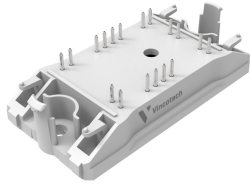
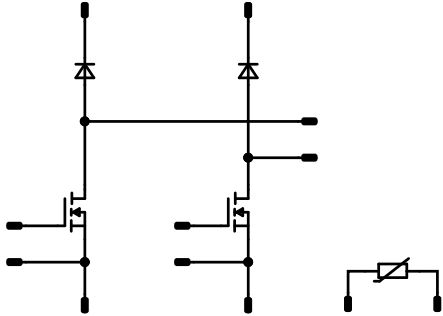




flowBOOST 0 dual		600 V / 40 A	
Features		flow 0 12 mm housing	
<ul style="list-style-type: none">• High efficiency dual booster• Low Inductance Layout• Ultra fast switching frequency• Integrated temperature sensor			
Target applications		Schematic	
<ul style="list-style-type: none">• Power Supply• Solar Inverters			
Types			
<ul style="list-style-type: none">• 10-FZ07B2A042UF-PB53L98			



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Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
Boost Switch				
Drain-source voltage	V_{DSS}		650	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	30	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	125	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	45	W
Gate-source voltage	V_{GSS}		±25	V
Maximum Junction Temperature	T_{jmax}		175	°C

Boost Diode

Peak repetitive reverse voltage	V_{RRM}		650	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	20	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	92	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, $t_p = 10\text{ ms}$	180	A
Surge current capability	I^2t		162	A ² s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	57	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 Test Voltage $t_p = 2\text{ s}$	6000	V
Isolation voltage	V_{isol}	AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			>12,7	mm
Clearance			9,1	mm
Comparative Tracking Index	CTI		≥ 200	



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Characteristic Values

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

Boost Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		12		30	25 125		42 59	52	mΩ
Gate-source threshold voltage	$V_{GS(th)}$		0		0,01	25	4	5	6	V
Gate to Source Leakage Current	I_{GSS}		20	0		25		6	20	μA
Zero Gate Voltage Drain Current	I_{DSS}		0	650		25		0,7	150	μA
Internal gate resistance	r_g							4,5		Ω
Gate charge	Q_g		-5/12	400	30	25		43		nC
Short-circuit input capacitance	C_{iss}	$f = 100$ kHz	0	100	0	25		1500		pF
Short-circuit output capacitance	C_{oss}							200		
Reverse transfer capacitance	C_{rss}							2,2		
Diode forward voltage	V_{SD}		0		20	25		1,5	1,75	V

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						2,11		K/W
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Boost Diode

Static

Forward voltage	V_F				20	25		1,5	1,8	V
Reverse leakage current	I_R	$V_r = 650$ V				25		24	120	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						1,68		K/W
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Characteristic Values

Parameter	Symbol	Conditions					Values			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		

Thermistor

Static


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

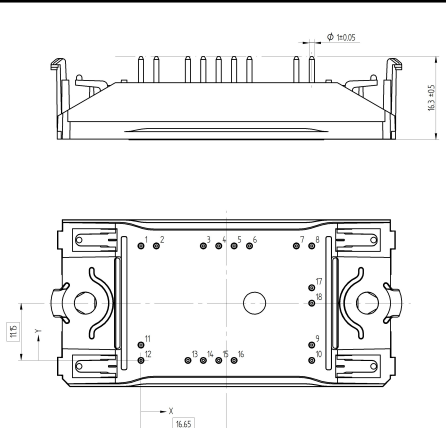


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Ordering Code	
Version	Ordering Code
Without thermal paste	10-FZ07B2A042UF-PB53L98
With thermal paste (4,4 W/mK, PTM6000)	10-FZ07B2A042UF-PB53L98-/-7/
With thermal paste (3,4 W/mK, PSX-P7)	10-FZ07B2A042UF-PB53L98-/-3/

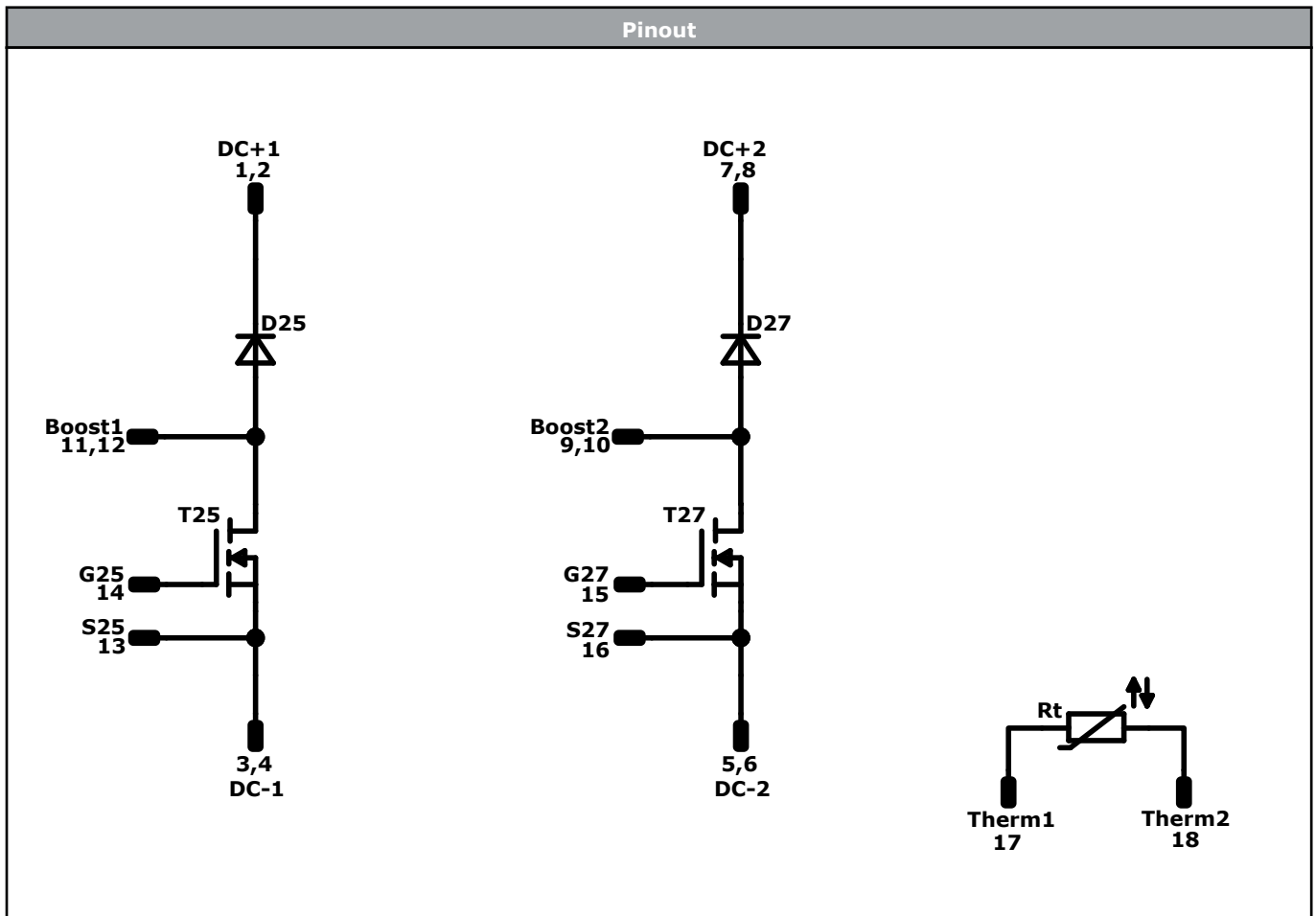
Marking						
	Text	Name NN-NNNNNNNNNNNNNN- TTTTTTVV	Date code WWYY	UL & VIN UL VIN	Lot LLLLL	Serial SSSS
	Datamatrix	Type&Ver TTTTTTVV	Lot number LLLLL	Serial SSSS	Date code WWYY	

Pin table [mm]				Outline	
Pin	X	Y	Function		
1	0	22,3	DC+1		
2	3	22,3	DC+1		
3	12,15	22,3	DC-1		
4	15,15	22,3	DC-1		
5	18,15	22,3	DC-2		
6	21,15	22,3	DC-2		
7	30,3	22,3	DC+2		
8	33,3	22,3	DC+2		
9	33,3	3	Boost2		
10	33,3	0	Boost2		
11	0	3	Boost1		
12	0	0	Boost1		
13	9,15	0	S25		
14	12,15	0	G25		
15	15,15	0	G27		
16	18,15	0	S27		
17	33,3	14,15	Therm1		
18	33,3	11,15	Therm2		

Tolerance of pinposition: ±0.5mm 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
T25, T27	MOSFET	650 V	42 mΩ	Boost Switch	
D25, D27	FWD	650 V	20 A	Boost Diode	
Rt	Thermistor			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.

Vincotech thermistor reference
See Vincotech thermistor reference table at 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-FZ07B2A042UF-PB53L98-T1-14	14 Jun. 2021		

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.