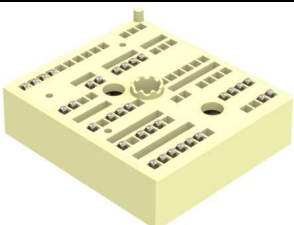
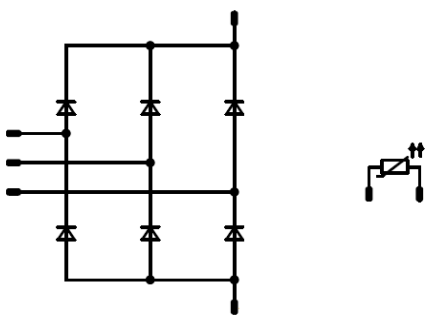




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MiniSkiiP <sup>®</sup> CON 2	1600 V / 75 A
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Features</b></div> <ul style="list-style-type: none"> <li>3-phase rectifier</li> <li>Thermal sensor integrated</li> </ul>	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>MiniSkiiP<sup>®</sup> 2 housing</b></div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Target applications</b></div> <ul style="list-style-type: none"> <li>Industrial Drives</li> </ul>	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Schematic</b></div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Types</b></div> <ul style="list-style-type: none"> <li>80-M2166RA075RJ-K738H10</li> </ul>	

## Maximum Ratings

$T_j = 25\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
<b>Rectifier Diode</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		1600	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	79	A
Surge (non-repetitive) forward current	$I_{FSM}$	50 Hz Single Half Sine Wave $t_p = 10\text{ ms}$ 50 Hz sine $T_j = 150\text{ °C}$	890	A
Surge current capability	$I^2t$		3960	A <sup>2</sup> s
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	101	W
Maximum Junction Temperature	$T_{jmax}$		150	°C



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## Maximum Ratings

$T_j = 25\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
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### Module Properties

#### Thermal Properties

Storage temperature	$T_{stg}$		-40...+125	°C
Operation temperature under switching condition	$T_{jop}$		-40...(T <sub>jmax</sub> - 25)	°C

#### Isolation Properties

Isolation voltage	$V_{isol}$	DC Test Voltage $t_p = 2\text{ s}$	4000	V
Creepage distance			min. 12,7	mm
Clearance			min. 12,7	mm
Comparative Tracking Index	CTI		> 200	



## Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
		$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$I_D$ [A]	$T_j$ [°C]	Min	Typ	Max	

### Rectifier Diode

#### Static

Forward voltage	$V_F$				60	25 150		1,17 1,15	1,5	V
Reverse leakage current	$I_r$			1600		25 150			100 2000	μA

#### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50 μm $\lambda = 1$ W/mK						0,69		K/W
-------------------------------------	---------------	--	--	--	--	--	--	------	--	-----

### Thermistor

Rated resistance	$R$					25		1		kΩ
Deviation of $R_{100}$	$\Delta_{R/R}$	$R_{100} = 1670 \Omega$				100	-2		+2	%
$R_{100}$	$R$					100		1670		Ω
Power dissipation constant						25		0,76		mW/K
A-value	$A_{(25/50)}$					25		$7,635 \cdot 10^{-3}$		1/K
B-value	$B_{(25/100)}$					25		$1,731 \cdot 10^{-5}$		1/K <sup>2</sup>
Vincotech PTC Reference									E	

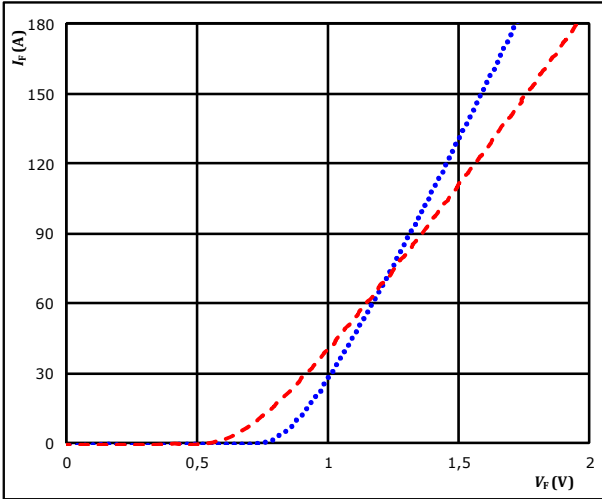


## Rectifier Diode Characteristics

**figure 1.** Rectifier Diode

**Typical forward characteristics**

$I_F = f(V_F)$

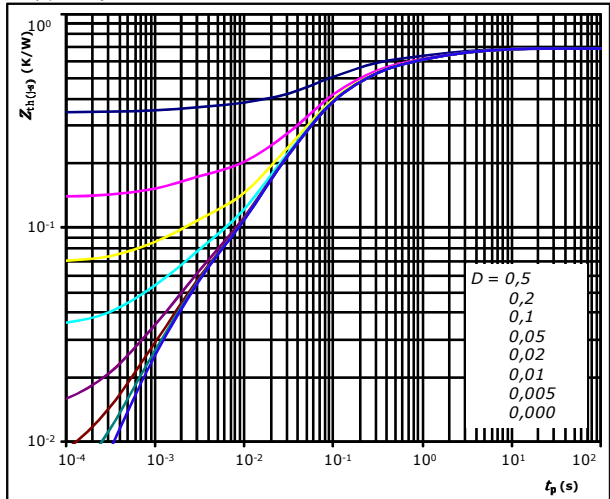


$t_p = 250 \mu s$   
 $T_j: 25 \text{ }^\circ\text{C}$  (blue dotted line)  
 $150 \text{ }^\circ\text{C}$  (red dashed line)

**figure 2.** Rectifier Diode

**Transient thermal impedance as a function of pulse width**

$Z_{th(j-s)} = f(t_p)$



$D = t_p / T$   
 $R_{th(j-s)} = 0,69 \text{ K/W}$

Diode thermal model values

$R$ (K/W)	$\tau$ (s)
5,72E-02	4,29E+00
1,35E-01	7,26E-01
2,61E-01	1,21E-01
1,98E-01	3,68E-02
3,87E-02	1,66E-03

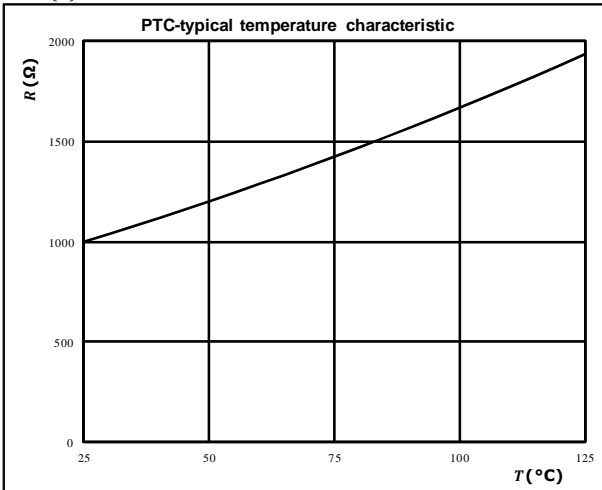


## Thermistor Characteristics

**figure 1.** Thermistor

**Typical PTC characteristic  
as a function of temperature**

$$R = f(T)$$

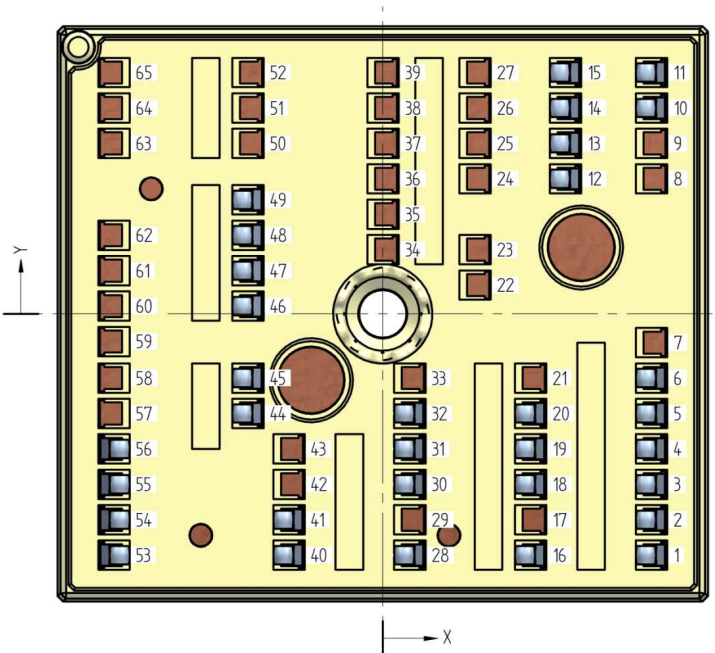




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Ordering Code & Marking							
Version			Ordering Code				
with std lid (black V23990-K22-T-2-PM) without thermal paste			80-M2166RA075RJ-K738H10-/0A/				
	Text	Name		Date code	UL & VIN	Lot	Serial
		NN-NNNNNNNNNNNNNNNN-TTTTUVV		WWYY	UL VIN	LLLLL	SSSS
		Datamatrix	Type&Ver	Lot number	Serial	Date code	
		TTTTTUVV	LLLLL	SSSS	WWYY		

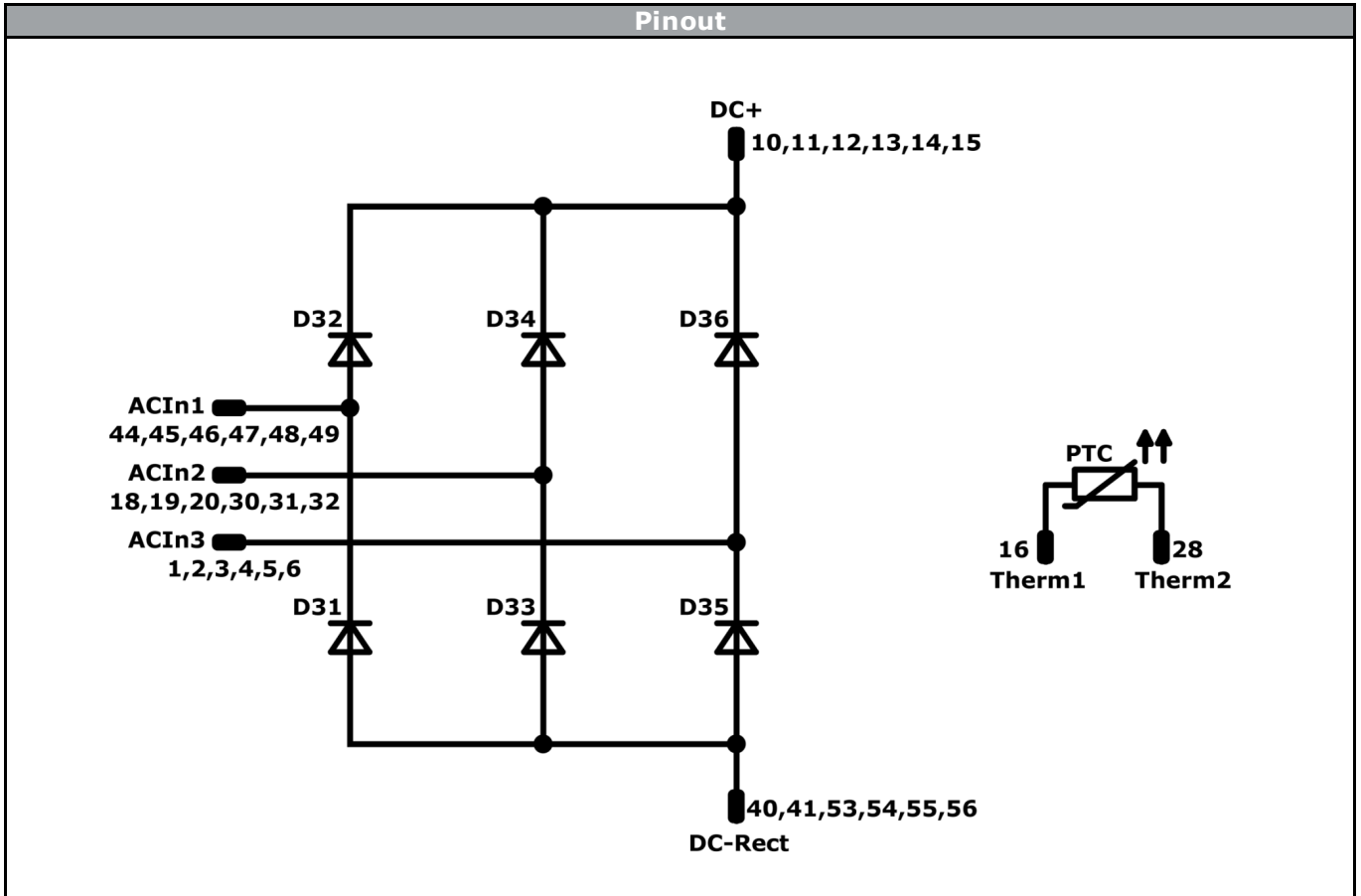
Outline							
Pin table [mm]				Pin table [mm]			
Pin	X	Y	Function	Pin	X	Y	Function
1	24,38	-21,8	ACIn3	34			Not assembled
2	24,38	-18,6	ACIn3	35			Not assembled
3	24,38	-15,4	ACIn3	36			Not assembled
4	24,38	-12,2	ACIn3	37			Not assembled
5	24,38	-9	ACIn3	38			Not assembled
6	24,38	-5,8	ACIn3	39			Not assembled
7			Not assembled	40	-8,5	-21,8	DC-Rect
8			Not assembled	41	-8,5	-18,6	DC-Rect
9			Not assembled	42			Not assembled
10	24,38	18,6	DC+	43			Not assembled
11	24,38	21,8	DC+	44	-12,22	-9	ACIn1
12	16,58	12,2	DC+	45	-12,22	-5,8	ACIn1
13	16,58	15,4	DC+	46	-12,22	0,7	ACIn1
14	16,58	18,6	DC+	47	-12,22	3,9	ACIn1
15	16,58	21,8	DC+	48	-12,22	7,1	ACIn1
16	13,42	-21,8	Therm1	49	-12,22	10,3	ACIn1
17			Not assembled	50			Not assembled
18	13,42	-15,4	ACIn2	51			Not assembled
19	13,42	-12,2	ACIn2	52			Not assembled
20	13,42	-9	ACIn2	53	-24,38	-21,8	DC-Rect
21			Not assembled	54	-24,38	-18,6	DC-Rect
22			Not assembled	55	-24,38	-15,4	DC-Rect
23			Not assembled	56	-24,38	-12,2	DC-Rect
24			Not assembled	57			Not assembled
25			Not assembled	58			Not assembled
26			Not assembled	59			Not assembled
27			Not assembled	60			Not assembled
28	2,46	-21,8	Therm2	61			Not assembled
29			Not assembled	62			Not assembled
30	2,46	-15,4	ACIn2	63			Not assembled
31	2,46	-12,2	ACIn2	64			Not assembled
32	2,46	-9	ACIn2	65			Not assembled
33			Not assembled				



mid. Of BCB pads are dimensioned



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<b>Identification</b>					
ID	Component	Voltage	Current	Function	Comment
D31-D36	FWD	1600 V	75 A	Rectifier Diode	
PTC	Thermistor			Thermistor	




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Packaging instruction			
Standard packaging quantity (SPQ) 72	>SPQ	Standard	<SPQ Sample

Handling instruction
Handling instructions for MiniSkiiP® 2 packages see vincotech.com website.

Package data
Package data for MiniSkiiP® 2 packages see vincotech.com website.

UL recognition and file number
This device is certified according to UL 1557 standard, UL file number E192116. For more information see vincotech.com website. 

Document No.:	Date:	Modification:	Pages
80-M2166RA075RJ-K738H10-D1-14	13 Feb. 2017		

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.