



Vincotech

10-EZ074PA021UF01-LQ18F98T
target datasheet

fastPACK E1 SiC

650 V / 21 mΩ

Features

- Compact and low inductive design
- High frequency SiC device
- Integrated NTC

Target applications

- Charging Stations
- Energy Storage Systems
- Power Supply
- Solar Inverters
- UPS
- Welding & Cutting

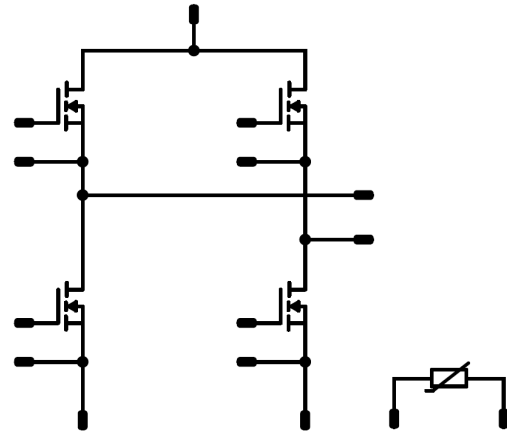
Types

- 10-EZ074PA021UF01-LQ18F98T

flow E1 12 mm housing



Schematic





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Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
H-Bridge Switch				
Drain-source voltage	V_{DSS}		650	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	60	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	250	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	83	W
Gate-source voltage	V_{GSS}		± 25	V
Maximum Junction Temperature	T_{jmax}		175	°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
Isolation voltage	V_{isol}	AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			>12,7	mm
Clearance			8,62	mm
Comparative Tracking Index	CTI		≥ 600	



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Characteristic Values

Parameter	Symbol	Conditions					Values			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		

H-Bridge Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		12		60	25 125		21 29,5	26	mΩ
Gate-source threshold voltage	$V_{GS(th)}$		0		0,02	25	4	5	6	V
Gate to Source Leakage Current	I_{GSS}		20	0		25		12	40	μA
Zero Gate Voltage Drain Current	I_{DSS}		0	650		25		1,4	300	μA
Internal gate resistance	r_g							2,25		Ω
Gate charge	Q_g		-5/12	400	60	25		86		nC
Short-circuit input capacitance	C_{iss}	$f = 100$ kHz	0	100	0	25		3000		pF
Short-circuit output capacitance	C_{oss}							400		
Reverse transfer capacitance	C_{rss}							4,4		
Diode forward voltage	V_{SD}		0		40	25		1,5	1,75	V

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						1,14		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	

Thermistor

Static


Rated resistance	R					25		5		kΩ
Deviation of R_{100}	$A_{R/R}$	$R_{100} = 493 \Omega$				100	-5		5	%
Power dissipation	P							245		mW
Power dissipation constant	d					25		1,4		mW/K
B-value	$B_{(25/50)}$	Tol. $\pm 2 \%$						3375		K
B-value	$B_{(25/100)}$	Tol. $\pm 2 \%$						3437		K
Vincotech Thermistor Reference									K	



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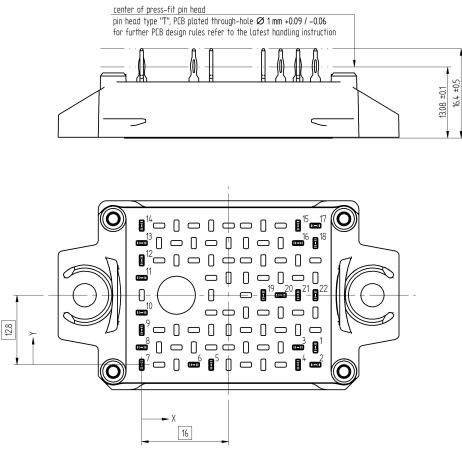
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Ordering Code	
Version	Ordering Code
Without thermal paste	10-EZ074PA021UF01-LQ18F98T
With thermal paste	10-EZ074PA021UF01-LQ18F98T-/-3/

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

Pin table [mm]				Outline
Pin	X	Y	Function	
1	32	3,2	DC-2	
2	32	0	DC-2	
3	28,8	3,2	S4	
4	28,8	0	G4	
5	12,8	0	T2	
6	9,6	0	T1	
7	0	0	AC2	
8	0	3,2	AC2	
9	0	6,4	S3	
10	0	9,6	G3	
11	0	16	G1	
12	0	19,2	S1	
13	0	22,4	AC1	
14	0	25,6	AC1	
15	28,8	25,6	G2	
16	28,8	22,4	S2	
17	32	25,6	DC-1	
18	32	22,4	DC-1	
19	22,4	12,8	DC+	
20	25,6	12,8	DC+	
21	28,8	12,8	DC+	
22	32	12,8	DC+	

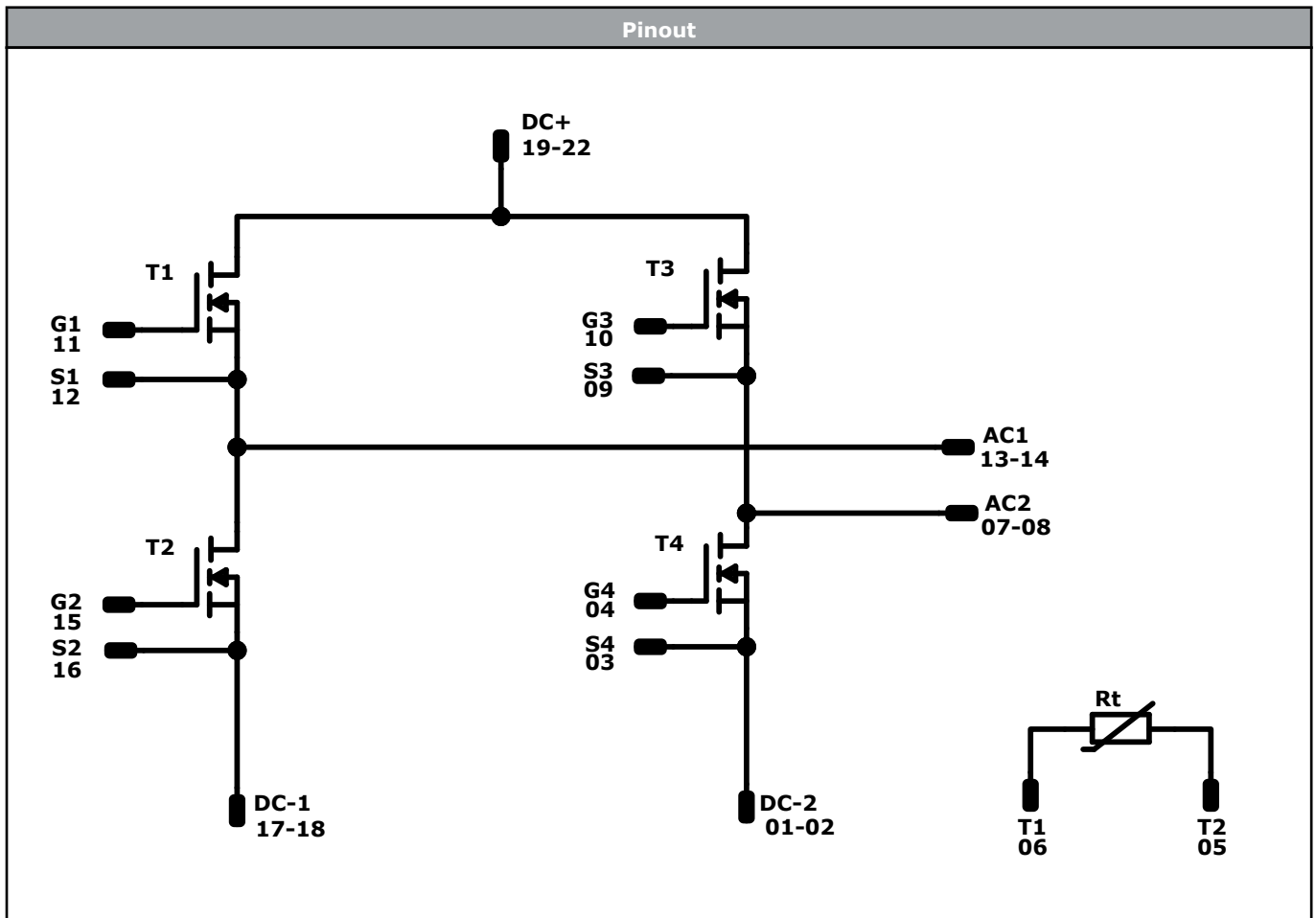
center of press-fit pin head
pin head type "T" PCB plated through-hole Ø 1mm +0.09 / -0.06
for further PCB design rules refer to the latest handling instruction



Tolerance of pinposition: ±0.1mm 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
T2, T1, T4, T3	MOSFET	650 V	21 mΩ	H-Bridge Switch	
Rt	Thermistor			Thermistor	




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

Handling instruction
Handling instructions for <i>flow</i> E1 packages see vincotech.com website.

Package data
Package data for <i>flow</i> E1 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-EZ074PA021UF01-LQ18F98T-T1-14	30 Mar. 2021	Initial Release	

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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