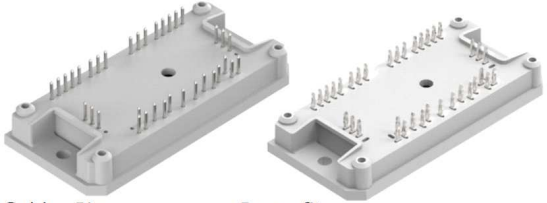
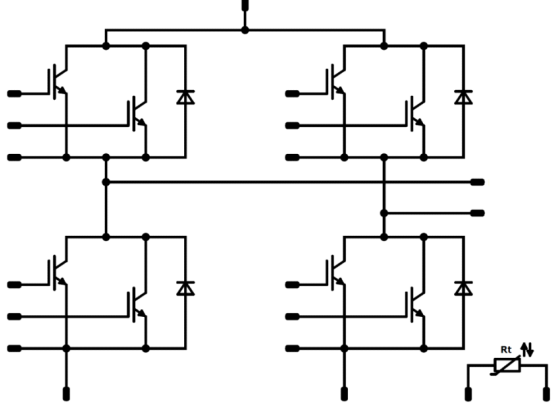




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10-PY124PA080FV-L589F88Y
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 target datasheet

<i>flow</i> PACK 1 H	1200 V / 80 A
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> High speed IGBT Fast, soft reverse Diode Open emitter topology Integrated capacitors Integrated thermistor 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">flow 1 12mm housing</div> <div style="text-align: center;">  </div> <p style="display: flex; justify-content: space-around; margin-top: 5px;"> Solder Pin Press-fit </p>
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Target applications</div> <ul style="list-style-type: none"> Charger SMPS Solar Welding ESS 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Schematic</div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> 10-PY124PA080FV-L589F88Y 10-FY124PA080FV-L589F88 	

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
H-Bridge Switch				
Collector-emitter voltage	V_{CES}		1200	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	80	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	320	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	190	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum Junction Temperature	T_{jmax}		175	°C



Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
H-Bridge Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{°C}$	47	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{°C}$	101	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 Voltage $t_p = 2s$	4000	V
Creepage distance			min. 12,7	mm
Clearance			7,92	mm
Comparative Tracking Index	CTI		> 200	



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Characteristic Values

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

H-Bridge Switch

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,08	25 125	5	6,8	7,3	V
Collector-emitter saturation voltage	V_{CEsat}		15		80	25 125	1,5	1,80	2,5	V
Collector-emitter cut-off current	I_{CES}		0	1200		25 125			100	μA
Gate-emitter leakage current	I_{GES}		20	0		25 125			500	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}							8600		pF
Output capacitance	C_{oes}	f=1000 KHz	0	30		25		360		
Reverse transfer capacitance	C_{res}							200		
Gate charge	Q_g		15	600	80	25		740		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						0,50		K/W
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H-Bridge Diode

Static

Forward voltage	V_F				50	25 150		2,19 2,21	2,54	V
Reverse leakage current	I_r			1200		25 150			60 8800	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4 W/mK$						0,94		K/W
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Characteristic Values

Parameter	Symbol	Conditions					Value			Unit	
		V_{GE} [V]	V_{GS} [V]	V_{CE} [V]	V_{GS} [V]	V_r [V]	I_C [A]	I_D [A]	I_F [A]		T_j [°C]

Thermistor

Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R100=1484 Ω				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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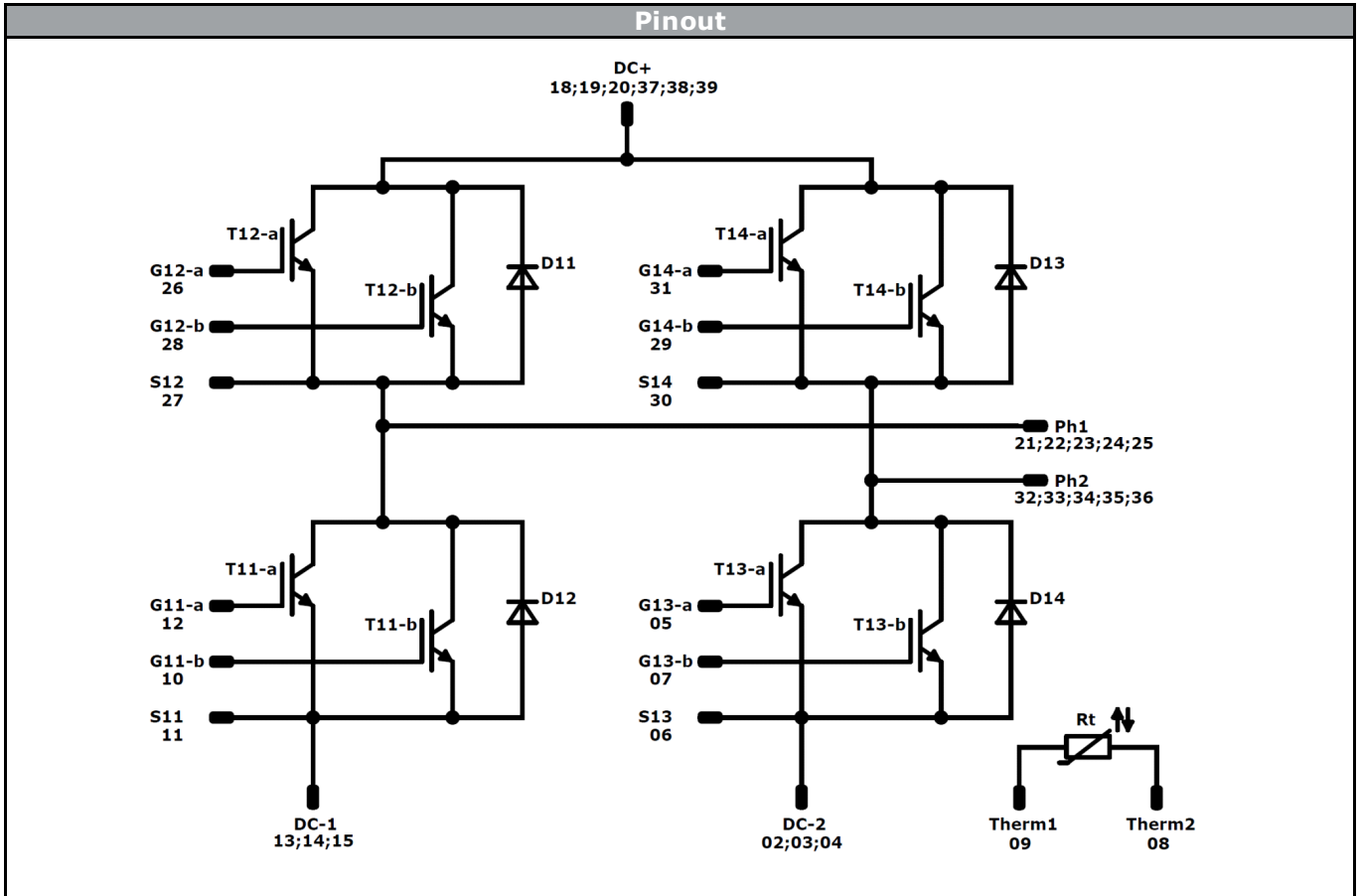
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Ordering Code & Marking								
Version			Ordering Code					
without thermal paste 12mm Press-fit housing			10-PY124PA080FV-L589F88Y					
without thermal paste 12mm Solder Pin housing			10-FY124PA080FV-L589F88					
NN-NNNNNNNN NNNN-TTTTTVV Vinco LLLLL WWYY SSSS UL		Text	Name		Type&Ver	Date code	Vinco&Lot	Serial&UL
			NN-NNNNNNNNNNNNNN		TTTTTTVV	WWYY	Vinco LLLLL	SSSS UL
			Type&Ver	Lot number	Serial	Date code		
Datamatrix			TTTTTTVV	LLLLL	SSSS	WWYY		

Outline							
Pin table [mm]							
Pin	X	Y	Function				
1			Not assembled				
2	46,3	0	DC-2				
3	43,6	2,7	DC-2				
4	43,6	0	DC-2				
5	39,2	1	G13-a				
6	36,2	0	S13				
7	33,2	1	G13-b				
8	28,8	0	Therm2				
9	23,8	0	Therm1				
10	19,4	1	G11-b				
11	16,4	0	S11				
12	13,4	1	G11-a				
13	9	2,7	DC-1				
14	9	0	DC-1				
15			Not assembled				
16	6,3	0	DC-1				
17			Not assembled				
Pin table [mm]							
Pin	X	Y	Function				
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				
30	34,35	28,6	S14				
31	37,35	28,6	G14-a				
32	41,8	28,6	Ph2				
33	44,5	28,6	Ph2				
34	47,2	28,6	Ph2				
35	49,9	28,6	Ph2				
36	52,6	28,6	Ph2				
37	52,6	14,9	DC+				
38	52,6	12,2	DC+				
39	52,6	9,5	DC+				
40			Not assembled				



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Identification

ID	Component	Voltage	Current	Function	Comment
T11a, T11b, T12a, T12b, T13a, T13b, T14a, T14b	IGBT	1200V	2x40A	H-Bridge Switch	
D11, D12, D13, D14	FWD	1200V	50A	H-Bridge Diode	
Rt	NTC	-	-	Thermistor	



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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.

Document No.:	Date:	Modification:	Pages
10-PY124PA080FV-L589F88Y -T2-14	10 Feb. 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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