



Vincotech

10-FZ122PB100SC02-M819F08
10-F0122PB100SC02-M819F09
 target datasheet

<i>flow</i> PHASE 0	1200 V / 100 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Features</p> <ul style="list-style-type: none"> High efficiency IGBT4 half-bridge Full current FWD Thermistor </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Industrial Drives Power Supply Solar UPS Welding </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Types</p> <ul style="list-style-type: none"> 10-FZ122PB100SC02-M819F08 10-F0122PB100SC02-M819F09 </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;"><i>flow</i> 0 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;"> 12 mm housing 17 mm housing </div> </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Schematic</p> </div>

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Half-bridge Switch				
Collector-emitter voltage	V_{CES}		1200	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	90	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	207	W
Gate-emitter voltage	V_{GES}		±20	V
Short circuit ratings	t_{SC}	$T_j \leq 150^{\circ}\text{C}$	10	µs
	V_{CC}	$V_{GE} = 15\text{V}$	800	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
Half-bridge Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	84	A
Repetitive peak forward current	I_{FRM}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	144	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Module Properties

Parameter	Symbol	Conditions	Value	Unit
Thermal Properties				
Storage temperature	T_{stg}		-40...+125	$^\circ\text{C}$
Operation Junction Temperature	T_{jop}		-40...+($T_{jmax} - 25$)	$^\circ\text{C}$

Isolation Properties

Isolation voltage	V_{isol}	DC voltage	$t_p=2s$	4000	V
Creepage distance				min 12,7	mm
Clearance		for 12 mm housing		9,12	mm
Clearance		for 17 mm housing		min 12,7	mm
Comparative Tracking Index	CTI			>200	



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Characteristic Values

Half-bridge Switch

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

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,0038	25 125	5,1	5,8	6,4	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125 150	1,53	1,90	2,1	V
Collector-emitter cut-off current	I_{CES}		0	1200		25 125			10	μA
Gate-emitter leakage current	I_{GES}		20	0		25 125			120	nA
Internal gate resistance	r_g						7,5			Ω
Input capacitance	C_{ies}	f=1 MHz	0	25		25		6300		pF
Reverse transfer capacitance	C_{res}							270		

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						0,46		K/W
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Half-bridge Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			

Static

Forward voltage	V_F				100	25 125	1,35	1,83 1,86	2,05	V
Reverse leakage current	I_r			1200		25 150			18	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						0,66		K/W
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Thermistor

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V]	V_{CE} [V]	I_C [A]	$T_{j }$ [°C]	Min	Typ	Max	
Rated resistance	R					25		21,5		k Ω
Deviation of R100	$\Delta_{R/R}$	R100=1486 Ω				100	-4,5		+4,5	%
Power dissipation	P					25		210		mW
Power dissipation constant						25		3,5		mW/K
B-value	$B_{(25/50)}$					25		3884		K
B-value	$B_{(25/100)}$					25		3964		K
Vincotech NTC Reference									F	



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Ordering Code & Marking							
Version	Ordering Code	in DataMatrix as		in packaging barcode as			
without thermal paste 12mm housing	10-FZ122PB100SC02-M819F08	M819F08		M819F08			
without thermal paste 17mm housing	10-F0122PB100SC02-M819F09	M819F09		M819F09			
NN-NNNNNNNNNNNNNNNN NNNNNNNN WWYY UL Vinco LLLLL SSSS		Text	Name	Date code	UL & Vinco	Lot	Serial
			NN-NNNNNNNNNNNNNNNN	WWYY	UL Vinco	LLLLL	SSSS
		Datamatrix	Type&Ver	Lot number	Serial	Date code	
		TTTTTTTV	LLLLL	SSSS	WWYY		

Pin table [mm]				Outline	
Pin	X	Y	Function		
1	0	0	DC-		12 mm housing
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		17 mm housing
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		

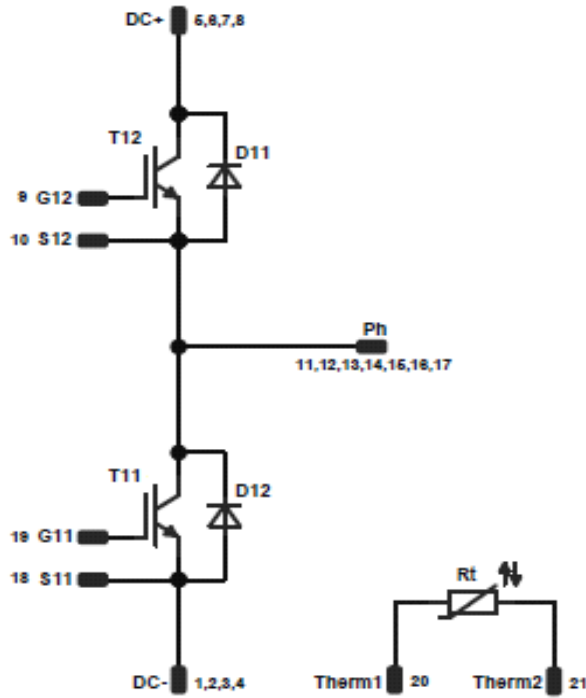
Tolerance of positions: ±0.5mm of the end of pins
 Dimension of coordinate axis is only offset without tolerance



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Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T11,T12	IGBT	1200V	100A	Half-bridge Switch	
D11,D12	FWD	1200V	100A	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</i> 0 packages see vincotech.com website.

Package data
Package data for <i>flow</i> 0 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-Fx122PB100SC02-M819F0x-T1-14	01 Nov. 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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