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# 10-EZ174RA018RO-LS07J83T

datasheet

fastPACK E1 SiC

1700 V / 18 A

## Features

- Bridge Rectifier
- SiC Diode
- Compact and low inductive design
- Integrated NTC

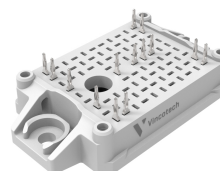
## Target applications

- Charging Stations
- Power Supply
- Welding & Cutting

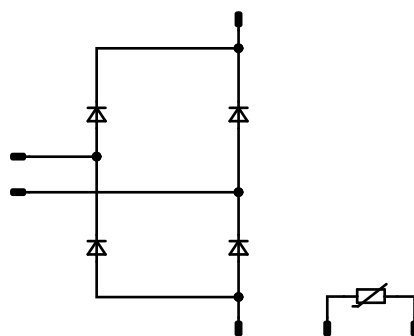
## Types

- 10-EZ174RA018RO-LS07J83T

## 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
<b>Rectifier Diode</b>				
Peak repetitive reverse voltage	$V_{RRM}$		1700	V
Forward current (DC current)	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	23	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	74	W
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
Creepage distance			> 12,7	mm
Clearance			8,62	mm
Comparative Tracking Index	CTI		≥ 600	

\*100 % tested in production



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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	

### Rectifier Diode

#### Static

Forward voltage	$V_F$				18	25 125 150		1,59 2,25 2,53	1,95 <sup>(1)</sup>	V
Reverse leakage current	$I_R$	$V_i = 1700$ V				25 150		1,8 40	108	μA

#### Thermal

Thermal resistance junction to sink <sup>(2)</sup>	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						1,28		K/W
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### Thermistor

#### Static

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

<sup>(1)</sup> Value at chip level

<sup>(2)</sup> Only valid with pre-applied Vincotech thermal interface material.



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## Rectifier Diode Characteristics

figure 1. FWD

Typical forward characteristics

$$I_F = f(V_F)$$

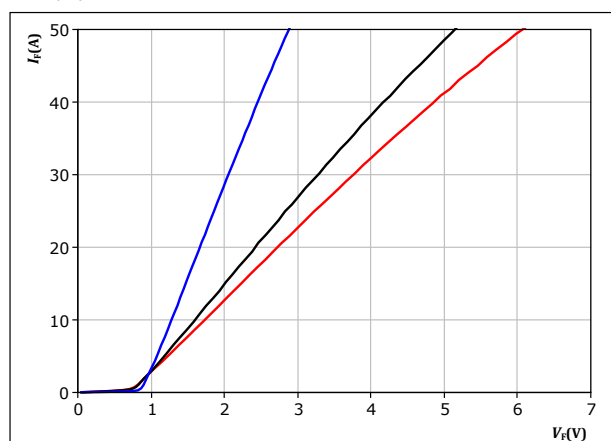
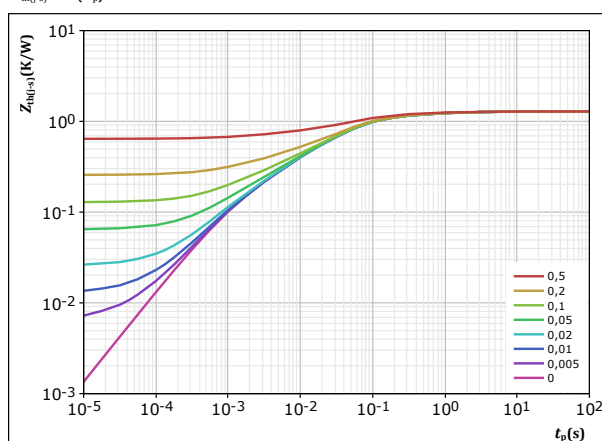


figure 2. FWD

Transient thermal impedance as a function of pulse width

$$Z_{th(j-s)} = f(t_p)$$





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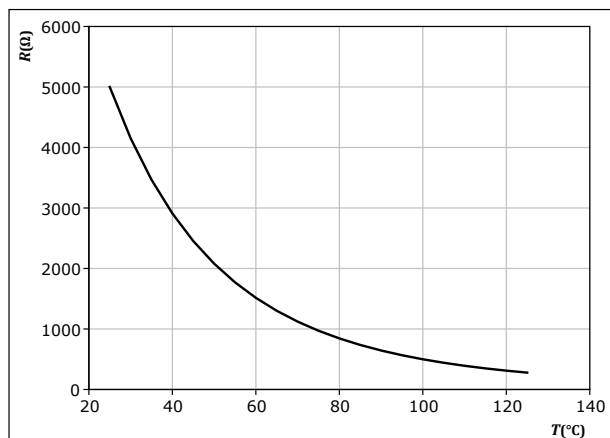
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## Thermistor Characteristics

**figure 3.** Thermistor

Typical NTC characteristic as function of temperature

$$R_T = f(T)$$





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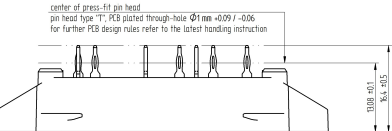
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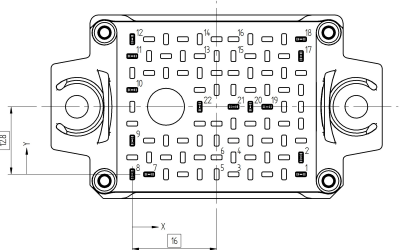
Ordering Code	
Version	Ordering Code
Without thermal paste	10-EZ174RA018RO-LS07J83T
With thermal paste (3,4 W/mK, PSX-P7)	10-EZ174RA018RO-LS07J83T-/3/

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

Pin table [mm]			
Pin	X	Y	Function
1	32	0	Ph2
2	32	3,2	Ph2
3	not assembled		
4	not assembled		
5	not assembled		
6	not assembled		
7	3,2	0	Ph1
8	0	0	Ph1
9	0	6,4	Therm2
10	0	16	Therm1
11	0	22,4	DC+
12	0	25,6	DC+
13	not assembled		
14	not assembled		
15	not assembled		
16	not assembled		
17	32	22,4	DC+
18	32	25,6	DC+
19	25,6	12,8	DC-
20	22,4	12,8	DC-
21	19,2	12,8	DC-
22	12,8	12,8	DC-

center of press-fit pin head  
pin head type "T": PCB plated through-hole  $\varnothing 1\text{ mm } +0.09 / -0.06$   
for further PCB design rules refer to the latest handling instruction





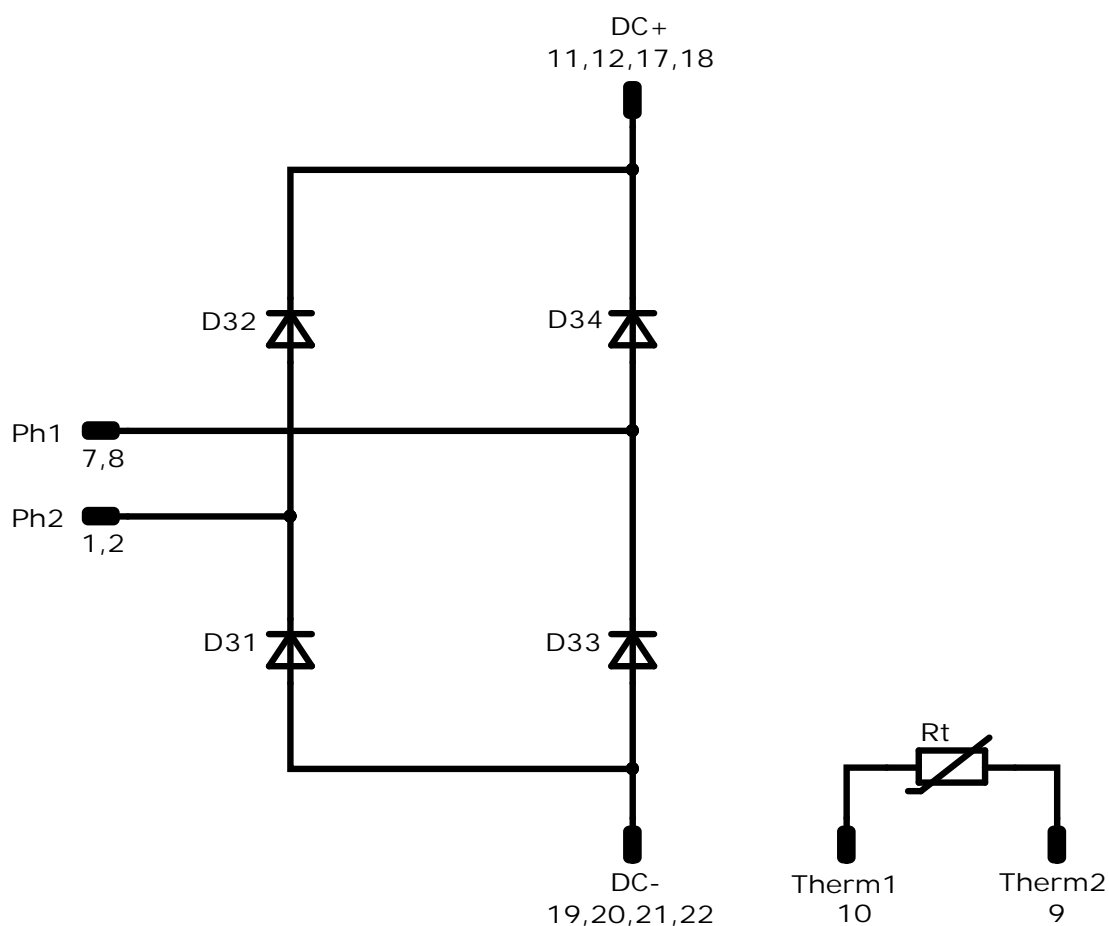
Tolerance of pinpositions:  $\pm 0.4\text{ mm}$  at the end of pins  
Dimension of coordinate axis is only offset without tolerance



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Pinout




Identification

ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34	FWD	1700 V	18 A	Rectifier Diode	
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-EZ174RA018RO-LS07J83T-D1-14	26 May. 2021		

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