Vincotech

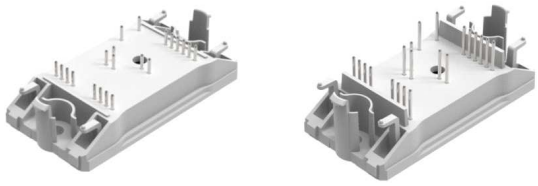
10-FZ122PB100SC03-M819F18
10-F0122PB100SC03-M819F19
target datasheet

flow PHASE 0 **1200 V / 100 A**

Features

- High efficiency IGBT4 half-bridge
- Full current FWD
- Thermistor

flow 0 housing

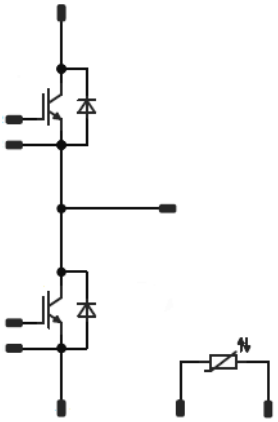


12 mm housing 17 mm housing

Target applications

- Industrial Drives
- Power Supply
- Solar
- UPS
- Welding

Schematic



Types

- 10-FZ122PB100SC03-M819F18
- 10-F0122PB100SC03-M819F19

Maximum Ratings

T_j=25°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 °C	116	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 °C	307	W
Gate-emitter voltage	V_{GES}		±20	V
Short circuit ratings	t_{SC} V_{CC}	$T_j \leq 150°C$ V_{GE} = 15V	10 800	µs V
Maximum Junction Temperature	T_{jmax}		175	°C

Parameter	Symbol	Conditions	Value	Unit
Half-bridge Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80°C$	107	A
Repetitive peak forward current	I_{FRM}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80°C$	207	W
Maximum Junction Temperature	T_{jmax}		175	°C

Module Properties

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

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		1,90 2,30	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	$R_{th(j-s)}$	Thermal foil thickness=76um Kunze foil KU-ALF5						0,31		K/W

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	$R_{th(j-s)}$	Thermal foil thickness=76um Kunze foil KU-ALF5						0,46		K/W

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		kΩ
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	

Vincotech

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Ordering Code & Marking

Version	Ordering Code	in DataMatrix as	in packaging barcode as
without thermal paste 12mm housing	10-FZ122PB100SC03-M819F18	M819F18	M819F18
without thermal paste 17mm housing	10-F0122PB100SC03-M819F19	M819F19	M819F19

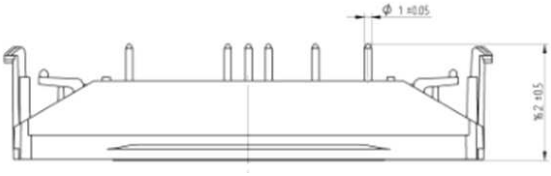
Text	Name	Date code	UL & Vinco	Lot	Serial
	NN-NNNNNNNNNNNNNN-NNNNNNNN	WWYY	UL Vinco	LLLLL	SSSS

Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTTTVV	LLLLL	SSSS	WWYY		

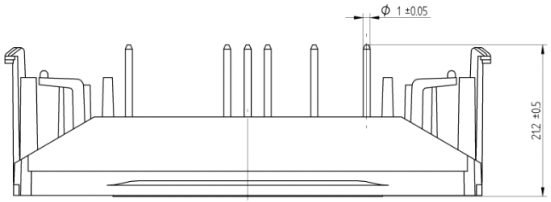
Outline

Pin table [mm]

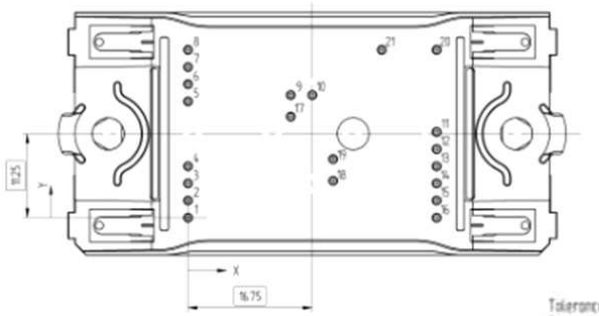
Pin	X	Y	Function
1	0	0	DC-
2	0	2,3	DC-
3	0	4,6	DC-
4	0	6,9	DC-
5	0	15,6	DC+
6	0	17,9	DC+
7	0	20,2	DC+
8	0	22,5	DC+
9	13,85	16,45	G12
10	16,75	16,45	S12
11	33,5	11,5	Ph
12	33,5	9,2	Ph
13	33,5	6,9	Ph
14	33,5	4,6	Ph
15	33,5	2,3	Ph
16	33,5	0	Ph
17	13,85	13,55	Ph
18	19,55	4,95	S11
19	19,55	7,85	G11
20	33,5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



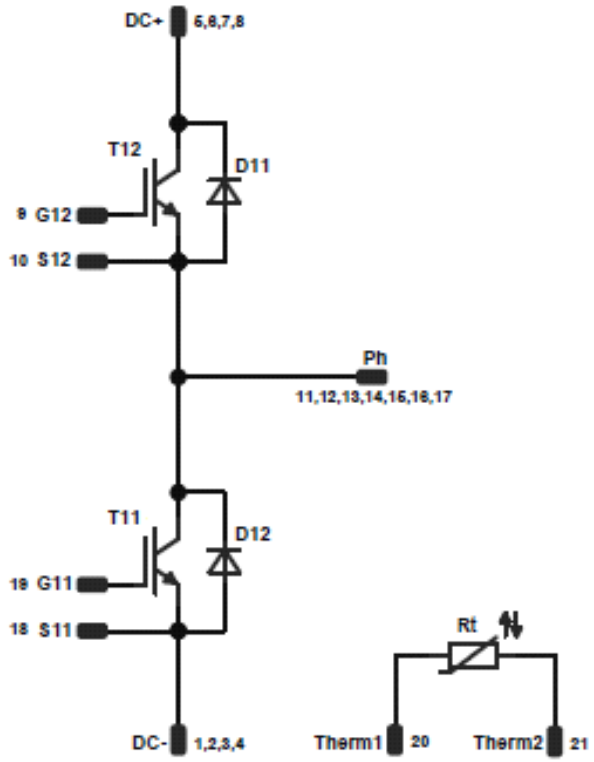
12 mm housing



17 mm housing



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	

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

Handling instruction
Handling instructions for *flow* 0 packages see vincotech.com website.

Package data
Package data for *flow* 0 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-Fx122PB100SC03-M819F1x-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.