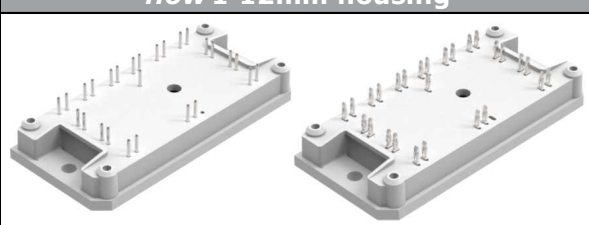
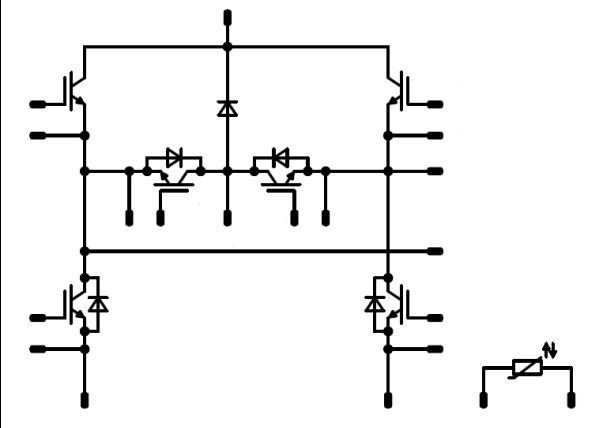




<i>flow</i> PACK 1 H6.5	650 V / 100 A
<div style="background-color: #eee; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> For one-phase solar applications Innovative H6.5 topology LVRT (Low voltage ride through) capability Fast IGBT S5 Chipset optimized for switching frequencies up to 25kHz NTC 	<div style="background-color: #eee; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;"><i>flow</i> 1 12mm housing</div> <div style="text-align: center;">  </div> <div style="display: flex; justify-content: space-around; font-size: small;"> solder pin Press-fit pin </div>
<div style="background-color: #eee; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Target applications</div> <ul style="list-style-type: none"> Solar Special Application 	<div style="background-color: #eee; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Schematic</div> 
<div style="background-color: #eee; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> 10-FY07HVA100S5-L986F08 10-PY07HVA100S5-L986F08Y 	

Maximum Ratings

$T_j = 25\text{ }^\circ\text{C}$, 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	$T_j = T_{jmax}$ $T_s = 80\text{ }^\circ\text{C}$	83	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ }^\circ\text{C}$	125	W
Gate-emitter voltage	V_{GES}		± 20	V
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$



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 target datasheet

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	$^{\circ}\text{C}$

Buck Diode / High Boost Diode / Low Boost Diode

Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	59	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	150	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	78	W
Maximum Junction Temperature	T_{jmax}		175	$^{\circ}\text{C}$

Module Properties

Thermal Properties

Storage temperature	T_{stg}		-40...+125	$^{\circ}\text{C}$
Operation temperature under switching condition	T_{jop}		-40...($T_{jmax} - 25$)	$^{\circ}\text{C}$

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 pins 12mm housing	7,99 / 8,3	mm
Comparative Tracking Index	CTI		> 200	



Characteristic Values

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

High Buck Switch / Low Buck Switch

Static

Parameter	Symbol	$V_{GE} = V_{CE}$	V_{GS} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	Unit
Gate-emitter threshold voltage	$V_{GE(th)}$				0,001	25	3,2	4	4,8	V
Collector-emitter saturation voltage	V_{CESat}		15		100	25		1,35	1,75	V
Collector-emitter cut-off current	I_{CES}		0	650		25			100	μA
Gate-emitter leakage current	I_{GES}		20	0		25			200	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	$f = 1 \text{ MHz}$	0	25		25		6200		pF
Output capacitance	C_{oes}							176		
Reverse transfer capacitance	C_{res}							24		
Gate charge	Q_g		15	520	100	25		240		nC

Thermal

Parameter	Symbol	Material	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4 \text{ W/mK}$				0,76 K/W

Boost Switch

Static

Parameter	Symbol	$V_{GE} = V_{CE}$	V_{GS} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	Unit
Gate-emitter threshold voltage	$V_{GE(th)}$				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

Parameter	Symbol	Material	Min	Typ	Max	Unit
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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 target datasheet

Characteristic Values

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

Buck Diode / High Boost Diode / Low Boost Diode

Static

Parameter	Symbol	V_{GS} [V]	V_{DS} [V]	I_D [A]	T_j [°C]	Min	Typ	Max	Unit
Forward voltage	V_F			75	25 125 150		1,53 1,49 1,47	1,77	V
Reverse leakage current	I_r		650		25			3,8	µA

Thermal

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK		1,22		K/W


Thermistor

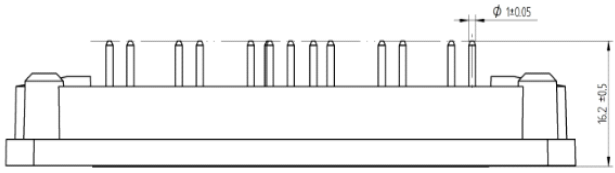
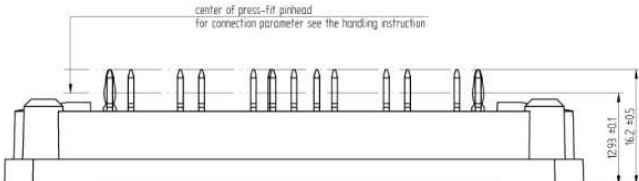
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Rated resistance	R		25	22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$	100	-5	5	%
Power dissipation	P		25	5		mW
Power dissipation constant			25	1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ± 1 %	25	3962		K
B-value	$B_{(25/100)}$	Tol. ± 1 %	25	4000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



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 target datasheet

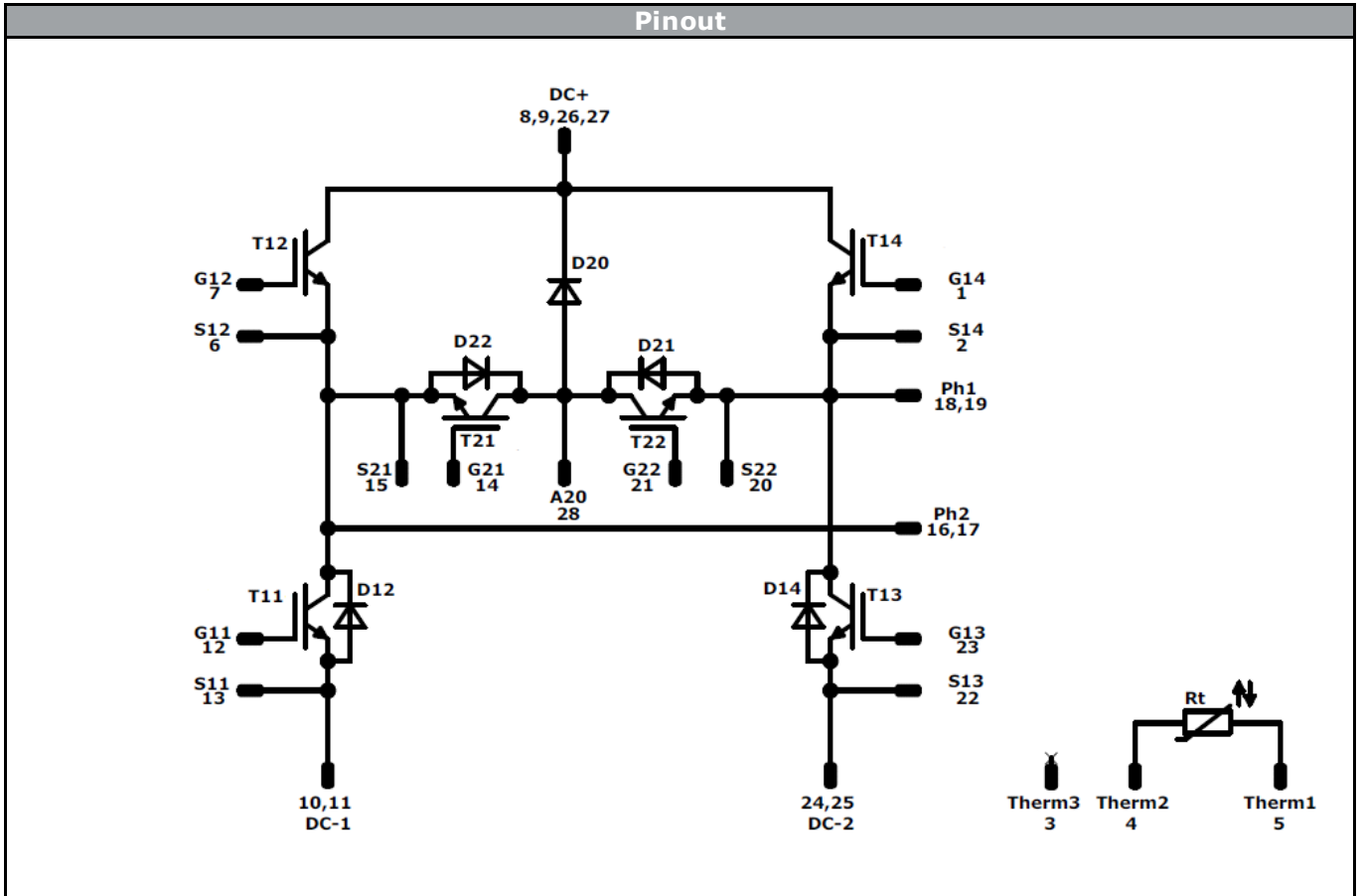
Ordering Code & Marking						
Version			Ordering Code			
without thermal paste 12mm housing with solder pins			10-FY07HVA100S5-L986F08			
without thermal paste 12mm housing with Press-fit pins			10-PY07HVA100S5-L986F08Y			
						
Text	Name		Date code	UL & VIN	Lot	Serial
	NN-NNNNNNNNNNNNNN-TTTTT		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTTVV	LLLLL	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				
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				

Tolerance of pinpositions: ±0.05mm at the end of pins
 Dimension of coordinate axis is only offset without tolerance



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Identification					
ID	Component	Voltage	Current	Function	Comment
T11-T14	IGBT	650 V	100 A	High Buck Switch / Low Buck Switch	
D21, D22	FWD	650 V	75 A	Buck Diode	
T21, T22	IGBT	650 V	75 A	Boost Switch	
D20	FWD	650 V	75 A	High Boost Diode	
D12, D14	FWD	650 V	75 A	Low Boost Diode	
Rt	Thermistor			Thermistor	




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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-xy07HVA100S5-L986F08x-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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- 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.