



flowPACK 0 SiC

1200 V / 75 mΩ

Topology features

- 3xHalf Bridge
- Open Emitter configuration
- Kelvin Emitter for improved switching performance
- Integrated DC capacitor
- Split output for transient deactivation of the body diode and elimination of X-conduction at fast turn-on
- Temperature sensor

Component features

- High Blocking Voltage with low drain source on state resistance
- High speed SiC-MOSFET technology
- Resistant to Latch-up

Housing features

- Base isolation: Al₂O₃
- Clip-in, reliable mechanical connection, qualified for wave soldering
- Convex shaped substrate for superior thermal contact
- Thermo-mechanical push-and-pull force relief
- Press-fit pin
- Reliable cold welding connection

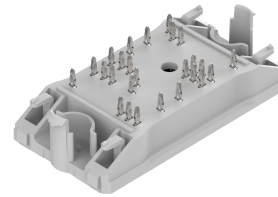
Target applications

- Power Supply
- Solar Inverters

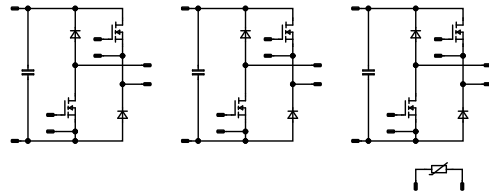
Types

- 10-PZ126PA075ME-M909F38Y

flow 0 12 mm housing



Schematic





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10-PZ126PA075ME-M909F38Y
target datasheet

Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
Inverter Diode				
Peak repetitive reverse voltage	V_{RRM}		1200	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	14	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	47	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, $t_p = 10\text{ ms}$ $T_j = 25\text{ °C}$	71	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	40	W
Maximum junction temperature	T_{jmax}		175	°C
Inverter Switch				
Drain-source voltage	V_{DSS}		1200	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	20	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	80	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	47	W
Gate-source voltage	V_{GSS}		-4 / 15	V
		dynamic	-8 / 19	
Maximum Junction Temperature	T_{jmax}		175	°C
Capacitor (DC)				
Maximum DC voltage	V_{MAX}		1000	V
Operation Temperature	T_{op}		0 ... 125	°C



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Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
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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
Isolation voltage	V_{isol}	AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			>12,7	mm
Clearance			10,19	mm
Comparative Tracking Index	CTI		≥ 200	



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Characteristic Values

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

Inverter Diode

Static

Forward voltage	V_F				10	25		1,5	1,8	V
Reverse leakage current	I_R	$V_i = 1200$ V				25		30	250	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						2,36		K/W
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Inverter Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		15		20	25		75	90	m Ω
Gate-source threshold voltage	$V_{GS(th)}$		0		0,005	25	1,7	2,5	4	V
Gate to Source Leakage Current	I_{GSS}		15	0		25		10	250	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	1200		25		1	100	μ A
Internal gate resistance	r_g							10,5		Ω
Gate charge	Q_g		-4/15	800	20	25		54		nC
Short-circuit input capacitance	C_{iss}	$f = 1$ Mhz						1350		pF
Short-circuit output capacitance	C_{oss}		0	1000	0	25		58		
Reverse transfer capacitance	C_{rss}							3		
Diode forward voltage	V_{SD}		0		10	25		4,5		V

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						2,01		K/W
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Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
		V_{GS} [V]	V_{GE} [V]	V_{DS} [V]	V_{CE} [V]	T_j [°C]	Min	Typ	Max	

Capacitor (DC)

Static

Capacitance	C	DC bias voltage = 0 V				25		47		nF
Tolerance							-10		10	%

Thermistor

Static

Rated resistance	R					25		5		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	$R_{100} = 499 \Omega$				100	3,2		3,3	%
Power dissipation	P					25		130		mW
Power dissipation constant	d					25		1,3		mW/K
B-value	$B_{(25/50)}$	Tol. $\pm 1 \%$						3380		K
Vincotech Thermistor Reference									V	



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Ordering Code	
Version	Ordering Code
Without thermal paste	10-PZ126PA075ME-M909F38Y
With thermal paste (5,2 W/mK, PTM6000HV)	10-PZ126PA075ME-M909F38Y-/7/
With thermal paste (3,4 W/mK, PSX-P7)	10-PZ126PA075ME-M909F38Y-/3/

Marking						
	Text	Name NN-NNNNNNNNNNNNNN- TTTTIV	Date code WWYY	UL & VIN UL VIN	Lot LLLLL	Serial SSSS
	Datamatrix	Type&Ver TTTTIV	Lot number LLLLL	Serial SSSS	Date code WWYY	

Pin table [mm]			
Pin	X	Y	Function
1	33,4	0	DC+
2	25,4	0	DC-
3	25,05	2,8	E5
4	25,05	5,6	G5
5	22,25	5,6	G3
6	22,25	2,8	E3
7	22,25	0	DC-
8	14,25	0	DC+
9	8	0	DC+
10	0	0	DC-
11	0	2,8	E1
12	0	5,6	G1
13	0	22,2	PH11
14	7,15	22,2	PH12
15	7,75	19,2	G2
16	7,75	16,4	E2
17	8,35	10,2	NTC1
18	11,15	11,5	NTC2
19	13,75	16,4	E4
20	13,75	19,2	G4
21	13,15	22,2	PH21
22	19,65	22,2	PH22
23	25,65	22,2	PH31
24	33,4	22,2	PH32
25	31,55	19,2	G6
26	31,55	16,4	E6

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

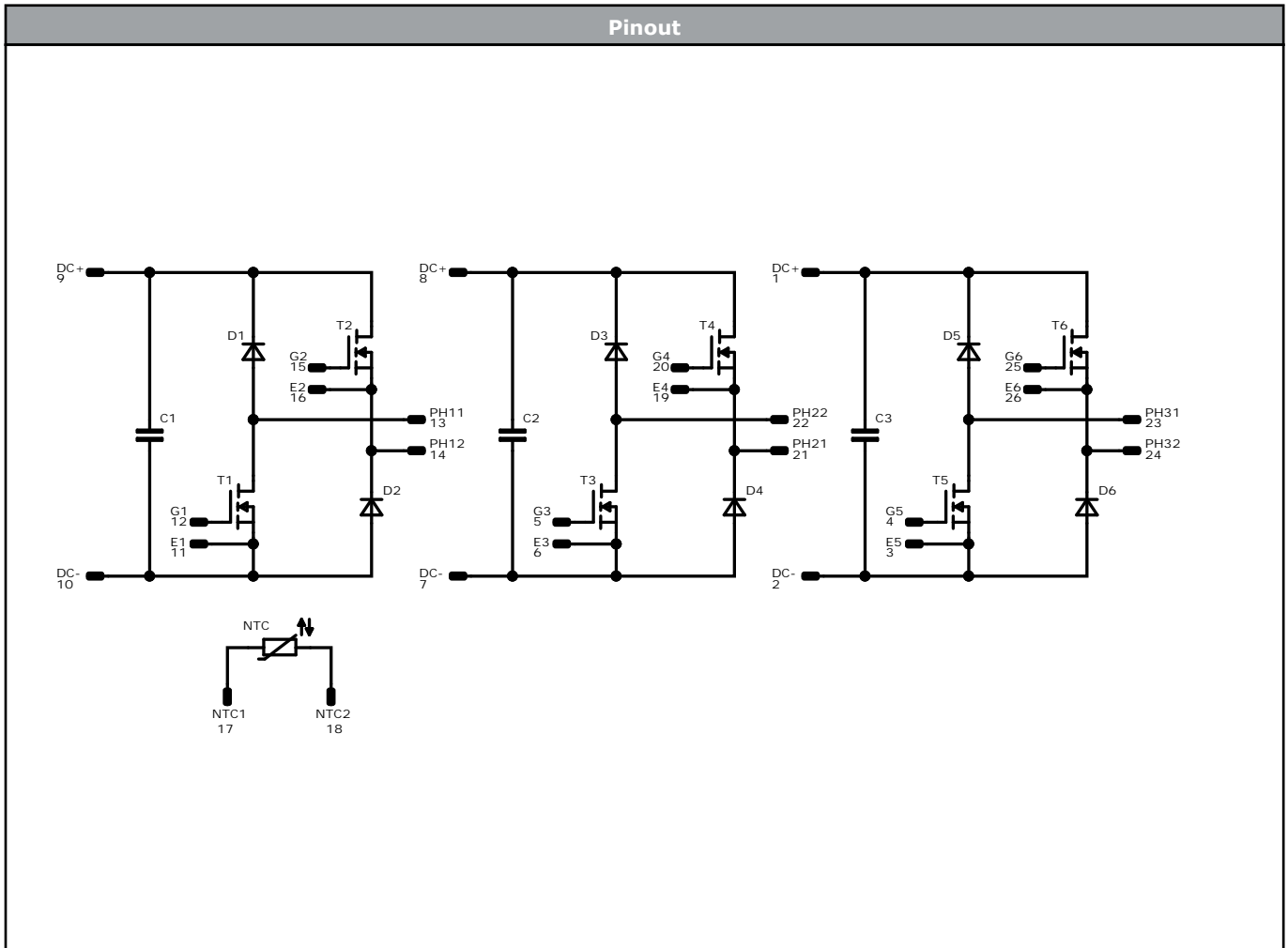
5,6 ±0,1
12,83 ±0,1
16,2 ±0,5

11,1
y
x
16,7

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
D1, D3, D5, D2, D4, D6	FWD	1200 V	10 A	Inverter Diode	
T1, T3, T5, T2, T4, T6	MOSFET	1200 V	75 mΩ	Inverter Switch	
C1, C2, C3	Capacitor	1000 V		Capacitor (DC)	
NTC	Thermistor			Thermistor	



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target datasheet

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.

Vincotech thermistor reference
See Vincotech thermistor reference table at 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-PZ126PA075ME-M909F38Y-T1-14	22 Jun. 2022		

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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