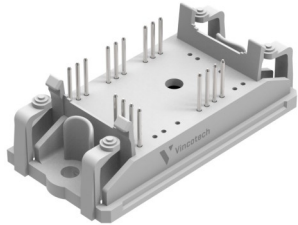
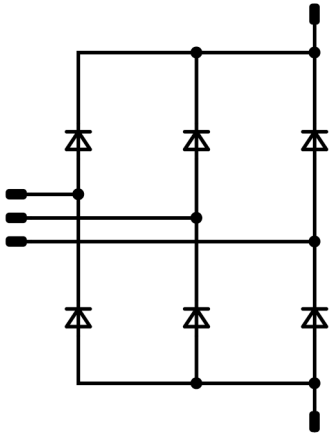




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<i>flowCON 0</i>	1600 V / 50 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Features</p> <ul style="list-style-type: none"> Three-phase input rectifier </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Industrial Drives Embedded Drives UPS </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Types</p> <ul style="list-style-type: none"> V23990-P649-H-PM </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><i>flow 0 17 mm housing</i></p>  </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Schematic</p>  </div>

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Rectifier Diode				
Peak repetitive reverse voltage	V_{RRM}		1600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	59	A
Surge (non-repetitive) forward current	I_{FSM}	50 Hz Single Half Sine Wave $t_p = 10\text{ ms}$ $T_j = 150\text{ °C}$	520	A
Surge current capability	I^2t		1350	A^2s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	73	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_{top}		-40...(T _{max} - 25)	°C

Isolation Properties

Isolation voltage	V_{isol}	DC Test Voltage* $t_p = 2\text{ s}$	6000	V
		AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			min. 12,7	mm
Clearance			min. 12,7	mm
Comparative Tracking Index	CTI		> 200	

*100 % tested in production



Characteristic Values

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

Rectifier Diode

Static

Forward voltage	V_F			42	25 125		1,10 1,04		V
Reverse leakage current	I_R		1600		25 150			20 1500	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)					0,97		K/W
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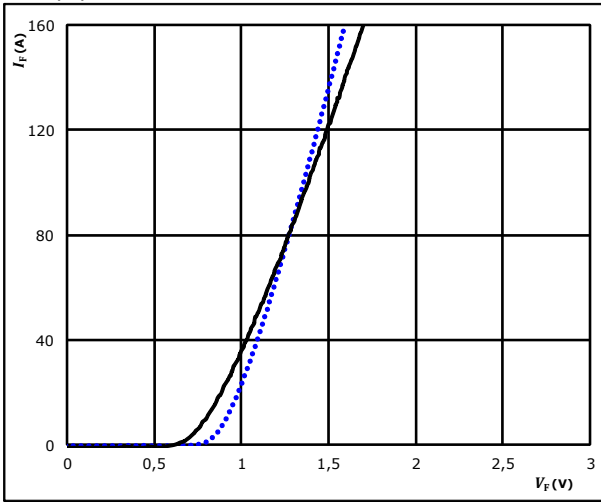


Rectifier Diode Characteristics

figure 1. FWD

Typical forward characteristics

$$I_F = f(V_F)$$

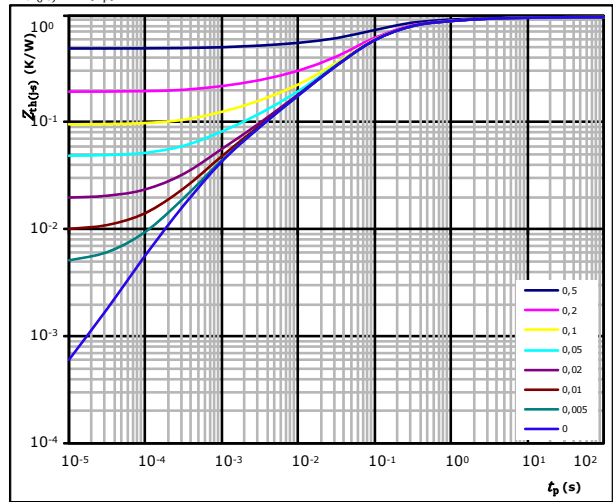


$t_p = 250 \mu s$
 T_j : 25 °C (blue dotted line)
 125 °C (black solid line)

figure 2. FWD

Transient thermal impedance as a function of pulse width

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



$D = t_p / T$
 $R_{th(j-s)} = 0,97 \text{ K/W}$

FWD thermal model values

R (K/W)	τ (s)
3,98E-02	7,88E+00
1,29E-01	8,64E-01
4,20E-01	1,32E-01
2,76E-01	4,24E-02
6,63E-02	5,80E-03
3,37E-02	8,90E-04



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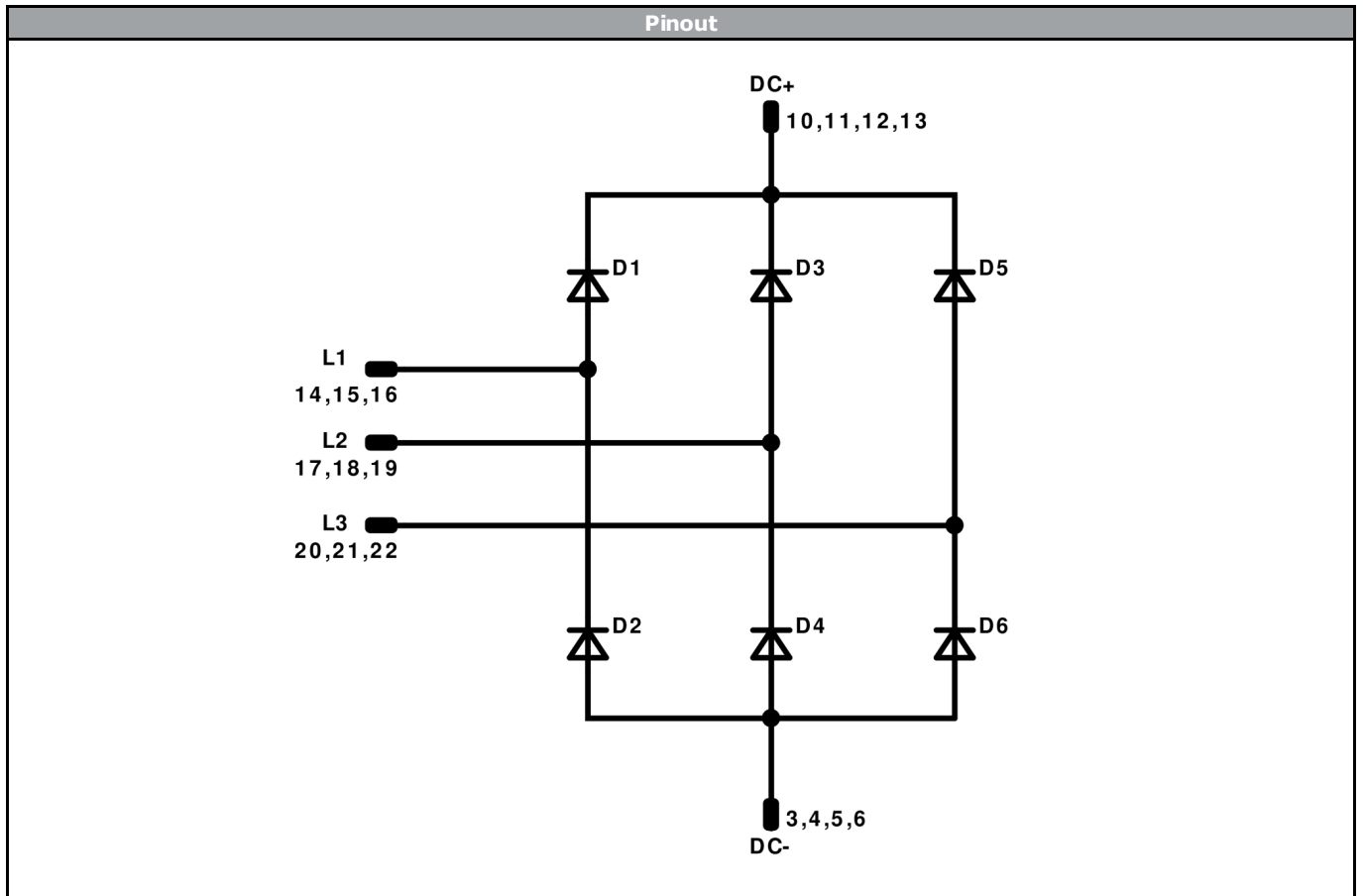
Ordering Code & Marking										
Version				Ordering Code						
without thermal paste 17 mm housing with solder pins				V23990-P649-H-PM						
VIN WWYY NNNNNNVV UL LLLL SSSS				Text	VIN	Date code	Name&Ver	UL	Lot	Serial
					VIN	WWYY	NNNNNNVV	UL	LLLL	SSSS
				Datamatrix	Type&Ver	Lot number	Serial	Date code		
					TTTTTIVV	LLLLL	SSSS	WWYY		

Pin table			
Pin	X	Y	Function
1			Not assembled
2			Not assembled
3	26,4	0	DC-
4	23,9	0	DC-
5	21,4	0	DC-
6	18,9	0	DC-
7			Not assembled
8			Not assembled
9			Not assembled
10	0	0	DC+
11	0	2,5	DC+
12	0	5	DC+
13	0	7,5	DC+
14	0	22,5	L1
15	2,5	22,5	L1
16	5	22,5	L1
17	12	22,5	L2
18	14,5	22,5	L2
19	17	22,5	L2
20	24	22,5	L3
21	26,5	22,5	L3
22	29	22,5	L3
23			Not assembled
24			Not assembled
25			Not assembled

Tolerance of pinpositions: ±0.5mm at the end of pins
Dimension of coordinate axis is only offset without tolerance



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Identification					
ID	Component	Voltage	Current	Function	Comment
D1, D2, D3, D4, D5, D6	Rectifier	1600 V	42 A	Rectifier Diode	




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Packaging instruction			
Standard packaging quantity (SPQ) 135	>SPQ	Standard	<SPQ Sample

Handling instruction
Handling instructions for <i>flow 0</i> packages see vincotech.com website.

Package data
Package data for <i>flow 0</i> 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
V23990-P649-H-D2-14	29 Mar. 2019	Correction of I_c/I_f values	1

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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.