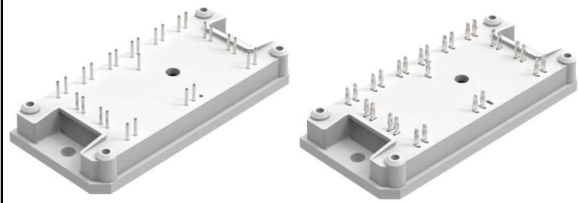
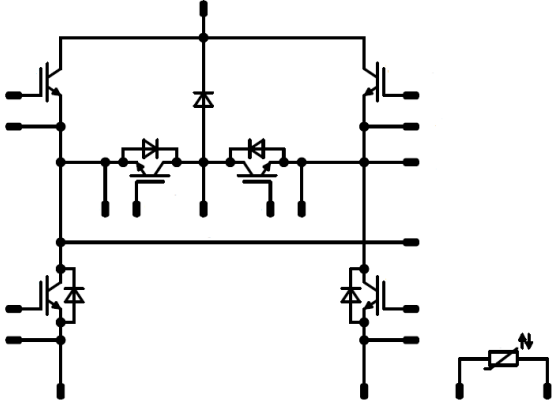




Vincotech

10-FY07HVA075S5-L985F08
10-PY07HVA075S5-L985F08Y
 target datasheet

flow PACK 1 H6.5		650 V / 75 A
Features • For one-phase solar applications • Innovative H6.5 topology • LVRT (Low voltage ride through) capability • Fast IGBT S5 • Chipset optimized for switching frequencies up to 25kHz • NTC		flow 1 12mm housing  solder pin Press-fit pin
Target applications • Solar • Special Application		Schematic 
Types • 10-FY07HVA075S5-L985F08 • 10-PY07HVA075S5-L985F08Y		

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
High Buck Switch / Low Buck Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	62	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	225	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	86	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C



Vincotech

10-FY07HVA075S5-L985F08
10-PY07HVA075S5-L985F08Y
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Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Boost Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	89	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	225	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	99	W
Gate-emitter voltage	V_{GES}		± 20	V
Maximum junction temperature	T_{jmax}		175	°C

Buck Diode / High Boost Diode / Low Boost Diode

Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	49	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	100	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	68	W
Maximum junction temperature	T_{jmax}		175	°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 $t_p = 2\text{ s}$	4000	V
Creepage distance			min. 12,7	mm
Clearance		solder pin / Press-fit 12mm housing	7,99 / 8,3	mm
Comparative Tracking Index	CTI		> 200	



Vincotech

10-FY07HVA075S5-L985F08
10-PY07HVA075S5-L985F08Y
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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	

High Buck Switch / Low Buck Switch

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,00075	25	3,2	4	4,8	V
Collector-emitter saturation voltage	V_{CEsat}		15		75	25 125		1,42 1,55	1,75	V
Collector-emitter cut-off current	I_{CES}		0	650		25			50	μA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	$f = 1 \text{ MHz}$	0	25		25		4500		pF
Output capacitance	C_{oes}							130		
Reverse transfer capacitance	C_{res}							17		
Gate charge	Q_g		15	520	75	25		164		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4 \text{ W/mK}$						1,11		K/W
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Boost Switch

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,001	25	4,2	5	5,8	V
Collector-emitter saturation voltage	V_{CEsat}		15		75	25		1,05	1,45	V
Collector-emitter cut-off current	I_{CES}		0	650		25			40	μA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	$f = 1 \text{ MHz}$	0	25		25		11625		pF
Reverse transfer capacitance	C_{res}							30		

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4 \text{ W/mK}$						0,96		K/W
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Vincotech

10-FY07HVA075S5-L985F08
10-PY07HVA075S5-L985F08Y
 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	

Buck Diode / High Boost Diode / Low Boost Diode

Static

Forward voltage	V_F				50	25 125		1,50 1,44	1,77	V
Reverse leakage current	I_R			650		25			2,65	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						1,41		K/W
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Thermistor

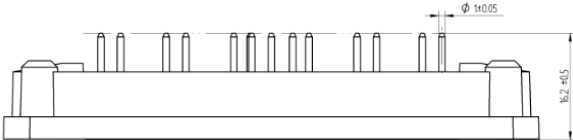
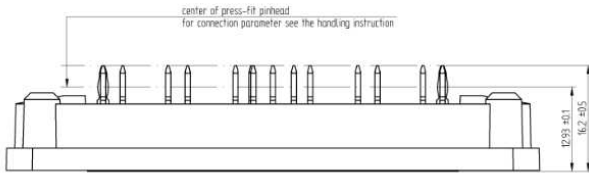
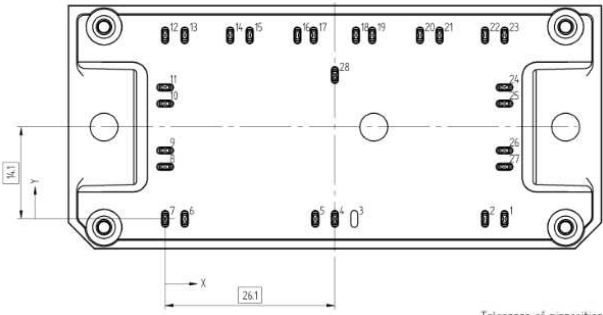
Rated resistance	R					25		22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$				100	-5		5	%
Power dissipation	P					25		5		mW
Power dissipation constant						25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ± 1 %				25		3962		K
B-value	$B_{(25/100)}$	Tol. ± 1 %				25		4000		K
Vincotech NTC Reference									I	



Vincotech

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target datasheet

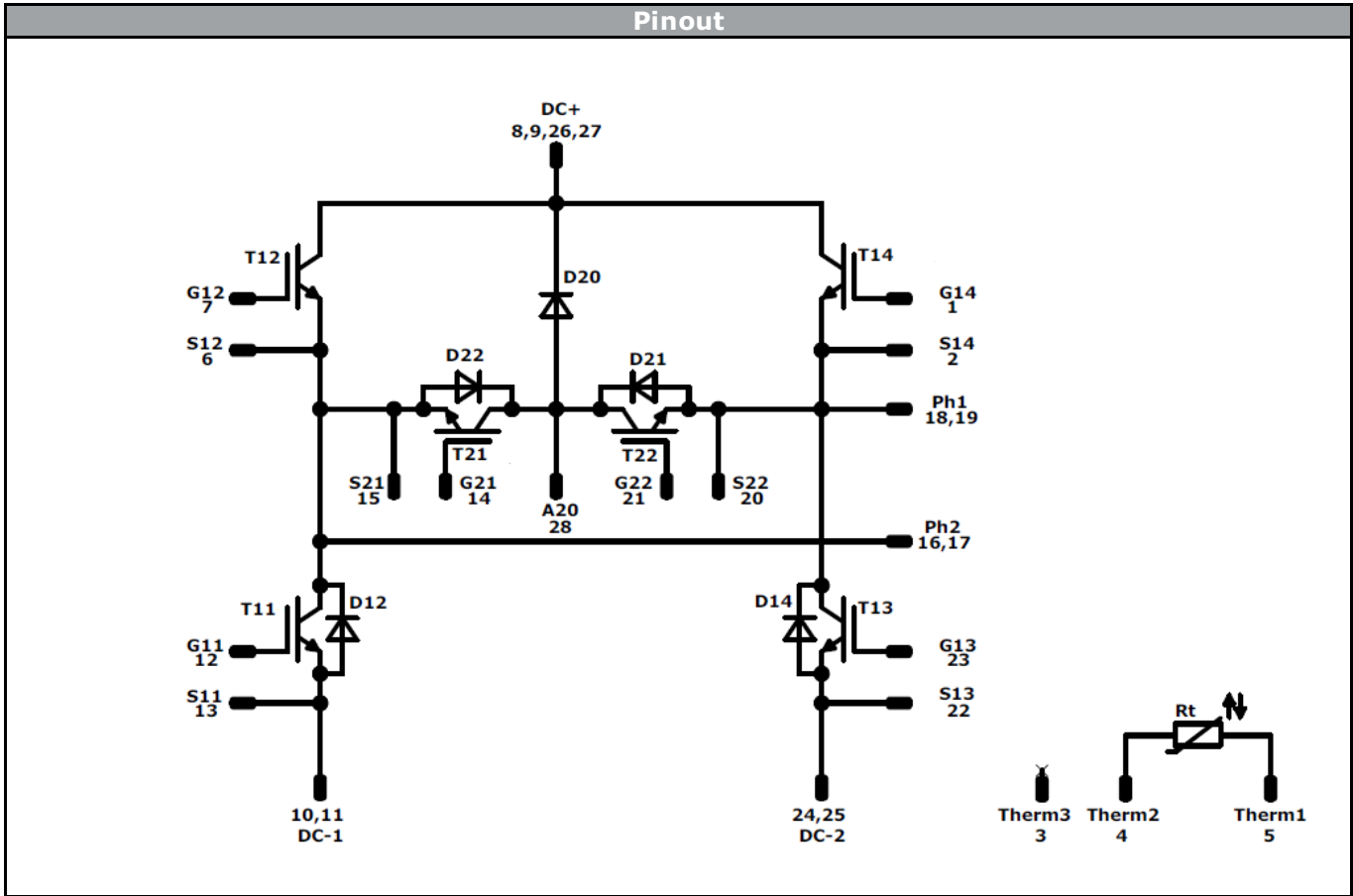
Ordering Code & Marking									
Version			Ordering Code						
without thermal paste 12mm housing with solder pins			10-FY07HVA075S5-L985F08						
without thermal paste 12mm housing with Press-fit pins			10-PY07HVA075S5-L985F08Y						
NN-NNNNNNNNNNNNNN TTTTTV WWYY UL VIN LLLL SSSS 			Text	Name		Date code	UL & VIN	Lot	Serial
				NN-NNNNNNNNNNNNNN-TTTTTV		WWYY	UL VIN	LLLL	SSSS
			Datamatrix	Type&Ver	Lot number	Serial	Date code		
				TTTTTV		LLLL	SSSS	WWYY	

Pin table [mm]				Outline	
Pin	X	Y	Function		
1	52,2	0	G14	solder pin	
2	49,2	0	S14		
3	Not assembled				
4	26,1	0	Therm2	Press-fit pin	
5	23,1	0	Therm1		
6	3	0	S12		
7	0	0	G12		
8	0	8	DC+		
9	0	10,5	DC+		
10	0	17,7	DC-1		
11	0	20,2	DC-1		
12	0	28,2	G11		
13	3	28,2	S11		
14	10	28,2	G21		Tolerance of pinpositions: $\pm 0.5\text{mm}$ at the end of pins Dimension of coordinate axis is only offset without tolerance.
15	13	28,2	S21		
16	20,35	28,2	Ph2		
17	22,85	28,2	Ph2		
18	29,35	28,2	Ph1		
19	31,85	28,2	Ph1		
20	39,2	28,2	S22		
21	42,2	28,2	G22		
22	49,2	28,2	S13		
23	52,2	28,2	G13		
24	52,2	20,2	DC-2		
25	52,2	17,7	DC-2		
26	52,2	10,5	DC+		
27	52,2	8	DC+		
28	26,1	22,1	A20		



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10-FY07HVA075S5-L985F08
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 target datasheet



Identification					
ID	Component	Voltage	Current	Function	Comment
T11-T14	IGBT	650 V	75 A	High Buck Switch / Low Buck Switch	
D21, D22	FWD	650 V	50 A	Buck Diode	
T21, T22	IGBT	650 V	75 A	Boost Switch	
D20	FWD	650 V	50 A	High Boost Diode	
D12, D14	FWD	650 V	50 A	Low Boost Diode	
Rt	Thermistor			Thermistor	



Vincotech

10-FY07HVA075S5-L985F08
10-PY07HVA075S5-L985F08Y
target datasheet

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

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

Package data
Package data for <i>flow 1</i> 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-xy07HVA075S5-L985F08x-T1-14	26 Jul. 2016		

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.