
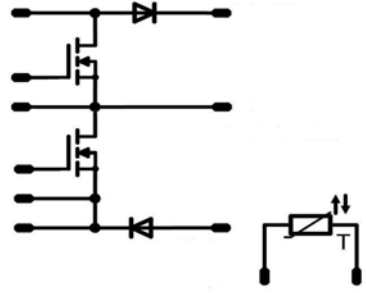


flowBoost1	600V/20mΩ
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #000080; color: white; margin: 0;">Features</p> <ul style="list-style-type: none"> High efficiency symmetric boost Ultra fast switching frequency </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #000080; color: white; margin: 0;">Target Applications</p> <ul style="list-style-type: none"> Input stage for solar inverter </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #000080; color: white; margin: 0;">Types</p> <ul style="list-style-type: none"> 10-F106BIB020FK-M285L </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #000080; color: white; margin: 0;">flow1 housing</p>  </div> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; background-color: #000080; color: white; margin: 0;">Schematic</p>  </div>

Maximum Ratings

T_j=25°C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
Input Boost MOSFET				
Drain to source breakdown voltage	V _{DS}		650	V
DC drain current	I _D	T _j =T _{jmax}	100 75	A
Pulsed drain current	I _{Dpuls}	t _p limited by T _{jmax}	400	A
Power dissipation	P _{tot}	T _j =T _{jmax}	329 184	W
Gate-source peak voltage	V _{GS}		25	V
Maximum Junction Temperature	T _{jmax}		150	°C

Input Boost Diode				
Peak Repetitive Reverse Voltage	V _{RRM}	T _j =25°C	600	V
DC forward current	I _F	T _j =T _{jmax}	115 77	A
Repetitive peak forward current	I _{FRM}	t _p limited by T _{jmax}	240	A
Power dissipation	P _{tot}	T _j =T _{jmax}	179 100	W
Maximum Junction Temperature	T _{jmax}		150	°C

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
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Thermal Properties

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

Insulation Properties

Insulation voltage	V_{is}	$t=2\text{s}$ DC voltage	4000	V
Creepage distance			min 12,7	mm
Clearance			min 12,7	mm

Characteristic Values

Parameter	Symbol	Conditions					Value			Unit					
		$V_{GS}[V]$ or $V_{GS}[V]$	$V_r[V]$ or $V_{CE}[V]$ or $V_{DS}[V]$	$I_c[A]$ or $I_F[A]$ or $I_D[A]$	T_j	Min	Typ	Max							
Input Boost MOSFET															
Static drain to source ON resistance	$R_{DS(on)}$				69	$T_j=25^\circ C$ $T_j=125^\circ C$		0,019 0,038		Ω					
Gate threshold voltage	$V_{(GS)th}$	VGS=VDS			0,0005	$T_j=25^\circ C$ $T_j=125^\circ C$	3	4	5	V					
Gate to Source Leakage Current	I_{gss}		20	0		$T_j=25^\circ C$ $T_j=125^\circ C$			400	nA					
Zero Gate Voltage Drain Current	I_{dss}		0	650		$T_j=25^\circ C$ $T_j=125^\circ C$			2 200	μA					
Turn On Delay Time	$t_{d(ON)}$	Rgoff=2,4 Ω Rgon=2,4 Ω	10	400	80	$T_j=25^\circ C$ $T_j=125^\circ C$		36		ns					
Rise Time	t_r					$T_j=25^\circ C$ $T_j=125^\circ C$		90							
Turn off delay time	$t_{d(OFF)}$					$T_j=25^\circ C$ $T_j=125^\circ C$		130							
Fall time	t_f					$T_j=25^\circ C$ $T_j=125^\circ C$		40							
Turn-on energy loss per pulse	E_{on}					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd			mWs				
Turn-off energy loss per pulse	E_{off}					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd							
Total gate charge	Q_g										$T_j=25^\circ C$ $T_j=125^\circ C$		360		nC
Gate to source charge	Q_{gs}	10	520	69	$T_j=25^\circ C$ $T_j=125^\circ C$		120								
Gate to drain charge	Q_{gd}				$T_j=25^\circ C$ $T_j=125^\circ C$		140								
Input capacitance	C_{iss}					$T_j=25^\circ C$		19600		pF					
Output capacitance	C_{oss}	f=1MHz	0	100		$T_j=25^\circ C$		400							
Reverse transfer capacitance	C_{rss}					$T_j=25^\circ C$		12							
Thermal resistance chip to heatsink per chip	R_{thJH}	Thermal grease thickness \leq 50um $\lambda = 1$ W/mK						0,38		K/W					
Input Boost Diode															
Forward voltage	V_F				120	$T_j=25^\circ C$ $T_j=125^\circ C$		1,4 1,3		V					
Reverse leakage current	I_{rm}			390	120	$T_j=25^\circ C$ $T_j=125^\circ C$			200 1000	μA					
Peak recovery current	I_{RRM}	diF/dt = 200 A/us	390	120		$T_j=25^\circ C$ $T_j=125^\circ C$		11 25		A					
Reverse recovery time	t_{rr}					$T_j=25^\circ C$ $T_j=125^\circ C$		60 138							
Reverse recovery charge	Q_{rr}					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd			mWs				
Reverse recovered energy	E_{rec}					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd							
Peak rate of fall of recovery current	$di(rec)max/dt$					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd			A/ μs				
Thermal resistance chip to heatsink per chip	R_{thJH}					Thermal grease thickness \leq 50um $\lambda = 1$ W/mK							0,70		K/W
Thermistor															
Rated resistance	R					T=25 $^\circ C$		22000		Ω					
Deviation of R100	$\Delta R/R$	R100=1486 Ω				T=100 $^\circ C$	-5		5	%					
Power dissipation	P					T=25 $^\circ C$		200		mW					
Power dissipation constant						T=25 $^\circ C$		2		mW/K					
B-value	B(25/50)	Tol. \pm 3%				T=25 $^\circ C$		3950		K					
B-value	B(25/100)	Tol. \pm 3%				T=25 $^\circ C$		3996		K					
Vincotech NTC Reference									B						

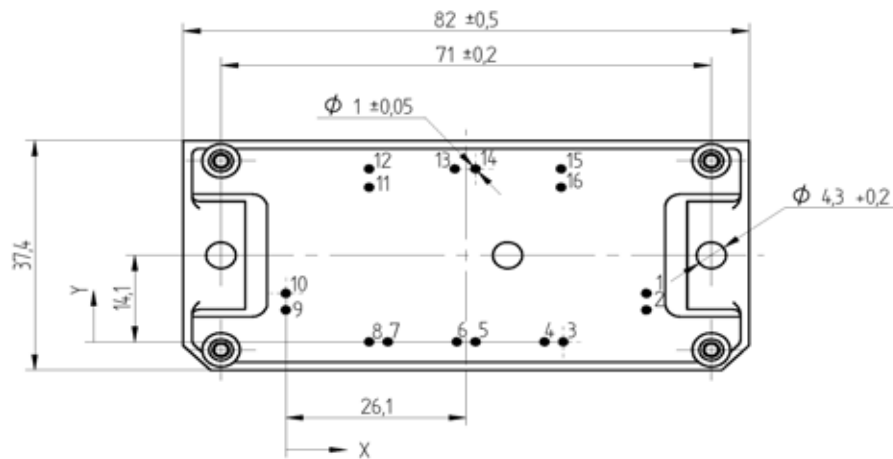
Ordering Code and Marking - Outline - Pinout

Ordering Code & Marking

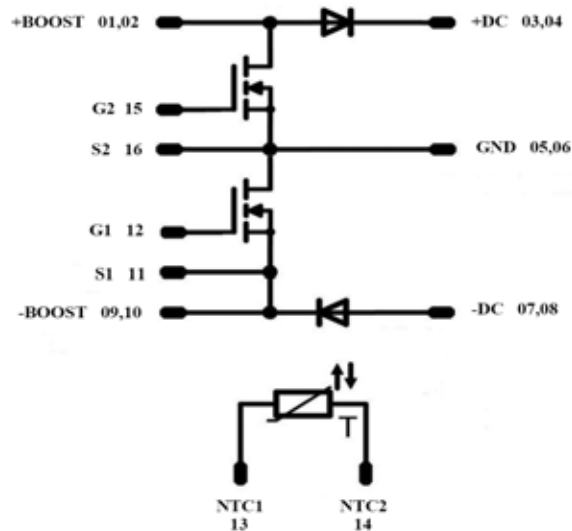
Version	Ordering Code	in DataMatrix as	in packaging barcode as
without thermal paste 17mm housing	10-F106BIB020FK-M285L	M285L	M285L

Outline

Pin table		
Pin	X	Y
1	52,2	7,9
2	52,2	5,2
3	40,15	0
4	37,45	0
5	27,45	0
6	24,75	0
7	14,75	0
8	12,05	0
9	0	5,2
10	0	7,9
11	12,05	25,2
12	12,05	28,2
13	24,45	28,2
14	27,45	28,2
15	39,85	28,2
16	39,85	25,2



Pinout



PRODUCT STATUS DEFINITIONS

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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