



Vincotech

10-FZ06B2A060P7-PB53L78

target datasheet

flowBOOST 0 dual

600 V / 60 mΩ

Features

- High efficiency dual booster
- Low Inductance Layout
- Ultra fast switching frequency
- Integrated temperature sensor

Target applications

- Power Supply
- Solar Inverters

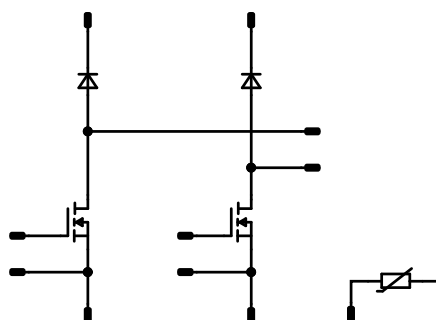
Types

- 10-FZ06B2A060P7-PB53L78

flow 0 12 mm housing



Schematic





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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_{DS}		600	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	15	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	151	A
Avalanche energy, single pulse	E_{AS}	$V_{DD} = 50\text{ V}$ $I_D = 0\text{ A}$	159	mJ
Avalanche energy, repetitive	E_{AR}	$V_{DD} = 50\text{ V}$ $I_D = 0\text{ A}$	0,8	mJ
MOSFET dv/dt ruggedness	dv/dt	$V_{DS} = 0..400\text{ V}$ $T_s = 25\text{ °C}$	80	V/ns
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	59	W
Gate-source voltage	V_{GS}		±20	V
Reverse diode dv/dt	dv/dt		50	V/ns
Maximum Junction Temperature	T_{jmax}		150	°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	A²s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	57	W
Maximum junction temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
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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_{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

Drain-source on-state resistance	$r_{DS(on)}$		10		15,9	25 150		49 115	60	mΩ
Gate-source threshold voltage	$V_{GS(th)}$		0		0,0008	25	3	3,5	4	V
Gate to Source Leakage Current	I_{GSS}		20	0		25			100	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	600		25			1	μA
Internal gate resistance	r_g							2,8		Ω
Gate charge	Q_g		0/10	400	15,9	25		67		nC
Short-circuit input capacitance	C_{iss}	$f = 250 \text{ kHz}$	0	400	0	25		2895		pF
Short-circuit output capacitance	C_{oss}							48		

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{\text{paste}} = 3,4 \text{ W/mK}$ (PSX)						1,18		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	$V_r = 650 \text{ V}$				25		24	120	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{\text{paste}} = 3,4 \text{ W/mK}$ (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}	$\Delta_{R/R}$	$R_{100} = 1484 \Omega$				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
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Marking							
	Text	Name NN-NNNNNNNNNNNNN- TTTTTVV		Date code WWYY	UL & VIN UL VIN	Lot LLLLL	Serial SSSS
		Datamatrix	Type&Ver	Lot number	Serial	Date code	
	TTTTTTTVV		LLLLL	SSSS	WWYY		

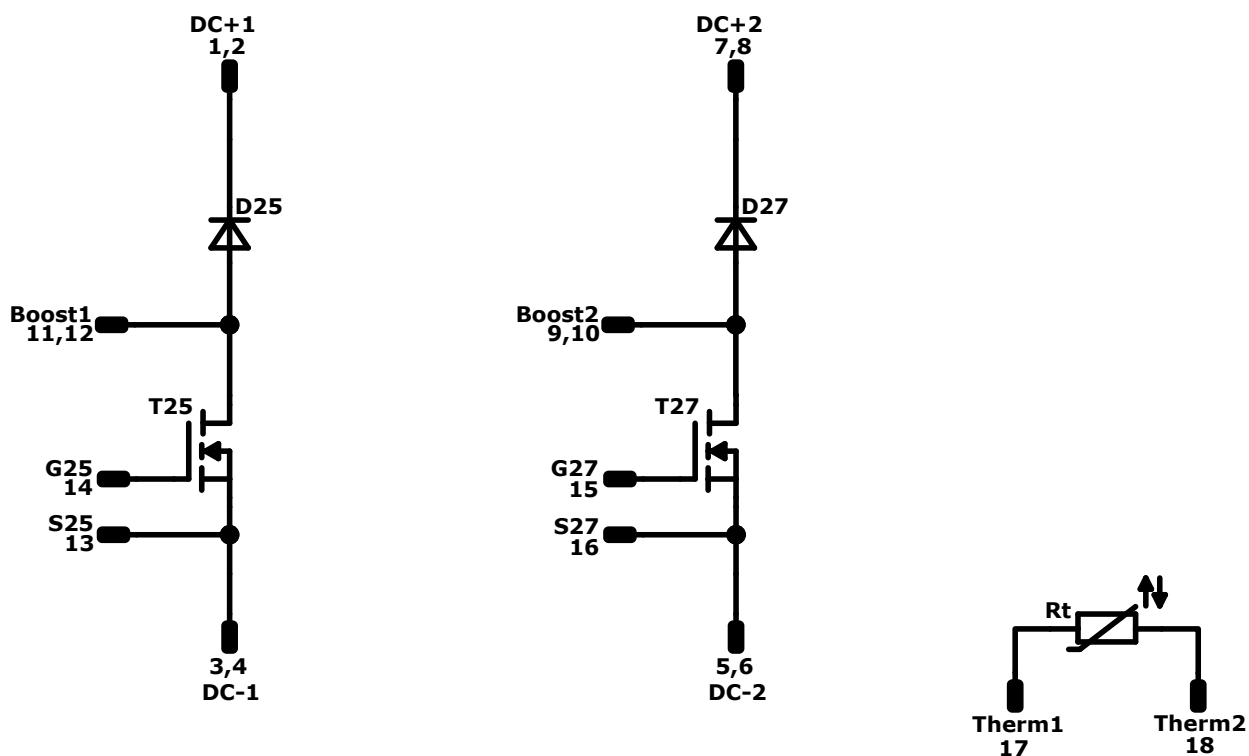
Tolerance of pinpositions: $\pm 0.5\text{mm}$ at the end of pins
Dimension of coordinate axis is only offset without tolerance



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Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T25, T27	MOSFET	600 V	60 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-FZ06B2A060P7-PB53L78-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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