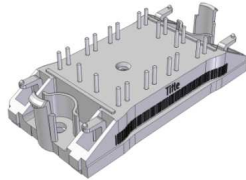
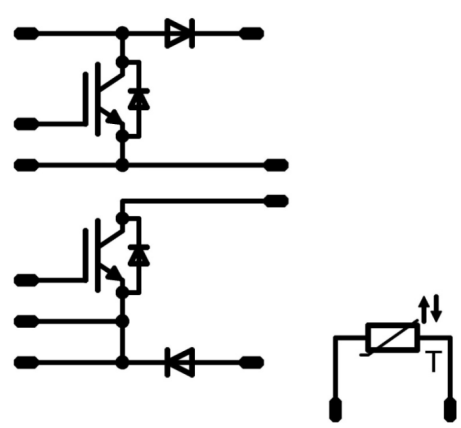




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<i>flow</i> BOOST 0 symmetric	650 V / 50 A
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> High efficiency symmetric boost Ultra high switching frequency Clip-In PCB mounting Low Inductance Layout 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">flow 0 12mm housing</div> <div style="text-align: center;">  </div>
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Target applications</div> <ul style="list-style-type: none"> Solar inverters UPS Power supplies 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Schematic</div> <div style="text-align: center;">  </div>
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> 10-FZ07NBA050SM-P915L58 	

Maximum Ratings

T_j = 25°C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
Boost Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_f = T_{jmax}$ $T_s = 80^\circ\text{C}$	43	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	150	A
Total power dissipation	P_{tot}	$T_f = T_{jmax}$ $T_s = 80^\circ\text{C}$	84	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
Boost Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	49	A
Repetitive peak forward current	I_{FRM}		100	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	62	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
Boost Inverse Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	19	A
Repetitive peak forward current	I_{FRM}		30	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	35	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Module Properties

Parameter	Symbol	Conditions	Value	Unit
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Thermal Properties

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

Isolation Properties

Isolation voltage	V_{isol}	DC voltage	$t_p=2s$	4000	V
Creepage distance				min 12,7	mm
Clearance				9,53	mm
Comparative Tracking Index	CTI			>200	



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Characteristic Values

Boost 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	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,0005	25 125	3,3	4	4,7	V
Collector-emitter saturation voltage	V_{CEsat}		15		50	25 125 150	1	1,82 2,00 -	2,22	V
Collector-emitter cut-off current	I_{CES}		0	650		25 125			40	μA
Gate-emitter leakage current	I_{GES}		20	0		25 125			120	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	f=1 MHz	0	25	25			3000		pF
Output capacitance	C_{oes}							50		
Reverse transfer capacitance	C_{res}							11		
Gate charge	Q_g		15	520	50	25		120		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Phase-Change Material $\lambda=3,4W/mK$						1,13		K/W
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Boost Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			
Static										
Forward voltage	V_F				50	25 125 150		1,35	1,77	V
Reverse leakage current	I_r			650		25 150			2,65	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Phase-Change Material $\lambda=3,4W/mK$						1,54		K/W
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Boost Inverse Diode

Parameter	Symbol	Conditions					Value			Unit
				V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max	
Static										
Forward voltage	V_F				15	25 125 150		1,79 1,67 -	1,87	V
Reverse leakage current	I_r			650		25 150			0,18 -	μA
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	Phase-Change Material $\lambda=3,4W/mK$						2,74		K/W

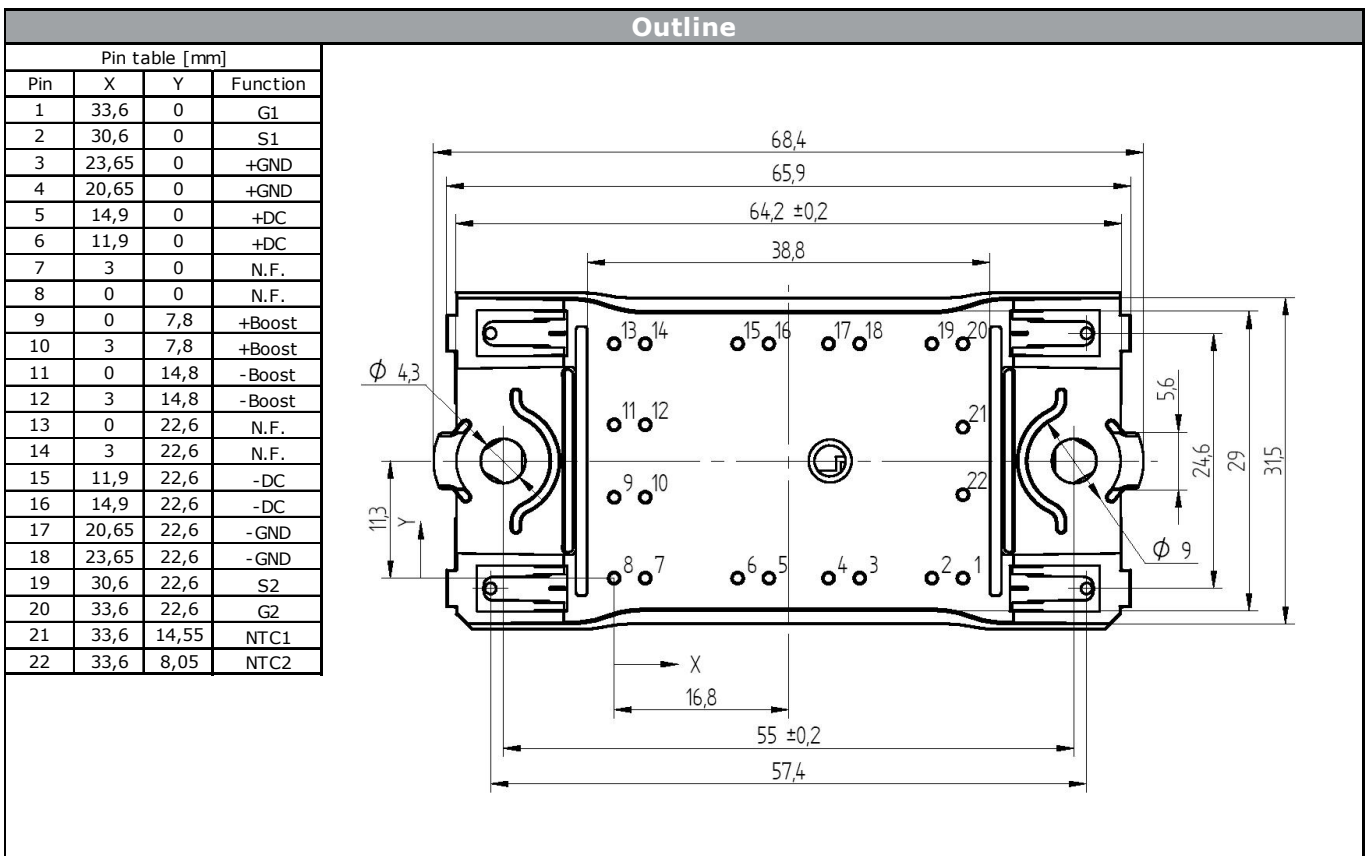
Thermistor

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	



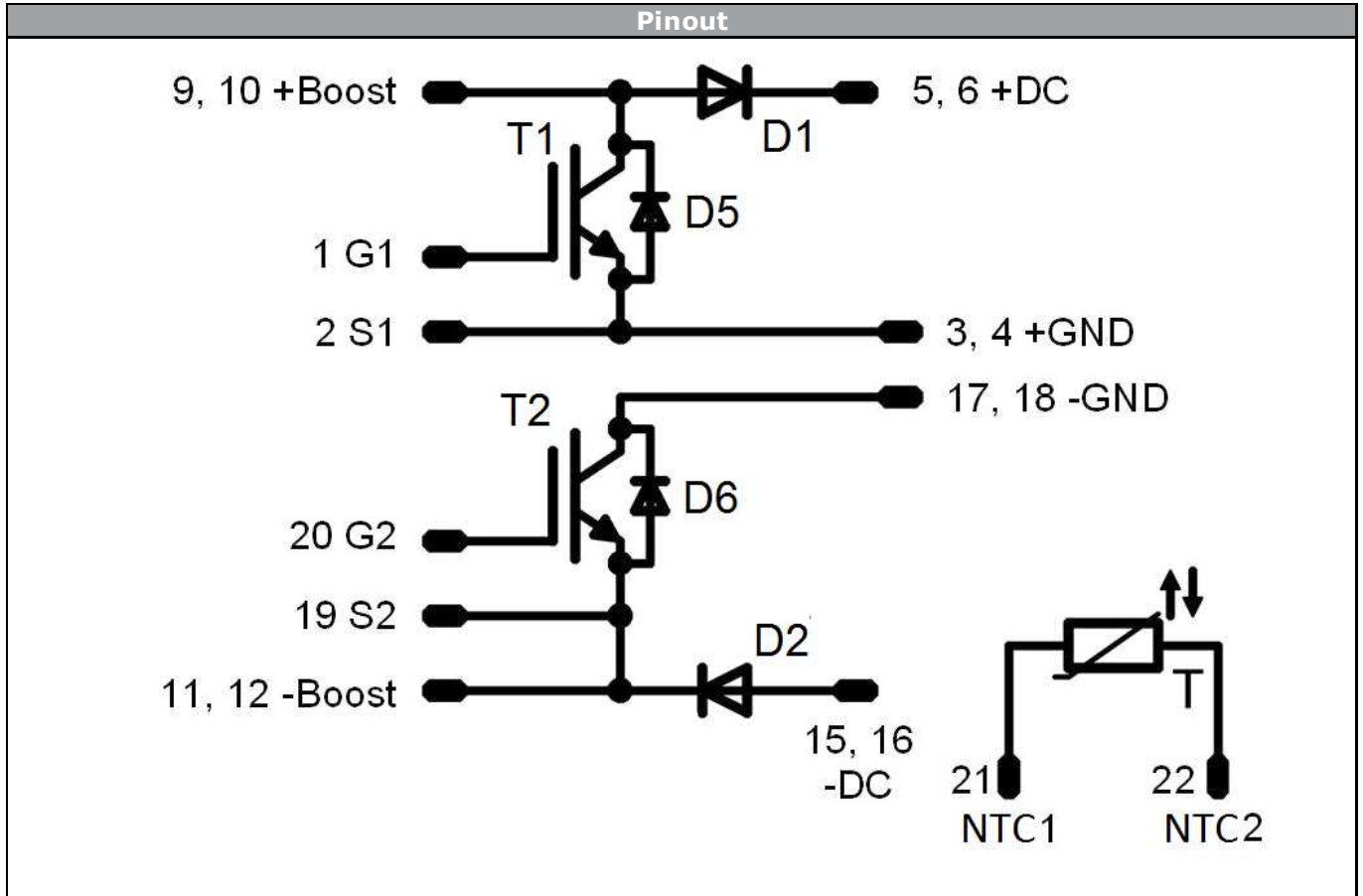
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Ordering Code & Marking							
Version	Ordering Code	in DataMatrix as	in packaging barcode as				
without thermal paste 12mm housing	10-FZ07NBA050SM-P915L58	P915L58	P915L58				
NN-NNNNNNNNNNNNNN NNNNNNNN WWYY UL Vinco LLLLL SSSS		Text	Name	Date code	UL & Vinco	Lot	Serial
			NN-NNNNNNNNNNNNNN-NNNNNNNN	WWYY	UL Vinco	LLLLL	SSSS
		Datamatrix	Type&Ver	Lot number	Serial	Date code	
			TTTTTTTV	LLLLL	SSSS	WWYY	





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Identification					
ID	Component	Voltage	Current	Function	Comment
T1,T2	IGBT	650V	50A	Boost Switch	IGC16T65U8Q
D1,D2	FWD	650V	50A	Boost Diode	IDC13D65Q8S
D4,D5	FWD	650V	15A	Boost Inverse Diode	SIDC05D65C
T	NTC	-	-	Thermistor	



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

Handling instruction
Handling instructions for <i>flow</i> 0 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-FZ07NBA050SM-P915L58-T1-14	29 Jun. 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.

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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.