



Vincotech

# 10-FY10B2A100S7-LP26L06

target datasheet

for virtual products created by Vincotech Product Creator, only for evaluation purposes,  
no commitment for product development!

**flowBOOST 1 dual**

**950 V / 100 A**

### Features

- Dual Booster
- High Performance Flying Capacitor Topology
- Latest IGBT & SiC Technology
- Integrated flying capacitors
- Integrated DC link capacitors
- Integrated NTC
- Low inductance housing

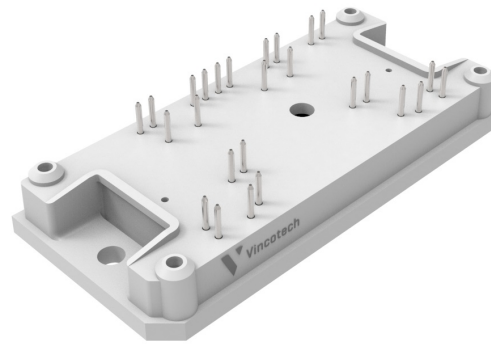
### Target applications

- Solar Inverters

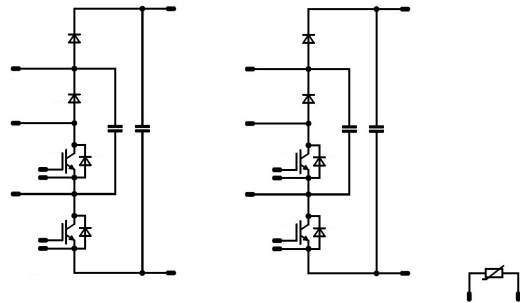
### Types

- 10-FY10B2A100S7-LP26L06

### flow 1 12 mm housing



### Schematic





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## Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
<b>Boost Switch</b>				
Collector-emitter voltage	$V_{CES}$		950	V
Collector current	$I_C$		100	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	125	W
Gate-emitter voltage	$V_{GES}$		$\pm 20$	V
Maximum junction temperature	$T_{jmax}$		175	°C

## Boost Diode

Peak repetitive reverse voltage	$V_{RRM}$		1200	V
Continuous (direct) forward current	$I_F$		30	A
Repetitive peak forward current	$I_{FRM}$	$t_p$ limited by $T_{jmax}$	141	A
Surge (non-repetitive) forward current	$I_{FSM}$	Single Half Sine Wave, $t_p = 10\text{ ms}$ $T_j = 0\text{ °C}$	213	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	89	W
Maximum junction temperature	$T_{jmax}$		175	°C

## Boost Sw. Protection Diode

Peak repetitive reverse voltage	$V_{RRM}$		1200	V
Continuous (direct) forward current	$I_F$		35	A
Repetitive peak forward current	$I_{FRM}$	$t_p$ limited by $T_{jmax}$	70	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	77	W
Maximum junction temperature	$T_{jmax}$		175	°C

## Flying Capacitor

Maximum DC voltage	$V_{MAX}$		1000	V
Operation Temperature	$T_{op}$		0 ... 125	°C



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## Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
<b>Capacitor (DC)</b>				
Maximum DC voltage	$V_{MAX}$		1500	V
Operation Temperature	$T_{op}$		0 ... 125	°C



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## Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
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### Module Properties

#### Thermal Properties

Storage temperature	$T_{\text{stg}}$		-40...+125	°C
Operation temperature under switching condition	$T_{\text{jop}}$		-40...+( $T_{\text{jmax}} - 25$ )	°C

#### Isolation Properties

Isolation voltage	$V_{\text{isol}}$	DC Test Voltage $t_p = 2\text{ s}$	6000	V
Isolation voltage	$V_{\text{isol}}$	AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			min. 12,7	mm
Clearance			12,15	mm
Comparative Tracking Index	CTI		$\geq 600$	



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### Characteristic Values

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

#### Boost Switch

##### Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = V_{GE}$			0,0017	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	$V_{CEsat}$		15		100	25 150		1,9 2,15	2,35	V
Collector-emitter cut-off current	$I_{CES}$		0	950		25			2	μA
Gate-emitter leakage current	$I_{GES}$		20	0		25			100	nA
Input capacitance	$C_{ies}$	f =	0	25		25		6500		pF
Reverse transfer capacitance	$C_{res}$							20		pF

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,76		K/W
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#### Boost Diode

##### Static

Forward voltage	$V_F$				30	25		1,5	1,8	V
Reverse leakage current	$I_R$			1200		25		90	750	μA

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						1,07		K/W
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**10-FY10B2A100S7-LP26L06**  
target datasheet

### 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		

#### Boost Sw. Protection Diode

##### Static

Forward voltage	$V_F$				35	25 125 150		1,65 1,65 1,65	2,1	V
Reverse leakage current	$I_R$				1200	25			40	μA

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4 \text{ W/mK}$ (PSX)						1,24		K/W
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#### Flying Capacitor

##### Static

Capacitance	$C$							47		nF
Tolerance								-10	10	%

#### Capacitor (DC)

##### Static

Capacitance	$C$							33		nF
Tolerance								-10	10	%
Dissipation factor		$f = 1 \text{ kHz}$				25		2,5		%



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### Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
		$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_{CE}$ [V]	$T_j$ [°C]	Min	Typ	Max	

### Thermistor

#### Static

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



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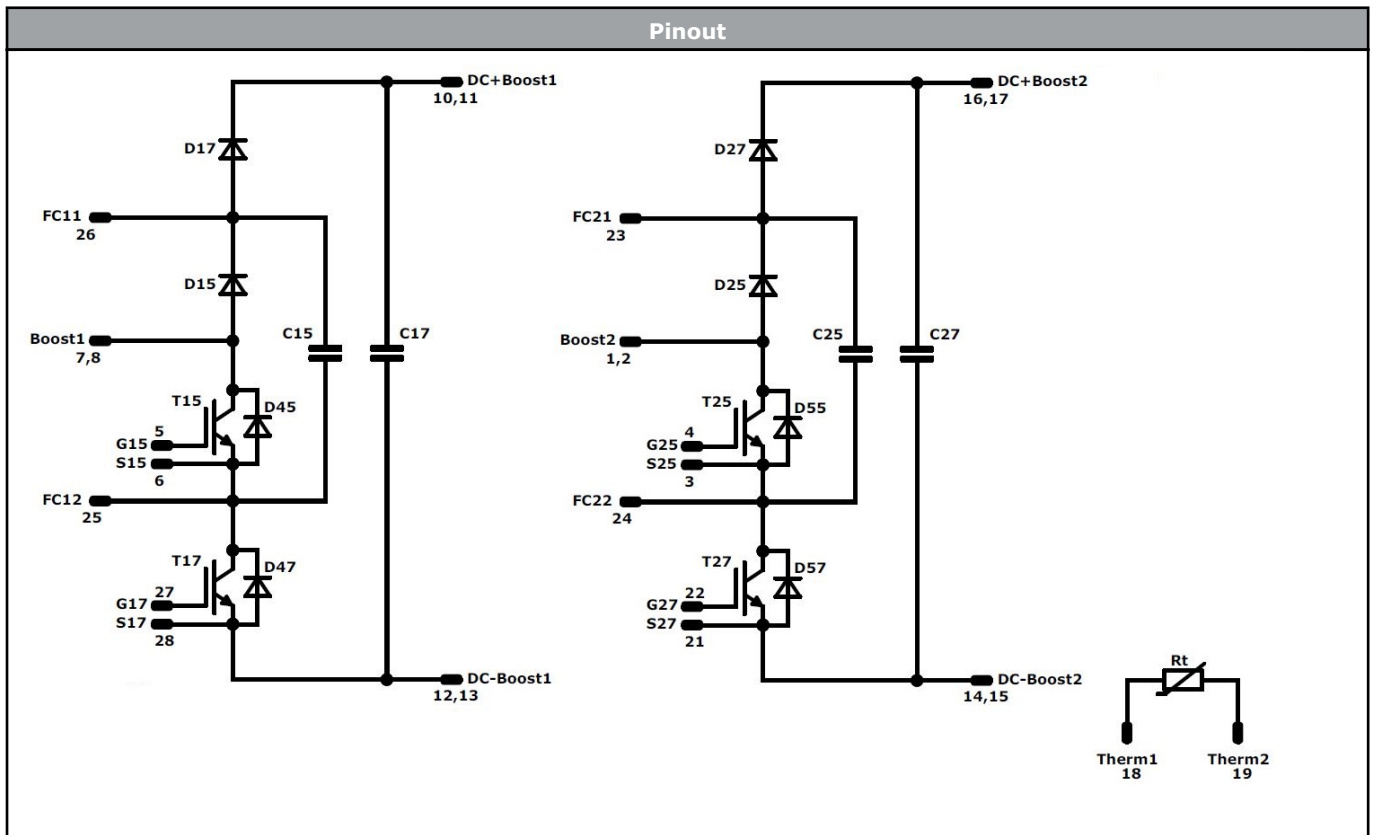
Ordering Code & Marking								
Version			Ordering Code					
without thermal paste with 12 mm housing with solder pin			10-FY10B2A100S7-LP26L06					
with thermal paste with 12 mm housing with solder pin			10-FY10B2A100S7-LP26L06-/3/					
NN-NNNNNNNNNNNNNN TTTTITTVV WWYY UL VIN LLLLL SSSS			Name		Date code	UL & VIN	Lot	Serial
			NN-NNNNNNNNNNNNNN-TTTTITTVV		WWYY	UL VIN	LLLLL	SSSS
			Type&Ver	Lot number	Serial	Date code		
			TTTTITTVV	LLLLL	SSSS	WWYY		

Pin table [mm]				Outline	
Pin	X	Y	Function		
1	52,5	2,7	Boost2		
2	52,5	0	Boost2		
3	46	0	S25		
4	43	1,4	G25		
5	9,5	1,4	G15		
6	6,5	0	S15		
7	0	0	Boost1		
8	0	2,7	Boost1		
9	not assembled				
10	8,6	28,5	DC+Boost1		
11	11,3	28,5	DC+Boost1		
12	20,3	28,5	DC-Boost1		
13	23	28,5	DC-Boost1		
14	26	28,5	DC-Boost2		
15	28,7	28,5	DC-Boost2		
16	37,7	28,5	DC+Boost2		
17	40,4	28,5	DC+Boost2		
18	49,5	28,5	Therm1		
19	52,5	28,5	Therm2		
20	not assembled				
21	42,1	8,35	S27		
22	39,1	8,85	G27		
23	38,65	23,4	FC21		
24	32,25	23,4	FC22		
25	16,75	23,4	FC12		
26	10,35	23,4	FC11		
27	13,4	8,85	G17		
28	10,4	8,35	S17		





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<b>Identification</b>					
<b>ID</b>	<b>Component</b>	<b>Voltage</b>	<b>Current</b>	<b>Function</b>	<b>Comment</b>
T15, T17, T25, T27	IGBT	950 V	100 A	Boost Switch	
D15, D17, D25, D27	FWD	1200 V	30 A	Boost Diode	
D45, D47, D55, D57	FWD	1200 V	35 A	Boost Sw. Protection Diode	
C15, C25	Capacitor	1000 V		Flying Capacitor	
C17, C27	Capacitor	1500 V		Capacitor (DC)	
Rt	NTC			Thermistor	



Packaging instruction				
Standard packaging quantity (SPQ) 100	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for <i>flow 1</i> packages see vincotech.com website.

Package data
Packaging data for <i>flow 1</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-FY10B2A100S7-LP26L06-T2-14	25 Nov. 2019	Correction of Comparative Tracking Index (CTI) value	4

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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