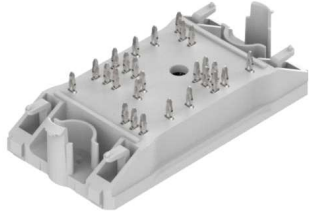
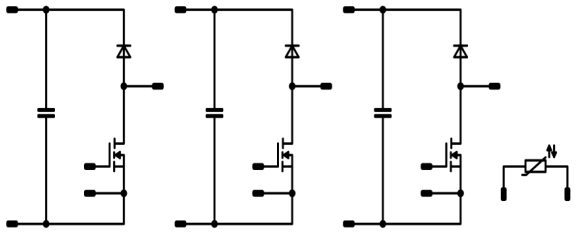




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<i>flow</i> 3xBOOST 0 SiC	1200 V / 40 mΩ
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Features</p> <ul style="list-style-type: none"> 3x Booster with SiC MOSFET and SiC Diode Ultrafast switching Low inductive design </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Solar UPS </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Types</p> <ul style="list-style-type: none"> 10-PZ123BA040MR01-M909L68Y </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;"><i>flow</i> 0 12mm housing</p>  </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Schematic</p>  </div>

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Boost Switch				
Drain-source voltage	V_{DSS}		1200	V
Drain current	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	31	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	137	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	67	W
Gate-source voltage	V_{GSS}		-4/22	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
Boost FWD				
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	19	A
Repetitive peak forward current	I_{FRM}		50	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	56	W
Maximum Junction Temperature	T_{jmax}		175	°C
DC Link Capacitance				
Maximum DC voltage	V_{MAX}		1000	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 Test Voltage $t_p = 2\text{ s}$	4000	V
Creepage distance			min. 12,7	mm
Clearance			10,19	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]	I_C [A] I_D [A]	T_j [°C]	Min	Typ	Max		

Boost Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		18		20	25 125 150		39 52 60	50	mΩ
Gate-source threshold voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}$			0,01	25	2,7		5,6	V
Gate to Source Leakage Current	I_{GSS}		22 -4	0		25			100 -100	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	1200		25			10	μA
Internal gate resistance	r_g							7		Ω
Gate charge	Q_g							107		nC
Gate to source charge	Q_{GS}		18	600	20	25		22		
Gate to drain charge	Q_{GD}							41		
Short-circuit input capacitance	C_{iss}							1337		pF
Short-circuit output capacitance	C_{oss}	f = 1 MHz	0	800		25		76		
Reverse transfer capacitance	C_{rss}							27		

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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Boost FWD

Static

Forward voltage	V_F				10	25 125 150		1,40 1,70 1,83	1,6	V
Reverse leakage current	I_r			1200		25			200	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						1,7		K/W
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Vincotech

Characteristic Values

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

DC Link Capacitance

Capacitance	C						47			nF
Tolerance							-10		+10	%


Thermistor

Thermistor

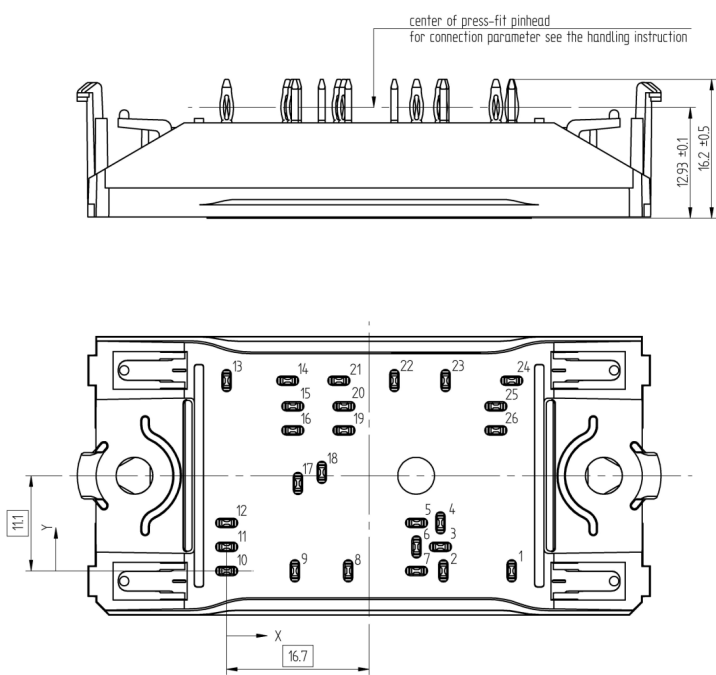
Rated resistance	R				25		22			k Ω
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$			100		-5		5	%
Power dissipation	P				25		5			mW
Power dissipation constant					25		1,5			mW/K
B-value	$B_{(25/50)}$	Tol. $\pm 1\%$			25		3962			K
B-value	$B_{(25/100)}$	Tol. $\pm 1\%$			25		4000			K
Vincotech NTC Reference									I	



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Ordering Code & Marking						
Version				Ordering Code		
without thermal paste 12mm housing whit Press-fit				10-PZ123BA040MR01-M909L68Y		
						
Text	Name		Date code	UL & VIN	Lot	Serial
	NN-NNNNNNNNNNNNNN-TTTTT		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTTTV	LLLLL	SSSS	WWYY		

Pin table [mm]			
Pin	X	Y	Function
1	33,4	0	DC+
2	25,4	0	DC-
3	25,05	2,8	E5
4	25,05	5,6	G5
5	22,25	5,6	G3
6	22,25	2,8	E3
7	22,25	0	DC-
8	14,25	0	DC+
9	8	0	DC+
10	0	0	DC-
11	0	2,8	E1
12	0	5,6	G1
13	0	22,2	PH11
14	7,15	22,2	PH12
15	7,75	19,2	G2
16	7,75	16,4	E2
17	8,35	10,2	NTC1
18	11,15	11,5	NTC2
19	13,75	16,4	E4
20	13,75	19,2	G4
21	13,15	22,2	PH21
22	19,65	22,2	PH22
23	25,65	22,2	PH31
24	33,4	22,2	PH32
25	31,55	19,2	G6
26	31,55	16,4	E6



center of press-fit pinhead
for connection parameter see the handling instruction

12,93 ±0,1
16,2 ±0,15

16,7

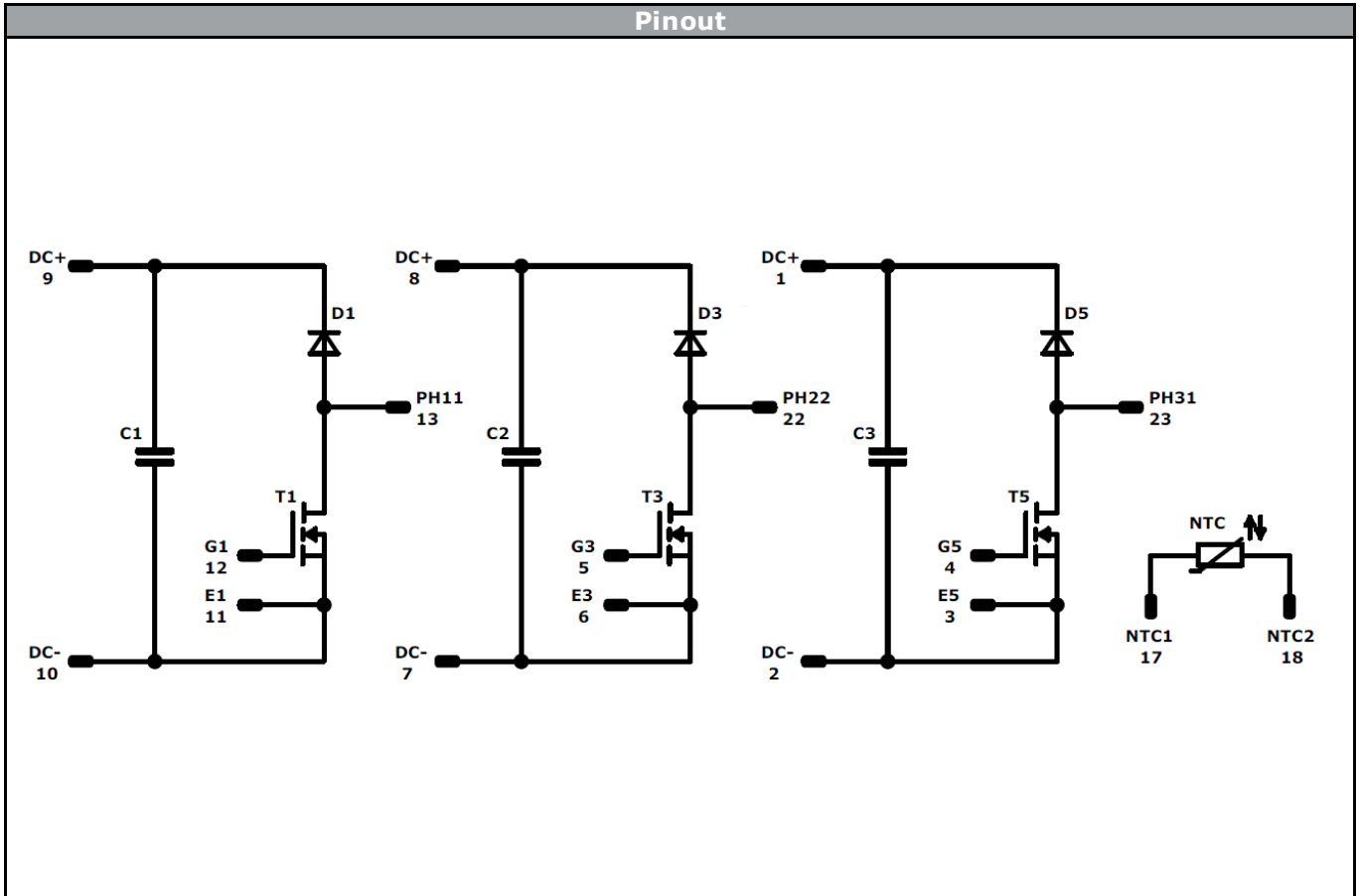
11,1
Y
X

Tolerance of pinpositions: ±0,5mm at the end of pins
Dimension of coordinate axis is only offset without tolerance



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Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T1,T3,T5	MOSFET	1200V	40 mΩ	Boost Switch	
D1,D3,D5	FWD	1200V	10 A	Boost Diode	
C1,C2,C3	Capacitor	1000V		DC Link Capacitance	
NTC	NTC			Thermistor	




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

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

Package data
Package data for <i>flow 0</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-PZ123BA040MR01-M909L68Y-T1-14	07 Apr. 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.