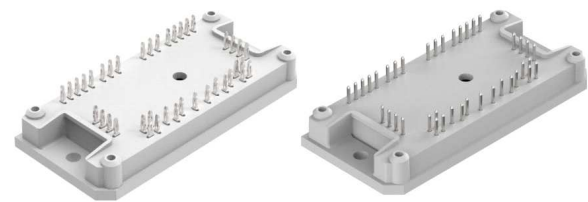
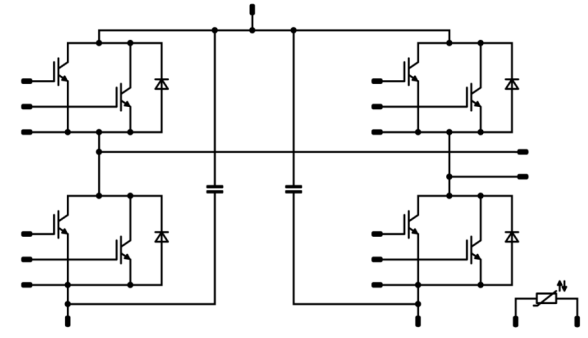




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10-FY074PA100SM01-L583F18
10-PY074PA100SM01-L583F18Y
 target datasheet

<i>fast</i> PACK 1 H	650 V / 100 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Features</p> <ul style="list-style-type: none"> High-efficient H-Bridge Open emitter topology Fast IGBT H5 + Fast Rapid 1 Diode Integrated capacitors Integrated thermistor Low inductive 12mm housing </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #ccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Power Supply Solar Inverter Welding </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"> 10-FY074PA100SM01-L583F18 10-PY074PA100SM01-L583F18Y </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> 1 12mm housing</p>  <p style="display: flex; justify-content: space-around; font-size: small;"> Press-fit Solder pin </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
H-Bridge Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	79	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	133	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
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H-Bridge Diode

Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	81	A
Repetitive peak forward current	I_{FRM}		180	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	94	W
Maximum junction temperature	T_{jmax}		175	°C

Capacitor (DC)

Maximum DC voltage	V_{MAX}		630	V
Operation Temperature	T_{op}		-55...+125	°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 Voltage	$t_p = 2s$	4000	V
Creepage distance				min. 12,7	mm
Clearance			Solder pin Press-fit	8,1 7,92	mm
Comparative Tracking Index	CTI			> 200	



Vincotech

10-FY074PA100SM01-L583F18
10-PY074PA100SM01-L583F18Y
 target datasheet

Characteristic Values

Parameter	Symbol	Conditions					Value			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		

H-Bridge Switch

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,001	25	3,3	4	4,7	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125		1,63 1,78	2,22	V
Collector-emitter cut-off current	I_{CES}		0	650		25			80	μA
Gate-emitter leakage current	I_{GES}		20	0		25			240	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}							6000		pF
Output capacitance	C_{oes}	$f = 1$ MHz	0	25		25		100		
Reverse transfer capacitance	C_{res}							22		
Gate charge	Q_g		15	520	100	25		240		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						0,72		K/W
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H-Bridge Diode

Static

Forward voltage	V_F				90	25 125		1,35 1,32	1,77	V
Reverse leakage current	I_R			650		25			4,8	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						1,01		K/W
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Capacitor (DC)

Capacitance	C							200		nF
Tolerance							-10		+10	%
Dissipation factor		$f = 1$ kHz				25			2,5	%



Vincotech

10-FY074PA100SM01-L583F18
10-PY074PA100SM01-L583F18Y
 target datasheet

Characteristic Values

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

Thermistor

Rated resistance	R				25		22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$			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	

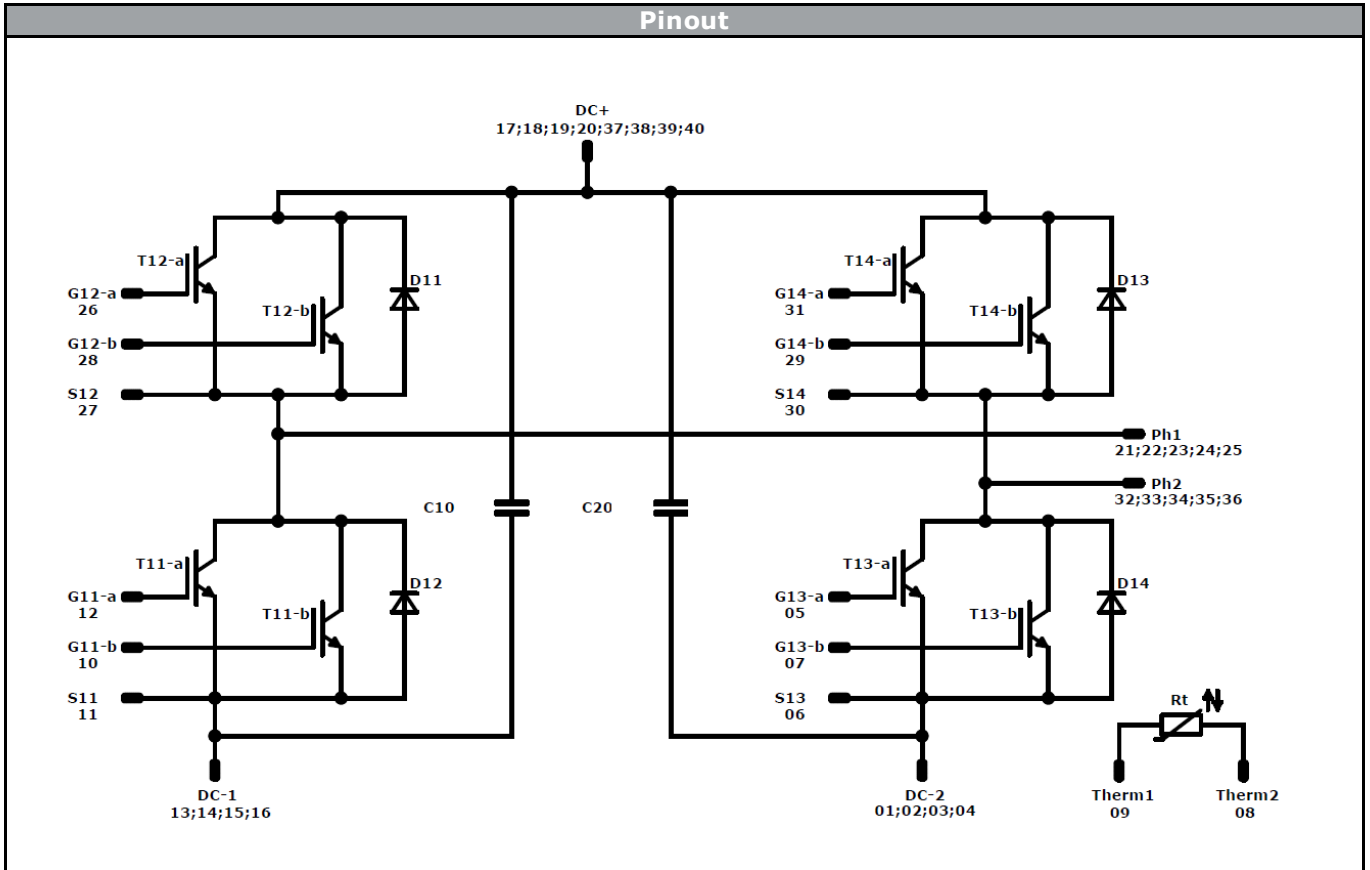


Ordering Code & Marking								
Version			Ordering Code					
without thermal paste 12mm housing with solder pins			10-FY074PA100SM01-L583F18					
without thermal paste 12mm housing with Press-fit pins			10-PY074PA100SM01-L583F18Y					
			Text	Name	Date code	UL & VIN	Lot	Serial
				NN-NNNNNNNNNNNNNNN-TTTTIVV	WWYY	UL VIN	LLLLL	SSSS
			Datamatrix	Type&Ver	Lot number	Serial	Date code	
				TTTTTIVV	LLLLL	SSSS	WWYY	

Outline							
Pin table [mm]				Pin table [mm]			
Pin	X	Y	Function	Pin	X	Y	Function
1	46,3	2,7	DC-2	30	34,35	28,6	S14
2	46,3	0	DC-2	31	37,35	28,6	G14-a
3	43,6	2,7	DC-2	32	41,8	28,6	Ph2
4	43,6	0	DC-2	33	44,5	28,6	Ph2
5	39,2	1	G13-a	34	47,2	28,6	Ph2
6	36,2	0	S13	35	49,9	28,6	Ph2
7	33,2	1	G13-b	36	52,6	28,6	Ph2
8	28,8	0	Therm2	37	52,6	14,9	DC+
9	23,8	0	Therm1	38	52,6	12,2	DC+
10	19,4	1	G11-b	39	52,6	9,5	DC+
11	16,4	0	S11	40	52,6	6,8	DC+
12	13,4	1	G11-a				
13	9	2,7	DC-1				
14	9	0	DC-1				
15	6,3	2,7	DC-1				
16	6,3	0	DC-1				
17	0	6,8	DC+				
18	0	9,5	DC+				
19	0	12,2	DC+				
20	0	14,9	DC+				
21	0	28,6	Ph1				
22	2,7	28,6	Ph1				
23	5,4	28,6	Ph1				
24	8,1	28,6	Ph1				
25	10,8	28,6	Ph1				
26	15,25	28,6	G12-a				
27	18,25	28,6	S12				
28	21,25	28,6	G12-b				
29	31,35	28,6	G14-b				



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Identification					
ID	Component	Voltage	Current	Function	Comment
T11-a, T11-b, T12-a, T12-b, T13-a, T13-b, T14-a, T14-b	IGBT	650 V	100 A	H-Bridge Switch	Parallel devices with separate control. Values pertain to complete device.
D11, D12, D13, D14	FWD	650 V	90 A	H-Bridge Diode	
C10, C20	Capacitor	630 V		Capacitor (DC)	
Rt	Thermistor			Thermistor	




Vincotech

10-FY074PA100SM01-L583F18
10-PY074PA100SM01-L583F18Y
target datasheet

Packaging instruction			
Standard packaging quantity (SPQ) 100	>SPQ	Standard	<SPQ Sample

Handling instruction
Handling instructions for <i>flow</i> 1 packages see vincotech.com website.

Package data
Package data for <i>flow</i> 1 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
10-xY074PA100SM01-L583F18x-T2-14	03 Feb. 2017	Added solder pin option	1, 2

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.