



Vincotech

**10-FZ122PB080FV-M818F88**  
**10-PZ122PB080FV-M818F88Y**  
 target datasheet

<i>flow</i> PHASE 0	1200 V / 80 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><b>Features</b></p> <ul style="list-style-type: none"> <li>High efficiency fast Fairchild IGBT</li> <li>Full current fast FWD</li> <li>Thermistor</li> </ul> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><b>Target applications</b></p> <ul style="list-style-type: none"> <li>Industrial Drives</li> <li>Power Supply</li> <li>Solar</li> <li>UPS</li> <li>Welding</li> </ul> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><b>Types</b></p> <ul style="list-style-type: none"> <li>10-FZ122PB080FV-M818F88</li> <li>10-PZ122PB080FV-M818F88Y</li> </ul> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><i>flow</i> 0 12mm housing</p> <div style="display: flex; justify-content: space-around; align-items: center;"> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>Solder pins</span> <span>Press-fit pins</span> </div> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;"><b>Schematic</b></p> </div>

## Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
<b>Half-Bridge Switch</b>				
Collector-emitter voltage	$V_{CES}$		1200	V
Collector current	$I_C$	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	96	A
Repetitive peak collector current	$I_{CRM}$	$t_p$ limited by $T_{jmax}$	320	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	221	W
Gate-emitter voltage	$V_{GES}$		$\pm 20$	V
Maximum Junction Temperature	$T_{jmax}$		175	$^{\circ}\text{C}$



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Parameter	Symbol	Condition	Value	Unit
<b>Half-Bridge Diode</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		1200	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	70	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	134	W
Maximum Junction Temperature	$T_{jmax}$		175	$^\circ\text{C}$

Parameter	Symbol	Condition	Value	Unit
<b>Module Properties</b>				
<b>Thermal Properties</b>				
Storage temperature	$T_{stg}$		-40...+125	$^\circ\text{C}$
Operation temperature under switching condition	$T_{jop}$		$-40...+(T_{jmax} - 25)$	$^\circ\text{C}$

<b>Isolation Properties</b>				
Isolation voltage	$V_{isol}$	DC voltage $t_p=2s$	4000	V
Creepage distance			min 12,7	mm
Clearance		Solder pins / Press-fit pins	9,12 / 9,54	mm
Comparative Tracking Index	CTI		>200	



## Characteristic Values

### Half-Bridge Switch

Parameter	Symbol	Conditions					Value			Unit
		$V_{GE}$ [V] $V_{GS}$ [V]	$V_{CE}$ [V] $V_{GS}$ [V] $V_r$ [V]	$I_C$ [A] $I_D$ [A] $I_F$ [A]	$T_j$ [°C]	Min	Typ	Max		
<b>Static</b>										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,08	25 125	5		7,3	V
Collector-emitter saturation voltage	$V_{CEsat}$		15		80	25 125	1,5	1,80	2,5	V
Collector-emitter cut-off current	$I_{CES}$		0	1200		25 125			100	μA
Gate-emitter leakage current	$I_{GES}$		20	0		25 125			500	nA
Internal gate resistance	$r_g$							none		Ω
Input capacitance	$C_{ies}$	f=100 KHz	0	30		25		8600		pF
Output capacitance	$C_{oes}$							360		
Reverse transfer capacitance	$C_{res}$							200		
Gate charge	$Q_g$		15	600	80	25		740		nC

### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						0,43		K/W
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### Half-Bridge Diode

Parameter	Symbol	Conditions					Value			Unit
		$V_{GE}$ [V] $V_{GS}$ [V]	$V_{CE}$ [V] $V_{GS}$ [V] $V_r$ [V]	$I_C$ [A] $I_D$ [A] $I_F$ [A]	$T_j$ [°C]	Min	Typ	Max		
<b>Static</b>										
Forward voltage	$V_F$				75	25 150		2,17 2,11	2,49	V
Reverse leakage current	$I_r$			1200		25 150			120 14000	μA
<b>Thermal</b>										
Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4 W/mK$						0,71		K/W



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## Thermistor

Parameter	Symbol	Conditions					Value			Unit			
		$V_{GE}$ [V]	$V_{GS}$ [V]	$V_{CE}$ [V]	$V_{GS}$ [V]	$V_r$ [V]	$I_C$ [A]	$I_D$ [A]	$I_F$ [A]		$T_i$ [°C]	Min	Typ
Rated resistance	$R$								25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R100=1484 Ω							100	-5		5	%
Power dissipation	$P$								25		5		mW
Power dissipation constant									25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ±1%							25		3962		K
B-value	$B_{(25/100)}$	Tol. ±1%							25		4000		K
Vincotech NTC Reference												I	



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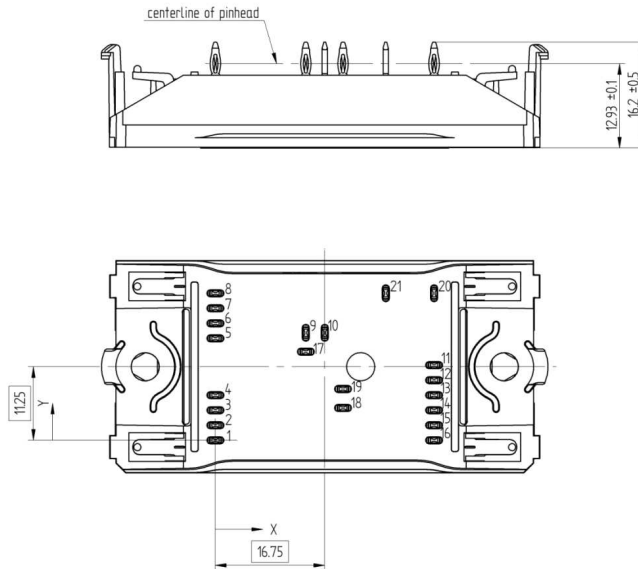
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**Ordering Code & Marking**

Version		Ordering Code					
without thermal paste with Solder pins 12mm housing		10-FZ122PB080FV-M818F88					
without thermal paste with Press-fit pins 12mm housing		10-PZ122PB080FV-M818F88Y					
NN-NNNNNNNNNNNNNN TTTTIV WWYY UL Vinco LLLL SSSS		<b>Text</b>	<b>Name</b>	<b>Date code</b>	<b>UL &amp; Vinco</b>	<b>Lot</b>	<b>Serial</b>
			NN-NNNNNNNNNNNNNN-TTTTIV	WWYY	UL Vinco	LLLLL	SSSS
		<b>Datamatrix</b>	<b>Type&amp;Ver</b>	<b>Lot number</b>	<b>Serial</b>	<b>Date code</b>	
			TTTTTIV	LLLLL	SSSS	WWYY	

**Outline**

Pin table [mm]			
Pin	X	Y	Function
1	0	0	DC-
2	0	2,3	DC-
3	0	4,6	DC-
4	0	6,9	DC-
5	0	15,6	DC+
6	0	17,9	DC+
7	0	20,2	DC+
8	0	22,5	DC+
9	13,85	16,45	G12
10	16,75	16,45	S12
11	33,5	11,5	Ph
12	33,5	9,2	Ph
13	33,5	6,9	Ph
14	33,5	4,6	Ph
15	33,5	2,3	Ph
16	33,5	0	Ph
17	13,85	13,55	Ph
18	19,55	4,95	S11
19	19,55	7,85	G11
20	33,5	22,5	Therm1
21	26,1	22,5	Therm2



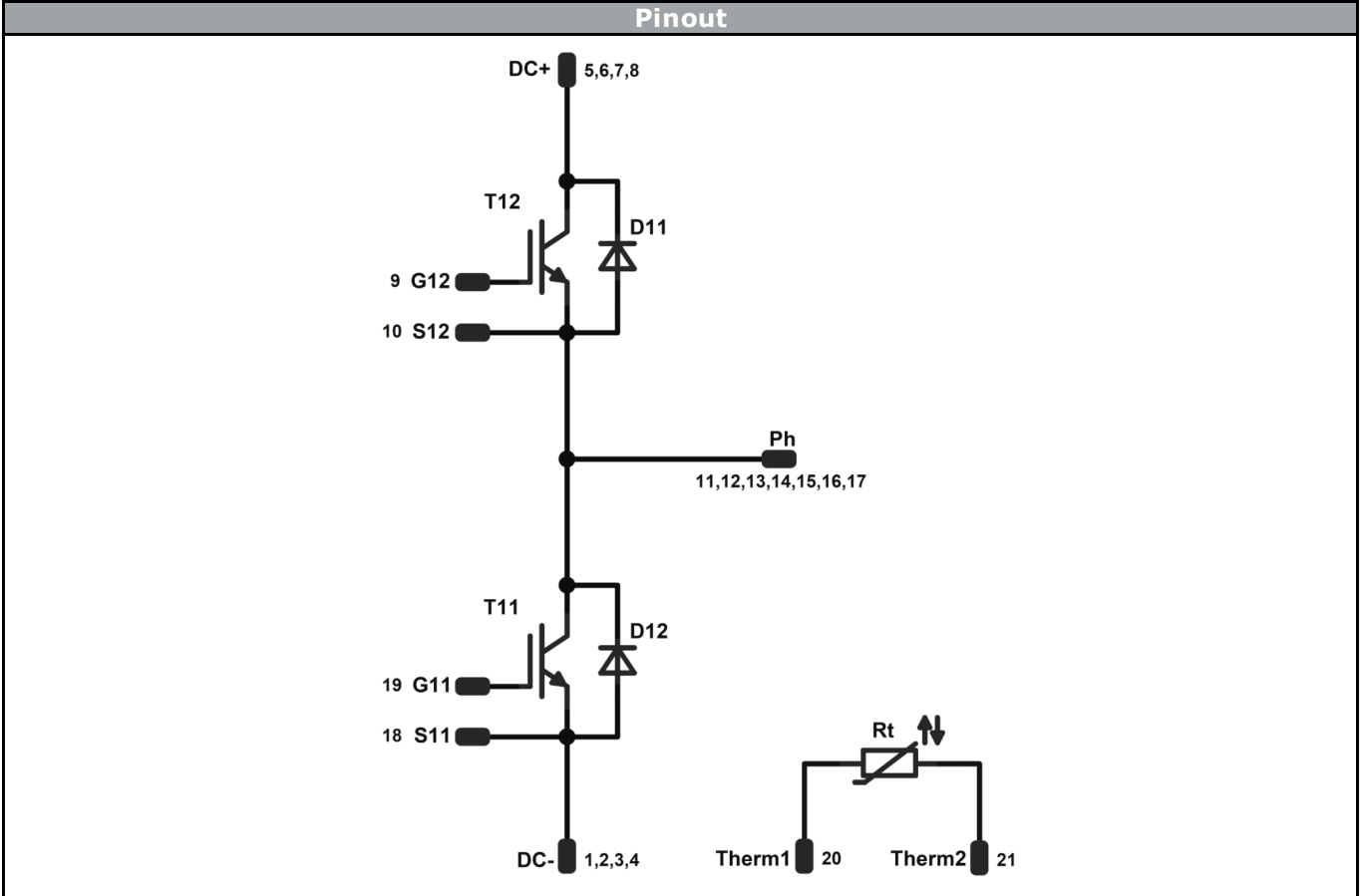
Tolerance of pinpositions: ±0,5mm at the end of pins  
 Dimension of coordinate axis is only offset without tolerance



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**Pinout**



**Identification**

ID	Component	Voltage	Current	Function	Comment
T11,T12	IGBT	1200 V	80 A	Half-Bridge Switch	
D11,D12	FWD	1200 V	75 A	Half-Bridge Diode	
Rt	NTC	-	-	Thermistor	



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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.			

Document No.:	Date:	Modification:	Pages
10-xZ122PB080FV01-M818F98x-T3-14	23 Dec. 2015		

Product status definition		
Datasheet Status	Product Status	Definition
Target	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. The data contained is exclusively intended for technically trained staff.

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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.