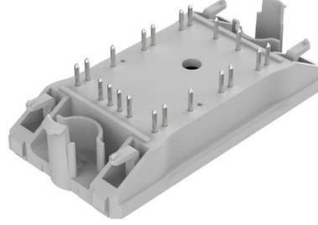
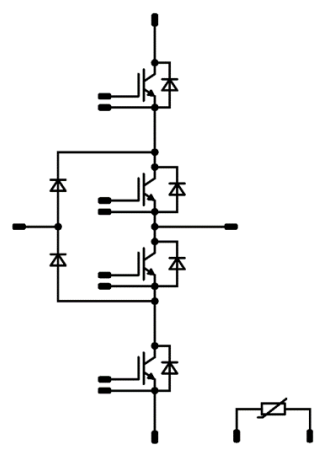




Vincotech

<i>flowNPC 0</i>	650 V / 100 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Features</p> <ul style="list-style-type: none"> Latest High Efficient IGBT Technology Optimized Chipset for Active Power High Reactive Power Capability </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Industrial Drives Solar Inverters 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-FZ07NIA100S502-P927F58 </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;"><i>flow 0 12 mm housing</i></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
Buck Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	82	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	117	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C



Vincotech

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Buck Diode				
Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	80	A
Repetitive peak forward current	I_{FRM}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	113	W
Maximum junction temperature	T_{jmax}		175	°C
Boost Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	82	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	117	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C
Boost Diode				
Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	80	A
Repetitive peak forward current	I_{FRM}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	113	W
Maximum junction temperature	T_{jmax}		175	°C
Boost Sw.Inv.Diode				
Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	80	A
Repetitive peak forward current	I_{FRM}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	113	W
Maximum junction temperature	T_{jmax}		175	°C



Vincotech

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
-----------	--------	-----------	-------	------

Module Properties

Thermal Properties

Storage temperature	T_{stg}		-40...+125	°C
Operation temperature under switching condition	T_{top}		-40...(T _{max} - 25)	°C

Isolation Properties

Isolation voltage	V_{isol}	DC Test Voltage* $t_p = 2\text{ s}$	6000	V
		AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			min. 12,7	mm
Clearance			9,15	mm
Comparative Tracking Index	CTI		> 200	

*100 % tested in production



Vincotech

Characteristic Values

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

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	25 125 150		1,39 1,48 1,51	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}							6200		pF
Output capacitance	C_{oes}	$f = 1$ Mhz	0	25		25		176		
Reverse transfer capacitance	C_{res}							24		
Gate charge	Q_g		15	520	100	25		240		nC

Thermal

Parameter	Symbol	$\lambda_{paste} = 3,4$ W/mK (PSX)	V_{GS} [V]	V_{CE} [V]	I_D [A]	T_j [°C]	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$							0,81		K/W

Buck Diode

Static

Parameter	Symbol	V_{GS} [V]	V_{CE} [V]	I_D [A]	T_j [°C]	Min	Typ	Max	Unit
Forward voltage	V_F			100	25 125 150		1,61 1,58 1,57	1,92	V
Reverse leakage current	I_R			650	25			5,3	μA

Thermal

Parameter	Symbol	$\lambda_{paste} = 3,4$ W/mK (PSX)	V_{GS} [V]	V_{CE} [V]	I_D [A]	T_j [°C]	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$							0,84		K/W



Vincotech

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		

Boost Switch

Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,001	25	3,2	4	4,8	V
Collector-emitter saturation voltage	V_{CESat}		15		100	25 125 150		1,39 1,48 1,51	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}							6200		pF
Output capacitance	C_{oes}	$f = 1$ Mhz	0	25		25		176		
Reverse transfer capacitance	C_{res}							24		
Gate charge	Q_g		15	520	100	25		240		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,81		K/W
-------------------------------------	---------------	---------------------------------------	--	--	--	--	--	------	--	-----

Boost Diode

Static

Forward voltage	V_F				100	25 125 150		1,61 1,58 1,57	1,92	V
Reverse leakage current	I_R			650		25			5,3	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,84		K/W
-------------------------------------	---------------	---------------------------------------	--	--	--	--	--	------	--	-----



Vincotech

Characteristic Values

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

Boost Sw.Inv.Diode

Static

Parameter	Symbol	V_{GS} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	Unit
Forward voltage	V_F			100	25 125 150		1,61 1,58 1,57	1,92	V
Reverse leakage current	I_R		650		25			5,3	μA

Thermal


Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)		0,84		K/W

Thermistor

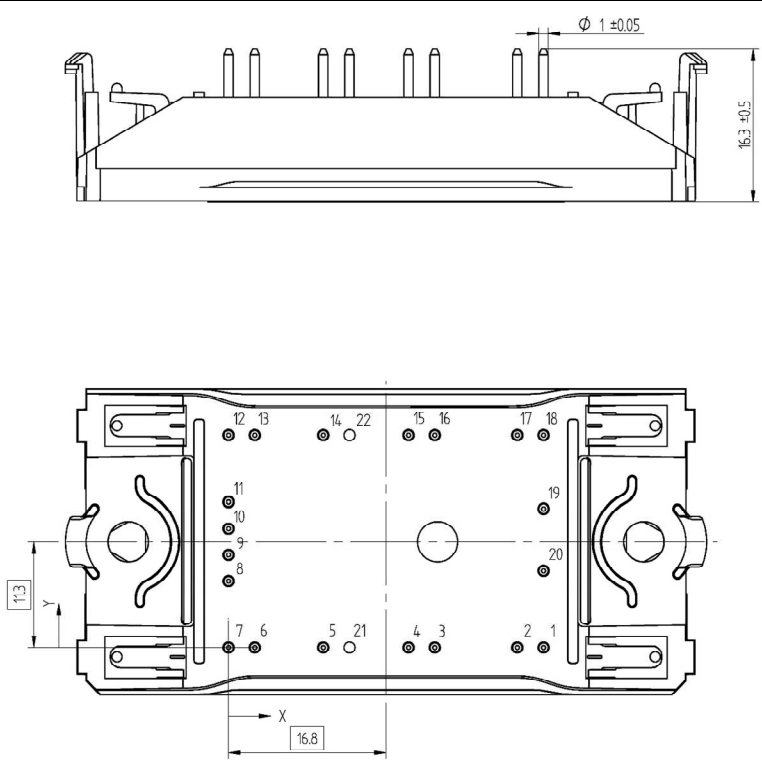
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Rated resistance	R		25	22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$	100	-5	5	%
Power dissipation	P		25	5		mW
Power dissipation constant			25	1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ± 1 %	25	3962		K
B-value	$B_{(25/100)}$	Tol. ± 1 %	25	4000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



Vincotech

Ordering Code & Marking						
Version			Ordering Code			
without thermal paste 12 mm housing with solder pins			10-FZ07NIA100S502-P927F58			
NN-NNNNNNNNNNNN TTTTIV WWYY UL VIN LLLL SSSS						
Text	Name		Date code	UL & VIN	Lot	Serial
	NN-NNNNNNNNNNNN-TTTTIV		WWYY	UL VIN	LLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTIV	LLLL	SSSS	WWYY		

Pin table			
Pin	X	Y	Function
1	33,6	0	G12
2	30,8	0	S12
3	22	0	DC-
4	19,2	0	DC-
5	10,1	0	GND
6	2,8	0	S14
7	0	0	G14
8	0	7,1	Ph
9	0	9,9	Ph
10	0	12,7	Ph
11	0	15,5	Ph
12	0	22,6	G13
13	2,8	22,6	S13
14	10,1	22,6	GND
15	19,2	22,6	DC+
16	22	22,6	DC+
17	30,8	22,6	S11
18	33,6	22,6	G11
19	33,6	14,8	Therm1
20	33,6	8,2	Therm2
21	Not assembled		
22	Not assembled		

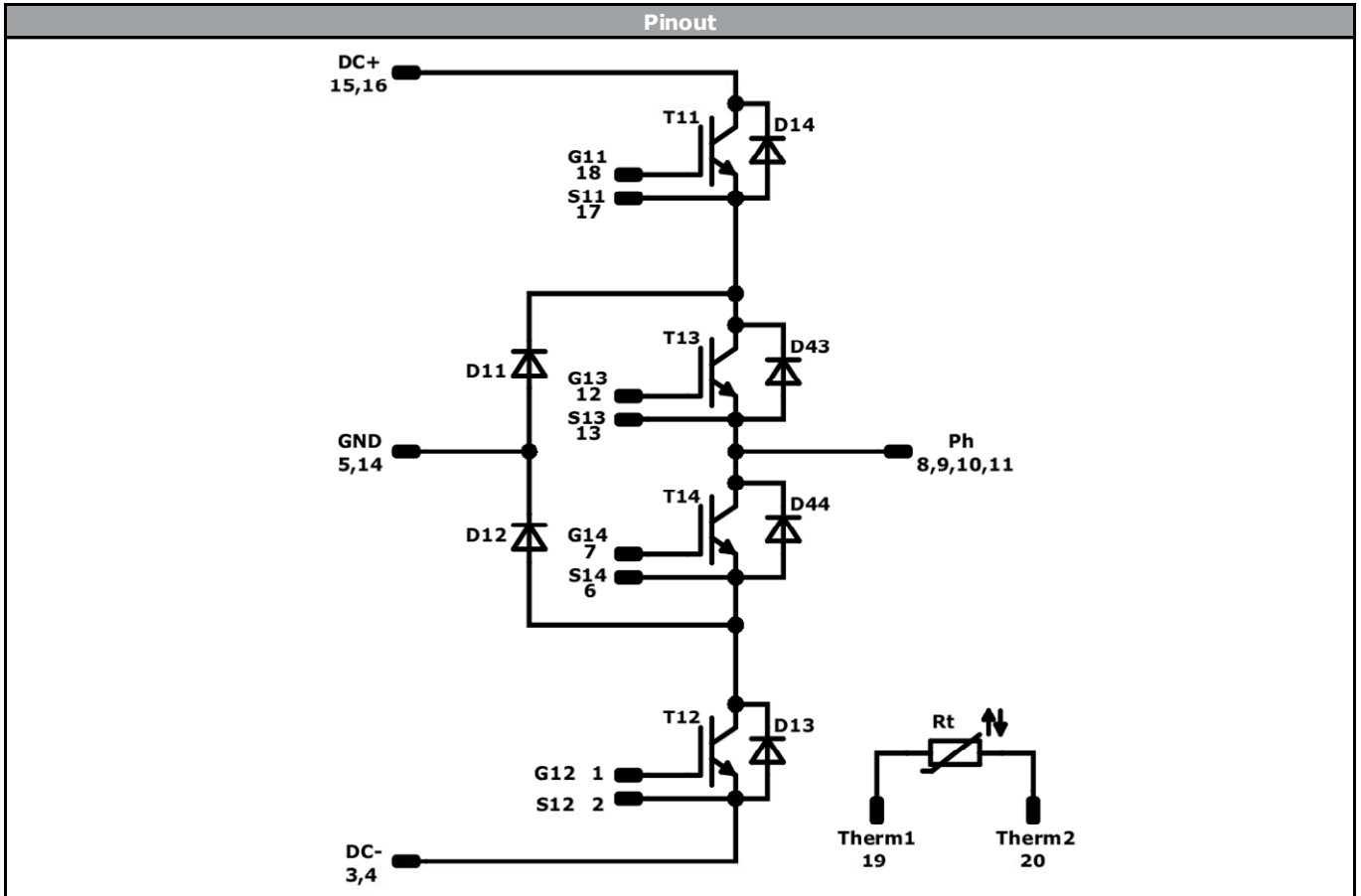


$\phi 1 \pm 0.05$
 16.3 ± 0.2
 16.8
 13

Tolerance of pinpositions: $\pm 0.5\text{mm}$ at the end of pins
 Dimension of coordinate axis is only offset without tolerance



Vincotech



Identification					
ID	Component	Voltage	Current	Function	Comment
T11, T12	IGBT	650 V	100 A	Buck Switch	
D11, D12	FWD	650 V	100 A	Buck Diode	
T13, T14	IGBT	650 V	100 A	Boost Switch	
D13, D14	FWD	650 V	100 A	Boost Diode	
D43, D44	FWD	650 V	100 A	Boost Sw.Inv.Diode	
Rt	NTC			Thermistor	




Vincotech

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-FZ07NIA100S502-P927F58-T2-14	29 May. 2018	Rth and static values changed	2, 4, 5, 6

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.

DISCLAIMER

The information, specifications, procedures, methods and recommendations herein (together "information") are presented by Vincotech to reader in good faith, are believed to be accurate and reliable, but may well be incomplete and/or not applicable to all conditions or situations that may exist or occur. Vincotech reserves the right to make any changes without further notice to any products to improve reliability, function or design. No representation, guarantee or warranty is made to reader as to the accuracy, reliability or completeness of said information or that the application or use of any of the same will avoid hazards, accidents, losses, damages or injury of any kind to persons or property or that the same will not infringe third parties rights or give desired results. It is reader's sole responsibility to test and determine the suitability of the information and the product for reader's intended use.

LIFE SUPPORT POLICY

Vincotech products are not authorised for use as critical components in life support devices or systems without the express written approval of Vincotech.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in labelling can be reasonably expected to result in significant injury to the user.
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.