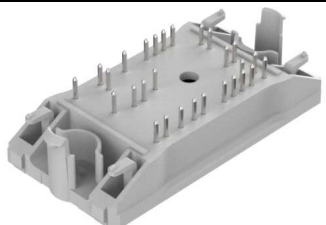
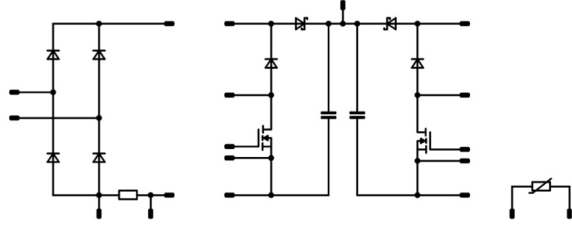
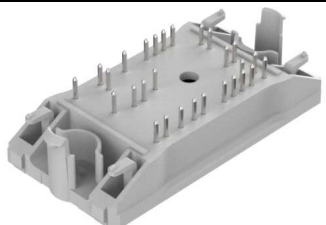
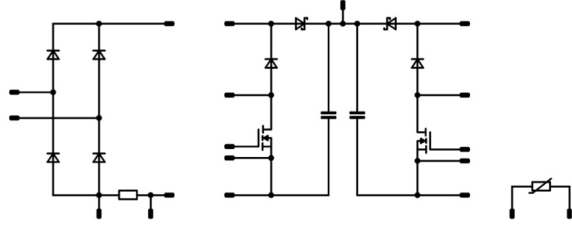
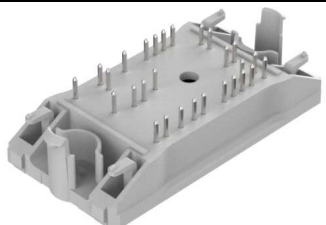
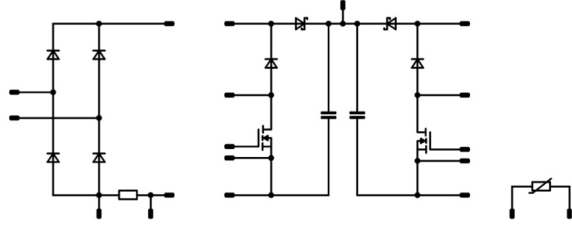




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<i>flow</i> PFC 0 CD	600 V / 99 mΩ										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ccc;"> <th style="text-align: center; padding: 2px;">Features</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> Compact and low inductance design Suitable for Interleaved topology Suitable for current sensing in drain C6 series CoolMOS™ and SiC boost FRED </td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ccc;"> <th style="text-align: center; padding: 2px;">Target applications</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> Embedded Drives Power Supply UPS Welding & Cutting </td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ccc;"> <th style="text-align: center; padding: 2px;">Types</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> 10-FZ062TA099FS05-P980D68 </td> </tr> </tbody> </table>	Features	<ul style="list-style-type: none"> Compact and low inductance design Suitable for Interleaved topology Suitable for current sensing in drain C6 series CoolMOS™ and SiC boost FRED 	Target applications	<ul style="list-style-type: none"> Embedded Drives Power Supply UPS Welding & Cutting 	Types	<ul style="list-style-type: none"> 10-FZ062TA099FS05-P980D68 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ccc;"> <th style="text-align: center; padding: 2px;"><i>flow</i> 0 12mm housing</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;">  </td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #ccc;"> <th style="text-align: center; padding: 2px;">Schematic</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 10px;">  </td> </tr> </tbody> </table>	<i>flow</i> 0 12mm housing		Schematic	
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Schematic											
											

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Rectifier Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	44	A
Surge (non-repetitive) forward current	I_{FSM}	50 Hz Single Half Sine Wave $t_p = 10\text{ ms}$ $T_j = 150\text{ °C}$	280	A
Surge current capability	I_{Pt}		390	A ² s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	68	W
Maximum Junction Temperature	T_{jmax}		150	°C



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Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
PFC Shunt				
DC forward current	I_F	$T_c = 25\text{ °C}$	31,60	A
Power dissipation	P_{tot}	$T_c = 25\text{ °C}$	10	W
PFC Switch				
Drain-source voltage	V_{DSS}		600	V
Drain current	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	18	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	112	A
Avalanche energy, single pulse	E_{AS}	$I_D = 6,6\text{ A}$ $V_{DD} = 50\text{ V}$	796	mJ
Avalanche energy, repetitive	E_{AR}	$I_D = 6,6\text{ A}$ $V_{DD} = 50\text{ V}$	1,20	mJ
Avalanche current, repetitive	I_{AR}	t_p limited by T_{jmax} $P_{AV} = E_{AR} * f$	6,6	A
MOSFET dv/dt ruggedness	dv/dt	$V_{DS} = 480\text{ V}$	50	V/ns
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	88	W
Gate-source voltage	V_{GSS}		±20	V
Reverse diode dv/dt	dv/dt		15	V/ns
Maximum Junction Temperature	T_{jmax}		150	°C
PFC Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	20	A
Repetitive peak forward current	I_{FRM}		114	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	46	W
Maximum Junction Temperature	T_{jmax}		175	°C



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Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Current Transformer Protection Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_s = 80\text{°C}$	8	A
Repetitive peak forward current	I_{FRM}		12	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{°C}$	35	W
Maximum Junction Temperature	T_{jmax}		175	°C

Capacitor (DC)

Maximum DC voltage	V_{MAX}		500	V
Operation Temperature	T_{op}		-55...+125	°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
		AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			min. 12,7	mm
Clearance			9,42	mm
Comparative Tracking Index	CTI		> 200	

*100 % tested in production



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Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
		V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max		

Rectifier Diode

Static

Forward voltage	V_F				31	25 125		1,16 1,13	1,4	V
Reverse leakage current	I_r			1600		25 150			20 1500	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						1,03		K/W
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PFC Shunt

R1 value	R						9,4	10	10,6	m Ω
Temperature coefficient	tc					20 - 60			50	ppm/K
Internal heat resistance	R_{thi}								6,5	K/W
Inductance	L								3	nH

PFC Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		10		18,1	25 125		100 209		m Ω
Gate-source threshold voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}$			0,00121	25	2,5	3	3,5	V
Gate to Source Leakage Current	I_{GSS}		20	0		25			100	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	600		25			5	μ A
Internal gate resistance	r_g							1,6		Ω
Gate charge	Q_G							119		nC
Gate to source charge	Q_{GS}		0/10	480	18,1	25		14		
Gate to drain charge	Q_{GD}							61		
Short-circuit input capacitance	C_{ISS}	$f = 1$ MHz	0	100		25		2660		pF
Short-circuit output capacitance	C_{OSS}									

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						0,8		K/W
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Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
		V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max		

PFC Diode

Static

Forward voltage	V_F			16	25 125		1,62 1,87	1,8	V
Reverse leakage current	I_r		650		25 175			120 440	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK					2,07		K/W
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Current Transformer Protection Diode

Static

Forward voltage	V_F			6	25 125		1,58 1,50	1,95	V
Reverse leakage current	I_r		600		25			27	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK					2,68		K/W
-------------------------------------	---------------	---	--	--	--	--	------	--	-----

Capacitor (DC)



Capacitance	C						270		nF
Tolerance							-15	+15	%
Dissipation factor		$f = 1$ kHz			25			2,5	%
Climatic category							55/125/56		

Thermistor

Rated resistance	R				25		22		k Ω
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 1484$ Ω			100	-5		5	%
Power dissipation	P				25		5		mW
Power dissipation constant					25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ± 1 %			25		3962		K
B-value	$B_{(25/100)}$	Tol. ± 1 %			25		4000		K
Vincotech NTC Reference								I	

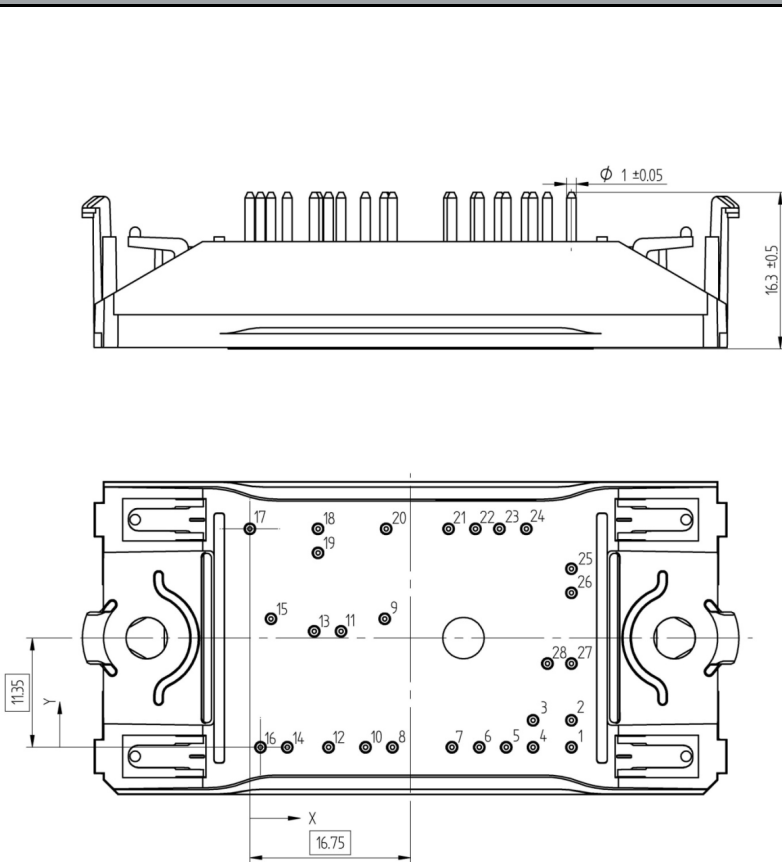


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Ordering Code & Marking						
Version			Ordering Code			
without thermal paste			10-FZ062TA099FS05-P980D68			
NN-NNNNNNNNNNNNNN TTTTWTW WYYY UL VIN LLLLL SSSS						
Text	Name		Date code	UL & VIN	Lot	Serial
	N-NNNNNNNNNNNNNN-TTTTWTW		WYYY	UL VIN	LLLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTWTW	LLLLL	SSSS	WYYY		

Outline

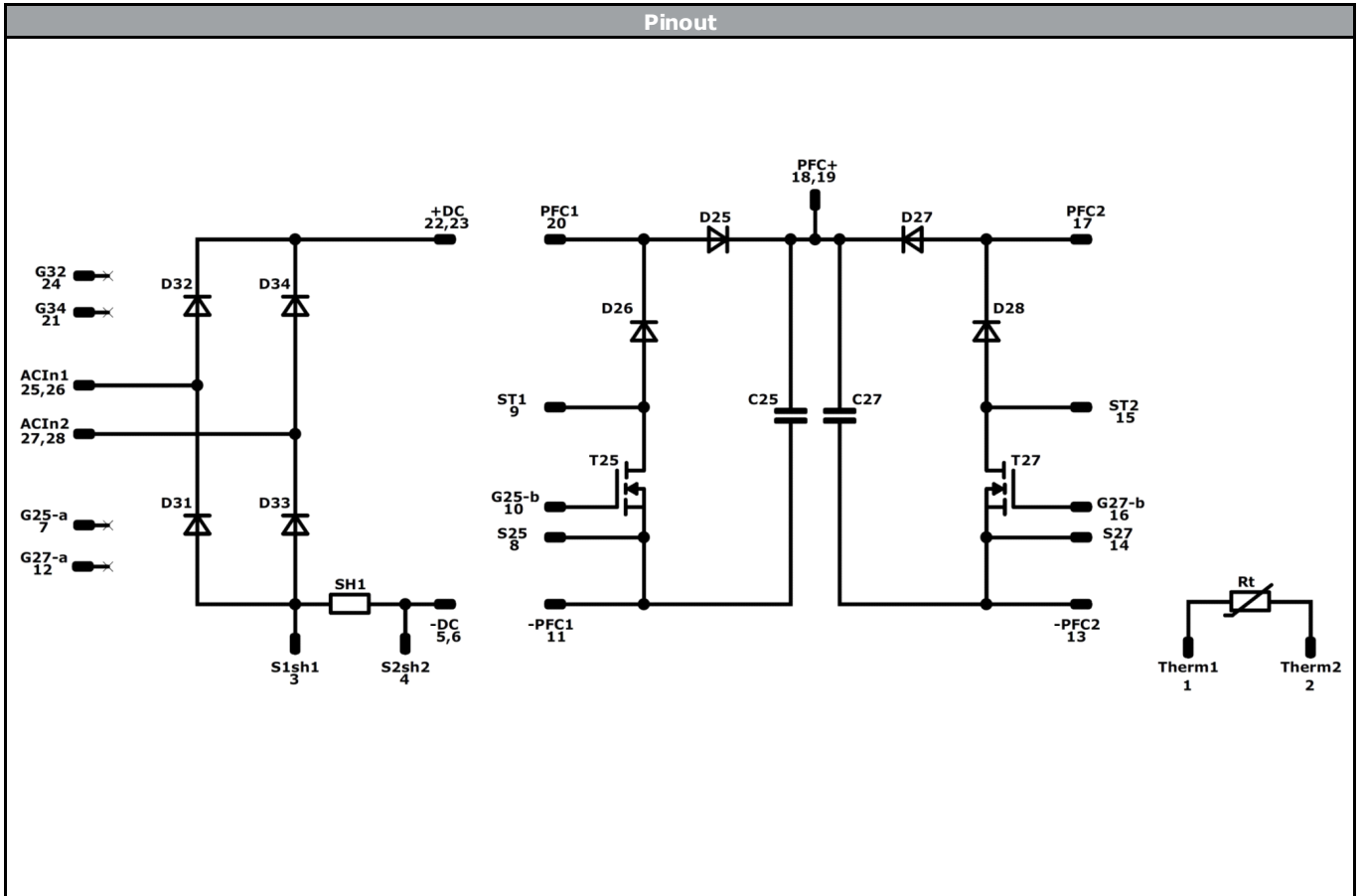
Pin table			
Pin	X	Y	Function
1	33,5	0	Therm1
2	33,5	2,8	Therm2
3	29,5	2,8	S1sh1
4	29,5	0	S1sh2
5	26,7	0	-DC
6	23,9	0	-DC
7	21,05	0	G25-a
8	14,85	0	S25
9	14,05	13,35	ST1
10	12,05	0	G25-b
11	9,5	12,05	-PFC1
12	8,2	0	G27-a
13	6,7	12,05	-PFC2
14	3,9	0	S27
15	2,2	13,35	ST2
16	1,1	0	G27-b
17	0	22,7	PFC2
18	7,1	22,7	PFC+
19	7,1	20,2	PFC+
20	14,2	22,7	PFC1
21	20,7	22,7	G34
22	23,5	22,7	+DC
23	26	22,7	+DC
24	28,8	22,7	G34
25	33,5	18,55	ACIn1
26	33,5	16,05	ACIn1
27	33,5	8,7	ACIn2
28	31	8,7	ACIn2



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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Identification					
ID	Component	Voltage	Current	Function	Comment
D31 , D32 , D33 , D34	Rectifier	1600 V	31 A	Rectifier Diode	
SH1	Resistor			PFC Shunt	
T25 , T27	MOSFET	600 V	99 mΩ	PFC Switch	
D25 , D27	FWD	650 V	16 A	PFC Diode	
D26 , D28	FWD	600 V	6 A	Current Transformer Protection Diode	
C25 , C27	Capacitor			Capacitor (DC)	
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.

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-FZ062TA099FS05-P980D68-T1-14	04 Jul. 2017		

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.