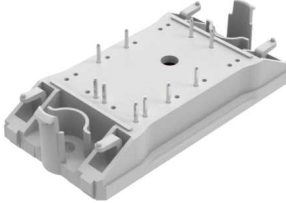
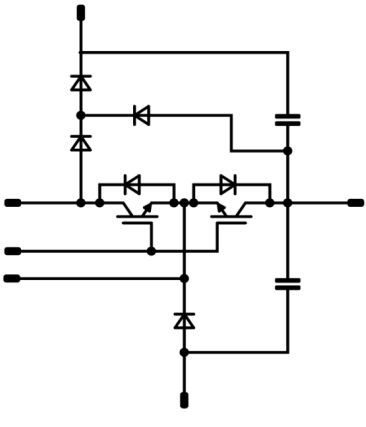




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<i>flow</i> ANPFC 0	650 V / 100 A
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Features</b></div> <ul style="list-style-type: none"> <li>Ultra fast IGBT and recovery boost diodes</li> <li>Topology requires only one gate driver</li> <li>Integrated capacitor</li> <li>Temperature sensor</li> </ul>	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>flow 0 12 mm housing</b></div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Target applications</b></div> <ul style="list-style-type: none"> <li>Power Supply</li> <li>UPS</li> <li>Welding &amp; Cutting</li> </ul>	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Schematic</b></div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;"><b>Types</b></div> <ul style="list-style-type: none"> <li>10-FZ07ANA100SM-LE29L08</li> </ul>	

## Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
<b>PFC Switch</b>				
Collector-emitter voltage	$V_{CES}$		650	V
Collector current	$I_C$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	79	A
Repetitive peak collector current	$I_{CRM}$	$t_p$ limited by $T_{jmax}$	300	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	133	W
Gate-emitter voltage	$V_{GES}$		±20	V
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
<b>PFC Diode</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		650	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	82	A
Repetitive peak forward current	$I_{FRM}$		200	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	106	W
Maximum Junction Temperature	$T_{jmax}$		175	°C
<b>PFC Inverse Diode (D11), PFC Diode (D21)</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		1600	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	69	A
Surge (non-repetitive) forward current	$I_{FSM}$	50 Hz Single Half Sine Wave $t_p = 10\text{ ms}$ $T_j = 150\text{ °C}$	600	A
Surge current capability	$I_{Pt}$		1800	A <sup>2</sup> s
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	82	W
Maximum Junction Temperature	$T_{jmax}$		150	°C
<b>PFC Inverse Diode (D12)</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		1600	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	86	A
Surge (non-repetitive) forward current	$I_{FSM}$	$t_p = 10\text{ ms, sin } 180^\circ$ $T_j = 150\text{ °C}$	890	A
Surge current capability	$I_{Pt}$		3960	A <sup>2</sup> s
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	93	W
Maximum Junction Temperature	$T_{jmax}$		150	°C
<b>PFC Protection Diode</b>				
Peak repetitive reverse voltage	$V_{RRM}$		650	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	24	A
Repetitive peak forward current	$I_{FRM}$		40	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	42	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
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### DC Link Capacitor

Maximum DC voltage	$V_{MAX}$		630	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 <sub>max</sub> - 25)	°C

#### Isolation Properties

Isolation voltage	$V_{isol}$	DC Test Voltage $t_p = 2\text{ s}$	4000	V
Creepage distance			min. 12,7	mm
Clearance			9,75	mm
Comparative Tracking Index	CTI		> 200	



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## Characteristic Values

Parameter	Symbol	Conditions					Value			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		

### PFC Switch

#### Static

Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = V_{CE}$			0,001	25	3,3	4	4,7	V
Collector-emitter saturation voltage	$V_{CEsat}$		15		100	25 125		1,63 1,78	2,22	V
Collector-emitter cut-off current	$I_{CES}$		0	650		25			80	μA
Gate-emitter leakage current	$I_{GES}$		20	0		25			240	nA
Internal gate resistance	$r_g$							none		Ω
Input capacitance	$C_{ies}$							6000		pF
Output capacitance	$C_{oes}$	$f = 1$ MHz	0	25		25		100		
Reverse transfer capacitance	$C_{res}$							22		
Gate charge	$Q_g$		15	520	100	25		240		nC

#### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						0,72		K/W
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### PFC Diode

#### Static

Forward voltage	$V_F$				100	25 125 150		1,50 1,43 1,40	1,77	V
Reverse leakage current	$I_r$			650		25			5,3	μA

#### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK						0,90		K/W
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### Characteristic Values

Parameter	Symbol	Conditions					Value			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		

#### PFC Inverse Diode (D11), PFC Diode (D21)

##### Static

Forward voltage	$V_F$			65	25 125		1,18 1,15		V
Reverse leakage current	$I_r$		1600		25 150			50 1100	$\mu$ A

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK					0,86		K/W
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#### PFC Inverse Diode (D12)

##### Static

Forward voltage	$V_F$			75	25 125		1,10 1,05	1,8	V
Reverse leakage current	$I_r$		1600		25 145			50 1100	$\mu$ A

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK					0,75		K/W
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#### PFC Protection Diode

##### Static

Forward voltage	$V_F$			20	25 150		1,55 1,50	1,87	V
Reverse leakage current	$I_R$		650		25			0,24	$\mu$ A

##### Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material $\lambda = 3,4$ W/mK					2,24		K/W
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#### DC Link Capacitor

Capacitance	C						100		nF
Tolerance							-10	+10	%
Dissipation factor		$f = 1$ kHz				25		2,5	%



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### Characteristic Values

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

#### Thermistor

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



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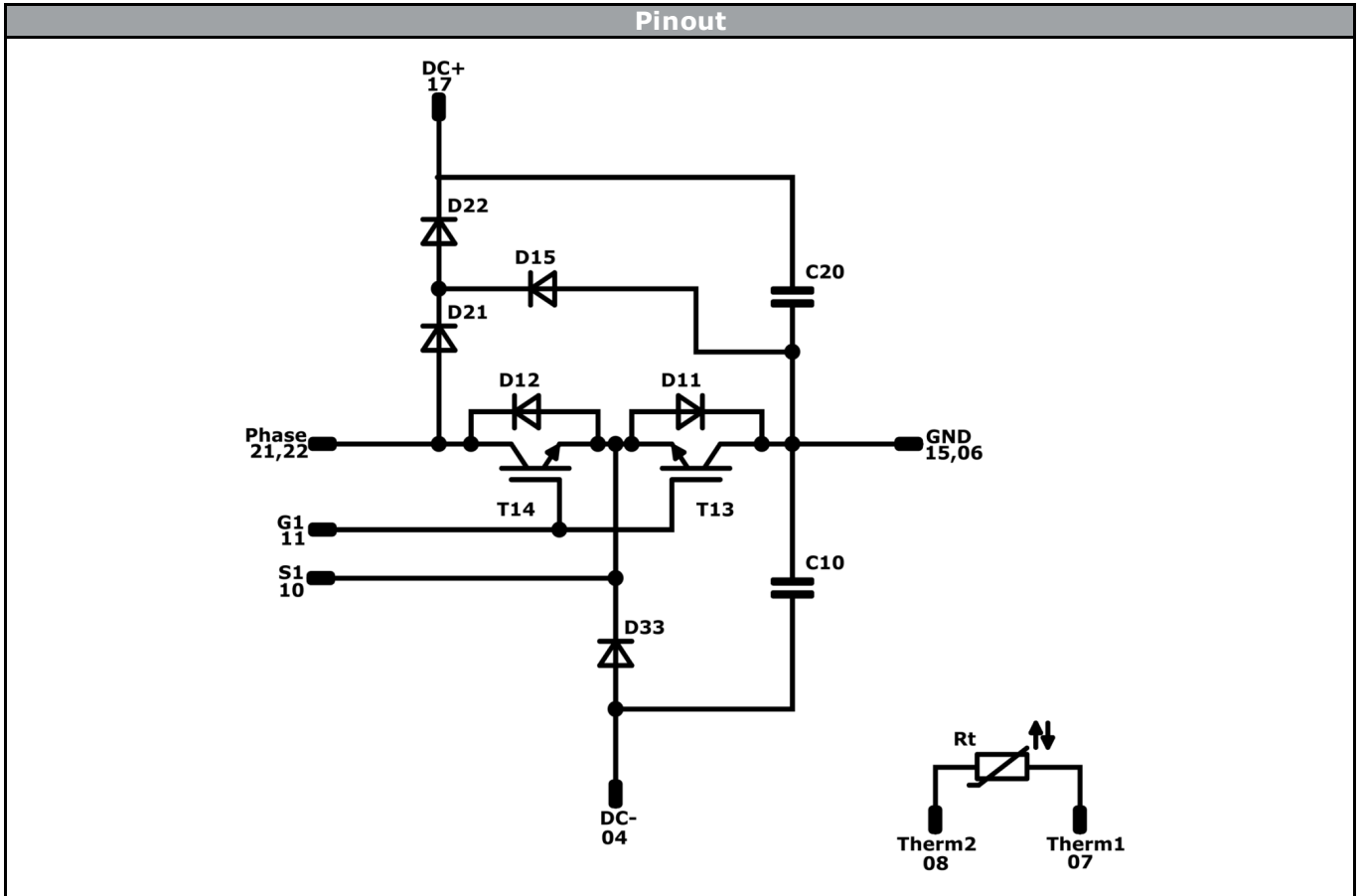
Ordering Code & Marking						
<b>Version</b>				<b>Ordering Code</b>		
without thermal paste 12 mm housing with solder pins				10-FZ07ANA100SM-LE29L08		
Text	Name		Date code	UL & VIN	Lot	Serial
	NN-NNNNNNNNNNNNNNNN-TTTTIV		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTIV	LLLLL	SSSS	WWYY		

Pin table [mm]				Outline	
Pin	X	Y	Function		
1			Not assembled		
2			Not assembled		
3			Not assembled		
4	19,2	0	DC-		
5			Not assembled		
6	10,1	0	GND		
7	2,8	0	Therm1		
8	0	0	Therm2		
9			assembled		
10	0	9,9	S1		
11	0	12,7	G1		
12			Not assembled		
13			Not assembled		
14			Not assembled		
15	10,1	22,6	GND		
16			Not assembled		
17	19,2	22,6	DC+		
18			Not assembled		
19			Not assembled		
20			Not assembled		
21	33,6	14,8	Phase		
22	33,6	8,2	Phase		

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



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<b>Identification</b>					
ID	Component	Voltage	Current	Function	Comment
T13, T14	IGBT	650 V	100 A	PFC Switch	
D22, D33	FWD	650 V	100 A	PFC Diode	
D21	FWD	1600 V	65 A	PFC Diode	
D11	FWD	1600 V	65 A	PFC Inverse Diode	
D12	FWD	1600 V	75 A	PFC Inverse Diode	
D15	FWD	650 V	20 A	PFC Protection Diode	
C10, C20	Capacitor	630 V		DC Link Capacitor	
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.

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-FZ07ANA100SM-LE29L08-T1-14	06 Feb. 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.