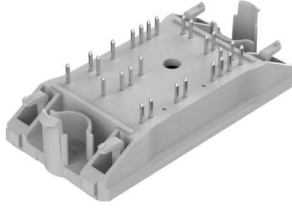
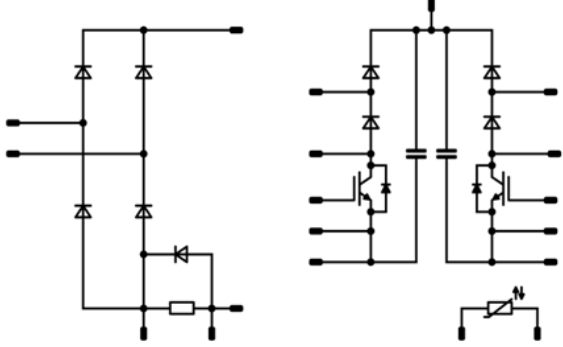




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<i>flow</i> PFC 0 CD	650 V / 15 A
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Features</p> <ul style="list-style-type: none"> High-efficient rectifier High-efficient IGBT H5 + Stealth 2 Diode Ultra-fast switching speed Integrated capacitors Thermistor </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> SMPS Welding </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-FZ062TA015SM-P985D13 </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;"><i>flow</i> 0 12mm housing</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

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

Parameter	Symbol	Condition	Value	Unit
PFC Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	21	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	45	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^{\circ}\text{C}$	44	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
PFC Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	20	A
Surge (non-repetitive) forward current	I_{FSM}	60 Hz Single Half Sine Wave $T_j = \text{ }^\circ\text{C}$	150	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	54	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
PFC Sw. Protection Diode \ Current Transformer Protection Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	17	A
Repetitive peak forward current	I_{FRM}		20	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	33	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
Rectifier Diode \ Shunt Protection Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	30	A
Surge (non-repetitive) forward current	I_{FSM}	50 Hz Single Half Sine Wave $T_j = 150^\circ\text{C}$	230	A
Surge current capability	I^2t	$t_p = 10 \text{ ms}$	260	A^2s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	38	W
Maximum Junction Temperature	T_{jmax}		150	$^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
DC Link Capacitor				
Maximum DC voltage	V_{MAX}		1000	V
Operation Temperature	T_{op}		-55...+125	$^\circ\text{C}$



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Parameter	Symbol	Conditions	Value	Unit
PFC Shunt				
DC forward current	I_F	$T_c=25^\circ\text{C}$	35	A
Power dissipation	P_{tot}	$T_c=25^\circ\text{C}$	5	W

Parameter	Symbol	Conditions	Value	Unit
Module Properties				
Thermal Properties				
Storage temperature	T_{stg}		-40...+125	°C
Operation Junction Temperature	T_{jop}		-40...+($T_{jmax} - 25$)	°C

Isolation Properties					
Isolation voltage	V_{isol}	DC voltage	$t_p=2\text{s}$	4000	V
Creepage distance				min 12,7	mm
Clearance				9,42	mm
Comparative Tracking Index	CTI			>200	



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Characteristic Values

PFC Switch

Parameter	Symbol	Conditions					Value			Unit
		V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max		
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,0004	25 125	3,3	4	4,7	V
Collector-emitter saturation voltage	V_{CEsat}		15		15	25 125 150		1,64 1,77 1,80	2,22	V
Collector-emitter cut-off current	I_{CES}		0	650		25 125			40	μA
Gate-emitter leakage current	I_{GES}		20	0		25 125			120	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	f=1MHz	0	25		25		930		pF
Output capacitance	C_{oes}							24		
Reverse transfer capacitance	C_{res}							4		
Gate charge	Q_g		15	520	15	25		38		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						2,14		K/W
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PFC Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			
Static										
Forward voltage	V_F				15	25 125		2,48 1,73	2,6	V
Reverse leakage current	I_r			600		25 150			10	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$						1,75		K/W
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PFC Sw. Protection Diode \ Current Transformer Protection Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			
Static										
Forward voltage	V_F		10	25 125			1,67 1,56	1,87		V
Reverse leakage current	I_r	650		25 150				0,14		μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$					2,87			K/W
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Rectifier Diode \ Shunt Protection Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			
Static										
Forward voltage	V_F		30	25 125			1,25 1,24	1,29		V
Reverse leakage current	I_r	1600		25 150				10 1000		μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda=3,4W/mK$					1,86			K/W
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DC Link Capacitor

Parameter	Symbol	Conditions					Value			Unit
		T_j [°C]	Min	Typ	Max					
Capacitance	C						100			nF
Tolerance							-10		+10	%



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PFC Shunt

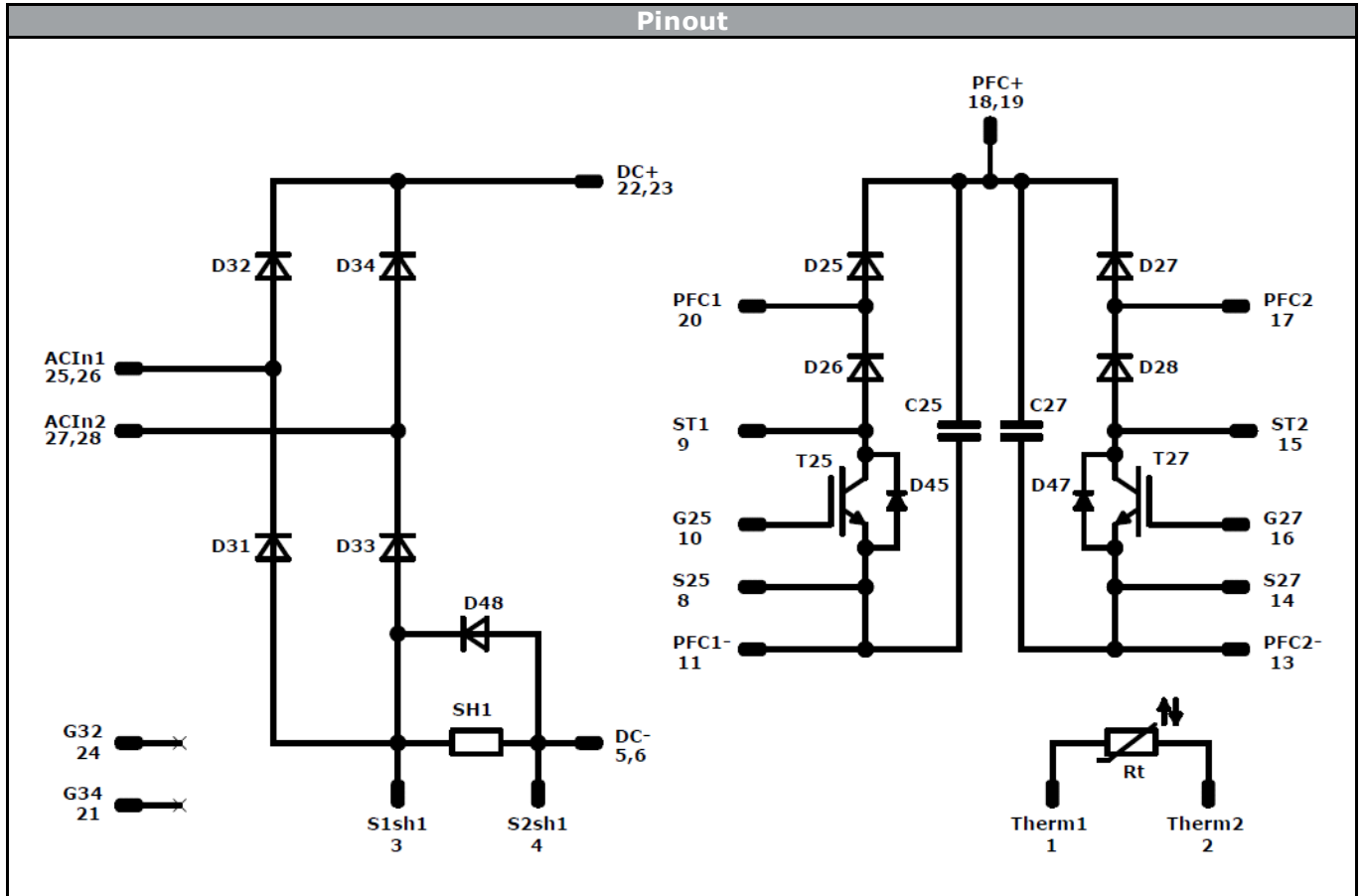
Parameter	Symbol	Conditions					Value			Unit
						T_j [°C]	Min	Typ	Max	
R1 value	R						19		21	mΩ
Temperature coefficient	t_c					20 - 60			50	ppm/K
Internal heat resistance	R_{thi}								13	K/W
Inductance	L								3	nH

Thermistor

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	
Rated resistance	R					25		21,5		kΩ
Deviation of R100	$\Delta_{R/R}$	R100=1486 Ω				100	-4,5		+4,5	%
Power dissipation	P					25		210		mW
Power dissipation constant						25		3,5		mW/K
B-value	$B_{(25/50)}$					25		3884		K
B-value	$B_{(25/100)}$					25		3964		K
Vincotech NTC Reference									F	



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Identification					
ID	Component	Voltage	Current	Function	Comment
T25, T27	IGBT	650 V	15 A	PFC Switch	
D25, D27	FWD	600 V	15 A	PFC Diode	
D45, D47	FWD	650 V	10 A	PFC Sw. Protection Diode	
D31-D34	Rectifier	1600 V	30 A	Rectifier Diode	
D48	FWD	1600 V	30 A	Shunt Protection Diode	
D26, D28	FWD	650 V	10 A	Current Transformer Protection Diode	
SH1	Shunt	-	-	Shunt Resistor	
C25, C27	Capacitor	1000 V	-	DC Link Capacitance	
Rt	NTC	-	-	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.

Document No.:	Date:	Modification:	Pages
10-FZ062TA015SM-P985D13-T1-14	27 Oct. 2015		

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.