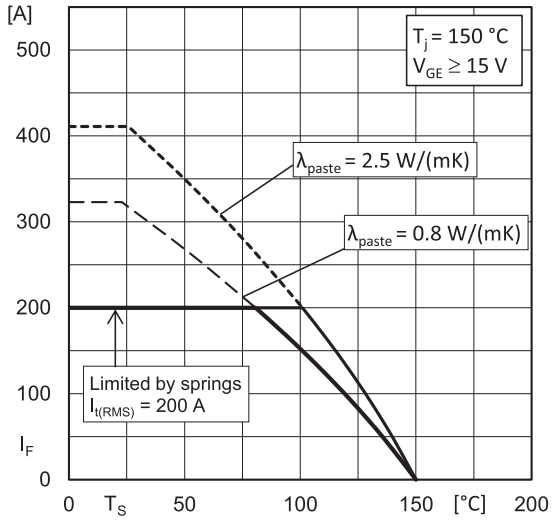


Fig. 1: Typ. rated current vs. temperature $I_F = f(T_S)$

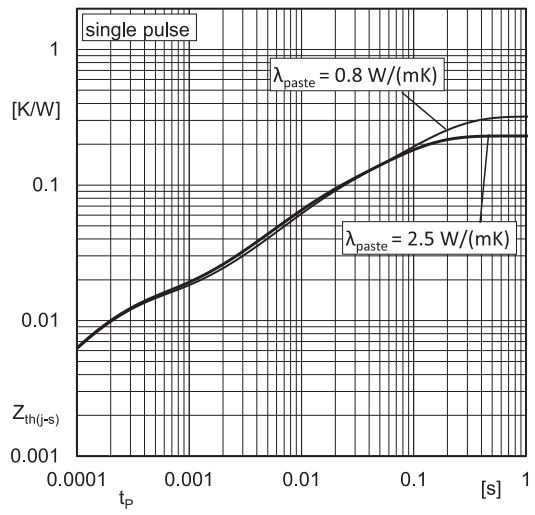


Fig. 2: Typ. transient thermal impedance

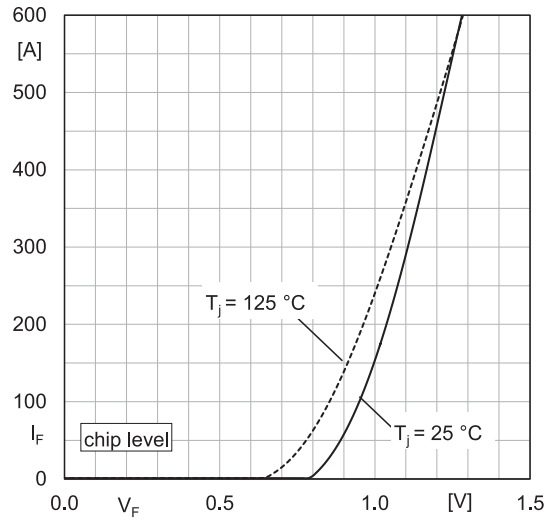
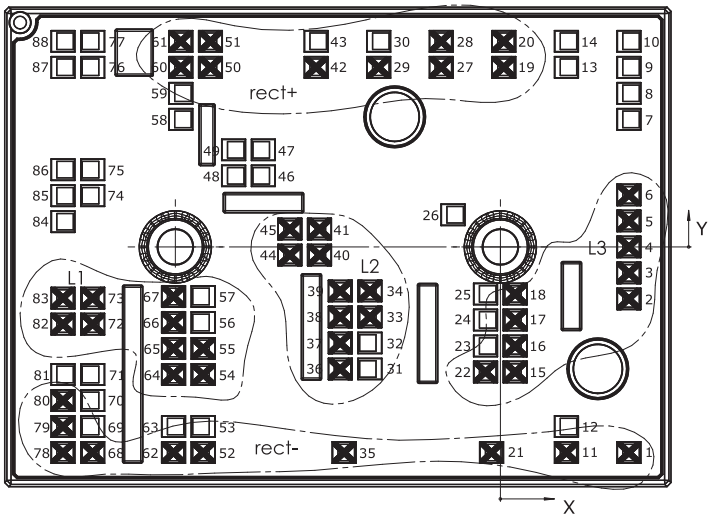


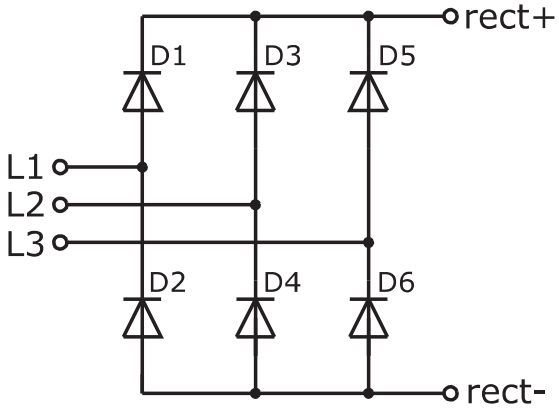
Fig. 3: Typ. input bridge forward characteristic

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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