Vincotech

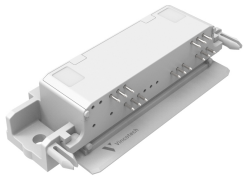
V23990-P718-H-PM
datasheet

***flow*90CON 1** **1600 V / 52 A**

Features

- 3~ phase input rectifier
- Compatible with *flow* 90PACK 1
- Support designs with 90° mounting angle between heatsink and PCB
- Clip-in PCB mounting

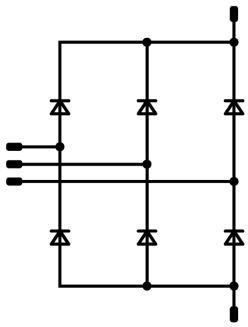
*flow*90 1 housing



Target applications

- Motor drives
- Servo drives

Schematic



Types

- V23990-P718-H-PM

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
Rectifier Diode					
Peak repetitive reverse voltage	V_{RRM}			1600	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	69	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, t_p = 10 ms	T_j = 150 °C	740	A
Surge current capability	I^2t			2740	A^2s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	88	W
Maximum junction temperature	T_{jmax}			150	°C
Module Properties					
Thermal Properties					
Storage temperature	T_{stg}			-40…+125	°C
Operation temperature under switching condition	T_{jop}			-40…+(T_{jmax} - 25)	°C
Isolation Properties					
Isolation voltage	V_{isol}	DC Test Voltage*	t_p = 2 s	6000	V
Creepage distance				>12,7	mm
Clearance				11,84	mm
Comparative Tracking Index	CTI			≥ 200	

*100 % tested in production

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Rectifier Diode										
Static										
Forward voltage	V_F				80	25 125 150		1,33 1,35	1,23(1) 1,17(1)	V
Reverse leakage current	I_R	V_r = 1600 V				25 150			50 1500	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,79		K/W

(1) Value at chip level

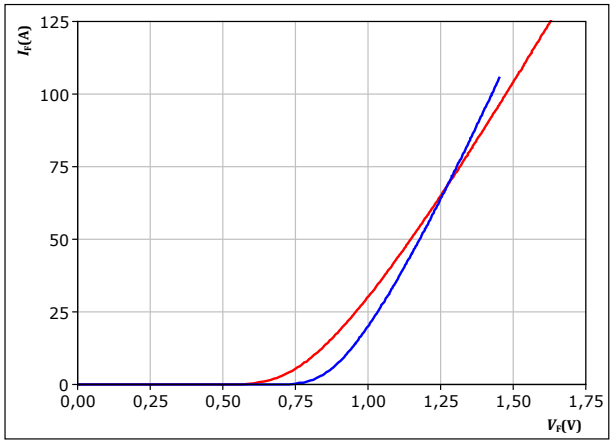
(2) Only valid with pre-applied Vincotech thermal interface material.

Rectifier Diode Characteristics

figure 1. **Rectifier**

Typical forward characteristics

$I_F = f(V_F)$



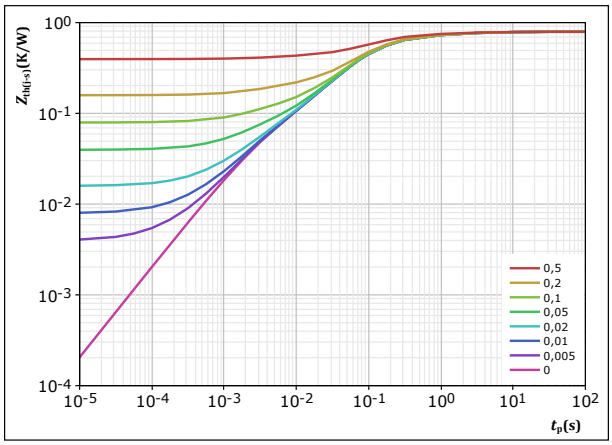
t_p = 250 µs

T_j: 25 °C, 125 °C

figure 2. **Rectifier**

Transient thermal impedance as a function of pulse width

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



D = t_p / T

$R_{th(j-s)}$ = 0,792 K/W

Rectifier thermal model values

R (K/W)	τ (s)
3,05E-02	5,90E+00
8,93E-02	1,13E+00
2,82E-01	1,79E-01
3,51E-01	6,17E-02
3,93E-02	3,00E-03

Ordering Code

Version	Ordering Code
Without thermal paste	V23990-P718-H-PM
With thermal paste (3,4 W/mK, PSX-P7)	V23990-P718-H-/3/-PM

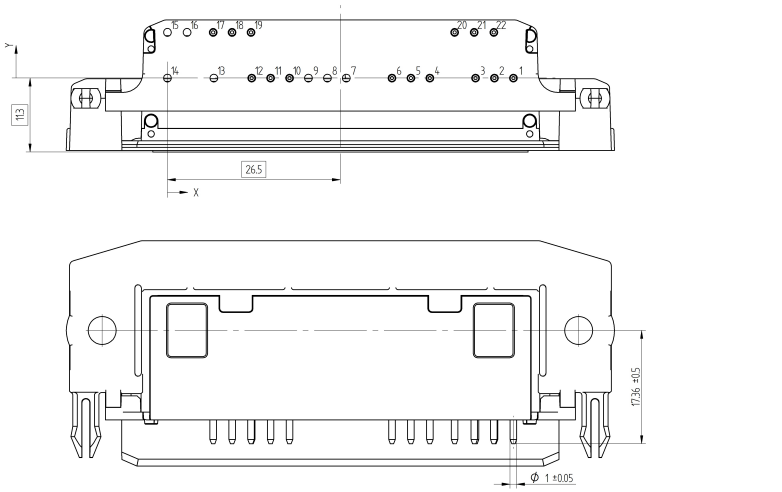
Marking

Text	**VIN**	**Date code**	**Type&Ver**	**UL**	**Lot**	**Serial**
	VIN	WWYY	TTTTTTTVV	UL	LLLLL	SSSS
Datamatrix	**Type&Ver**	**Lot number**	**Serial**	**Date code**		
	TTTTTTTVV	LLLLL	SSSS	WWYY		

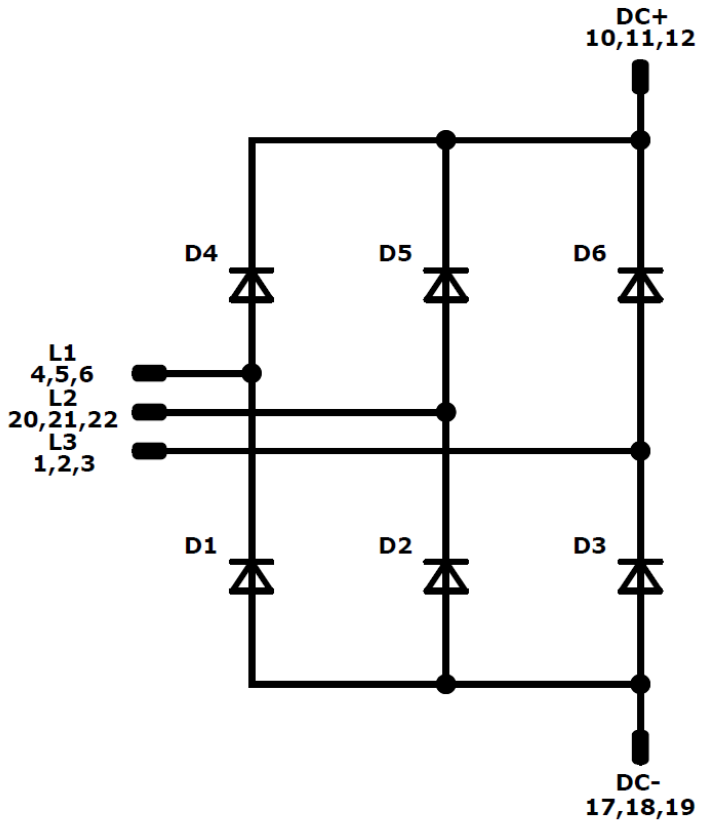
Outline

Pin table [mm]

Pin	X	Y	Function
1	53	0	L3
2	50,1	0	L3
3	47,2	0	L3
4	40,2	0	L1
5	37,3	0	L1
6	34,4	0	L1
7	27,4	0	NA
8	24,5	0	NA
9	21,6	0	NA
10	18,7	0	DC+
11	15,8	0	DC+
12	12,9	0	DC+
13	7,1	0	NA
14	0	0	NA
15	0	7	NA
16	3	7	NA
17	7	7	DC-
18	9,9	7	DC-
19	12,8	7	DC-
20	44	7	L2
21	47	7	L2
22	50	7	L2



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
D1, D4, D2, D5, D3, D6	Rectifier	1600 V	80 A	Rectifier Diode	

Packaging instruction				
Standard packaging quantity (SPQ) 80	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow*90 1 packages see vincotech.com website.

Package data
Package data for *flow*90 1 packages see vincotech.com website.

Vincotech thermistor reference
See Vincotech thermistor reference table at 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-P718-H-PM-D4-14	30 Sep. 2021	Change of Clearance distance Change of Isolation voltage Change of Rectifier Diode forward voltage condition Change of Rth value from P12 to PSX	