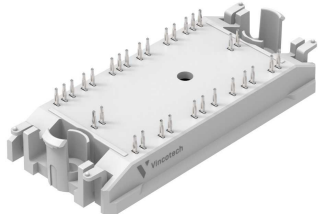
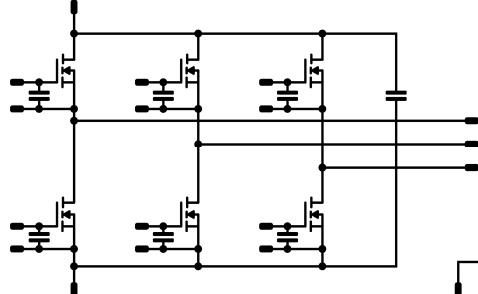




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flowPACK 1 SiC	1200 V / 10 mΩ
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Features</p> <ul style="list-style-type: none"> Silicon Carbide Power MOSFET Trench Technology Sixpack with integrated capacitors Si₃N₄ based DCB for better thermal performance Integrated NTC </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">Target applications</p> <ul style="list-style-type: none"> Charging Stations Power Supply </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-PH126PA010MR-L820F86T </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center; background-color: #cccccc; margin: 0;">flow 1 12 mm 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

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

Parameter	Symbol	Condition	Value	Unit
Inverter Switch				
Drain-source voltage	V_{DSS}		1200	V
Drain current	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	134	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	548	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	352	W
Gate-source voltage	V_{GSS}		-4/+22	V
Maximum Junction Temperature	T_{jmax}		175	°C
Capacitor (GS)				
Maximum DC voltage	V_{MAX}		25	V
Operation Temperature	T_{op}		-55...+125	°C



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Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
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Capacitor (DC)

Maximum DC voltage	V_{MAX}		1000	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			8,24	mm
Comparative Tracking Index	CTI		> 200	

*100 % tested in production



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Characteristic Values

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

Inverter Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		10		80	25 125		9 14	12,5	mΩ
Gate-source threshold voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}$			0,04	25	2,7	4,5	5,6	V
Gate to Source Leakage Current	I_{GSS}		-4/+22	0		25			±400	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	1200		25			40	μA
Internal gate resistance	r_g							1,75		Ω
Gate charge	Q_g							428		nC
Gate to source charge	Q_{GS}		18	600	80	25		88		
Gate to drain charge	Q_{GD}							164		
Short-circuit input capacitance	C_{iss}							5348		pF
Short-circuit output capacitance	C_{oss}	$f = 1$ MHz	0	800		25		304		
Reverse transfer capacitance	C_{rss}							108		

Reverse Diode Static

Diode forward voltage	VSD		0		80	25		3,2		V
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Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,27		K/W
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Capacitor (GS)

Capacitance	C							10		nF
Tolerance							-10		+10	%
Dissipation factor		$f = 1$ kHz				25			0,1	%

Capacitor (DC)

Capacitance	C							94		nF
Tolerance							-20		+20	%
Climatic category								55/125/56		



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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	



10-PH126PA010MR-L820F86T

target datasheet

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Ordering Code & Marking																																
Version			Ordering Code																													
without thermal paste 12 mm housing with press-fit pins			10-PH126PA010MR-L820F86T																													
<table border="1"> <thead> <tr> <th rowspan="2">Text</th> <th colspan="2">Name</th> <th>Date code</th> <th>UL & VIN</th> <th>Lot</th> <th>Serial</th> </tr> <tr> <th>Type&Ver</th> <th>Lot number</th> <th>Serial</th> <th>Date code</th> <td></td> <td></td> </tr> </thead> <tbody> <tr> <td rowspan="2"> NN-NNNNNNNNNNNN TTTTWTW WYYY UL VIN LLLL SSSS </td> <td colspan="2">NN-NNNNNNNNNNNN-TTTTWTW</td> <td>WYYY</td> <td>UL VIN</td> <td>LLLL</td> <td>SSSS</td> </tr> <tr> <td>TTTTTWTW</td> <td>LLLL</td> <td>SSSS</td> <td>WYYY</td> <td></td> <td></td> </tr> </tbody> </table>							Text	Name		Date code	UL & VIN	Lot	Serial	Type&Ver	Lot number	Serial	Date code			NN-NNNNNNNNNNNN TTTTWTW WYYY UL VIN LLLL SSSS	NN-NNNNNNNNNNNN-TTTTWTW		WYYY	UL VIN	LLLL	SSSS	TTTTTWTW	LLLL	SSSS	WYYY		
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	TTTTTWTW	LLLL	SSSS	WYYY																												

Pin table			
Pin	X	Y	Functions
1	52,6	0	DC-123
2	49,9	0	DC-123
3	42,65	0	G15
4	39,65	0	S15
5	35,15	0	Therm1
6	28,4	0	Therm2
7	24	0	G13
8	21	0	S13
9	12,2	0	G11
10	9,2	0	S11
11	2,7	0	DC-123
12	0	0	DC-123
13	0	14,65	DC+123
14	2,7	14,65	DC+123
15	0	28,6	Ph1
16	2,7	28,6	Ph1
17	5,4	28,6	Ph1
18	9,6	28,6	S12
19	12,6	28,6	G12
20	19,6	28,6	Ph2
21	22,3	28,6	Ph2
22	25	28,6	Ph2
23	29,7	28,6	S14
24	32,7	28,6	G14
25	39,7	28,6	S16
26	42,7	28,6	G16
27	47,2	28,6	Ph3
28	49,9	28,6	Ph3
29	52,6	28,6	Ph3
30	52,6	14,65	DC+123
31	49,9	14,65	DC+123

Outline

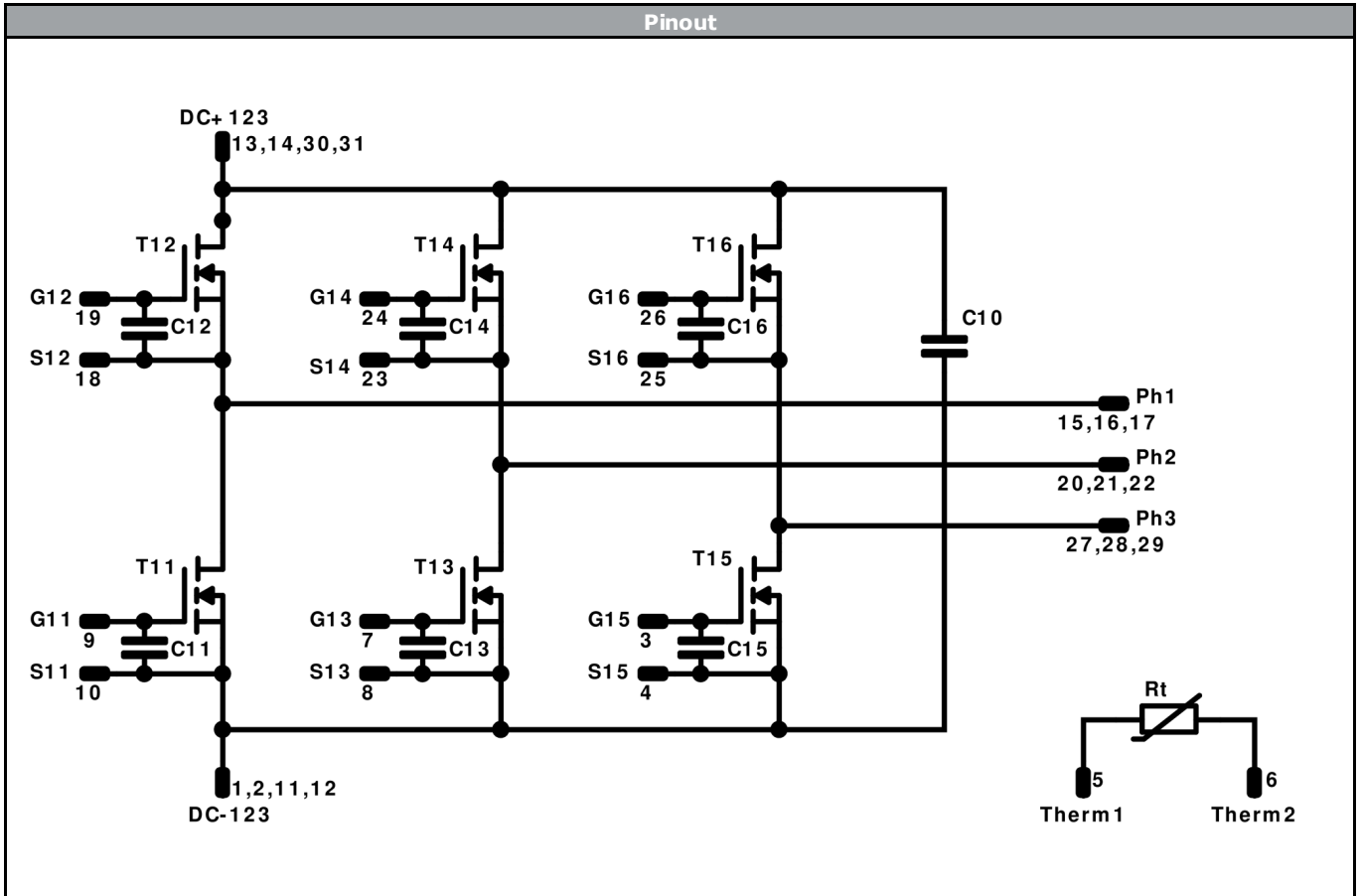
center of press-fit pinhead
for connection parameter see the handling instruction

Dimensions: 19,23 ±0,1, 16,4 ±0,5, 14,3, 26,26

Tolerance of pinpositions: ±0,5mm 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
T11, T12, T13, T14, T15, T16	MOSFET	1200 V	10 mΩ	Inverter Switch	
C11, C12, C13, C14, C15, C16	Capacitor	25 V		Capacitor (GS)	
C10	Capacitor	1000 V		Capacitor (DC)	
Rt	NTC			Thermistor	




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Packaging instruction			
Standard packaging quantity (SPQ) 100	>SPQ	Standard	<SPQ Sample

Handling instruction
Handling instructions for <i>flow 1</i> packages see vincotech.com website.

Package data
Package data for <i>flow 1</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-PH126PA010MR-L820F86T-T1-14	28 Mar. 2018		

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.