



Vincotech

10-PZ07O2A020RO-LH01J88Y

datasheet

flowCON 0

650 V / 20 A

Features

- Single-phase Rectifier
- High speed SiC Diodes
- Low inductive design
- Integrated thermistor

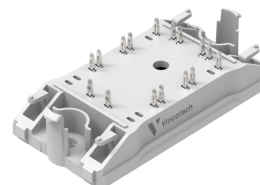
Target applications

- Charging Stations
- Power Supply

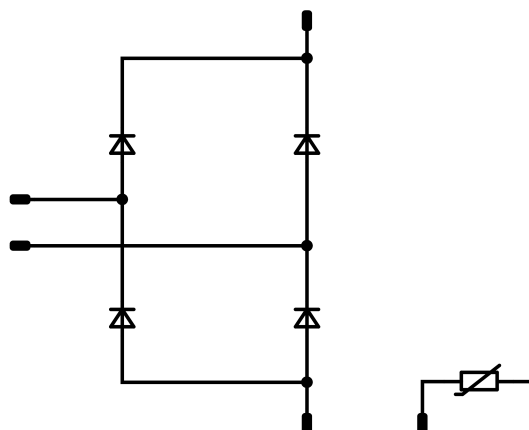
Types

- 10-PZ07O2A020RO-LH01J88Y

flow 0 12 mm housing



Schematic





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Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
Rectifier Diode				
Peak repetitive reverse voltage	V_{RRM}		650	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	31	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	80	A
Surge (non-repetitive) forward current	I_{FSM}	$t_p = 10\text{ }\mu\text{s}$ $T_j = 25\text{ °C}$	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	63	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
Isolation voltage	V_{isol}	AC Voltage $t_p = 1\text{ min}$	2500	V
Creepage distance			>12,7	mm
Clearance			9,15	mm
Comparative Tracking Index	CTI		≥ 200	

*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				20	25 125 150		1,38 1,52 1,57	1,55 ⁽¹⁾	V
Reverse leakage current	I_R	$V_i = 650$ V				25 150		4 60	400	μA

Thermal

Thermal resistance junction to sink ⁽²⁾	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						1,5		K/W
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Thermistor

Static

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

⁽¹⁾ Value at chip level

⁽²⁾ Only valid with pre-applied Vincotech thermal interface material.



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Rectifier Diode Characteristics

figure 1.

FWD

Typical forward characteristics

$$I_F = f(V_F)$$

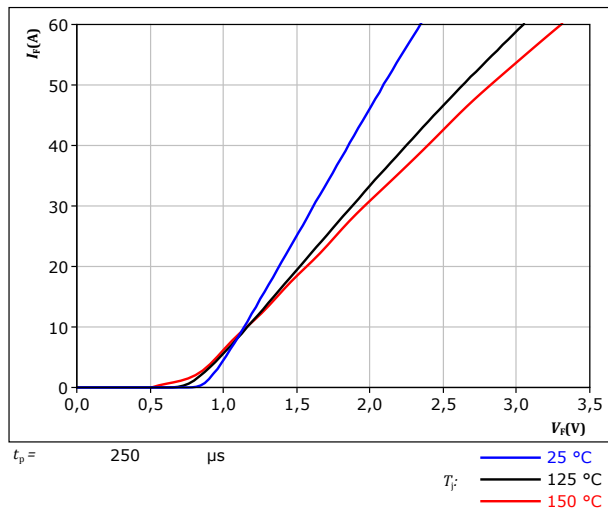
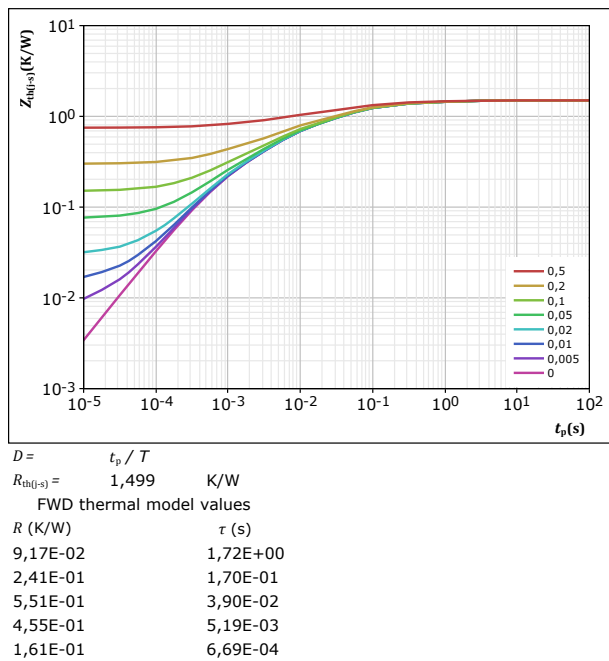


figure 2.

FWD

Transient thermal impedance as a function of pulse width

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





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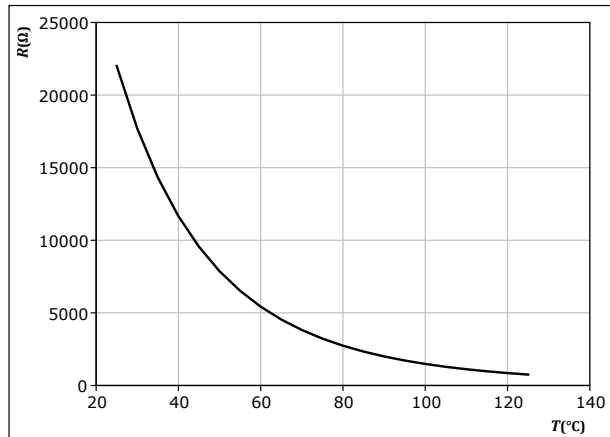
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Thermistor Characteristics

figure 3. Thermistor

Typical NTC characteristic as function of temperature


$$R_T = f(T)$$





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Ordering Code	
Version	Ordering Code
Without thermal paste	10-PZ07O2A020RO-LH01J88Y
With thermal paste	10-PZ07O2A020RO-LH01J88Y-/3/

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

Outline

Pin table [mm]

Pin	X	Y	Function
1			not assembled
2			not assembled
3	8,3	22,5	DC+Rect
4	10,8	22,5	DC+Rect
5	19,6	22,5	DC-Rect
6	22,1	22,5	DC-Rect
7			not assembled
8	32	22,5	ACIn1
9	33,5	17,8	ACIn1
10	33,5	15,3	ACIn1
11	33,5	7,2	ACIn2
12	33,5	4,7	ACIn2
13	32	0	ACIn2
14			not assembled
15	22,1	0	DC-Rect
16	19,6	0	DC-Rect
17	10,8	0	DC+Rect
18	8,3	0	DC+Rect
19			not assembled
20			not assembled
21	0	8	Therm1
22	0	14,5	Therm2

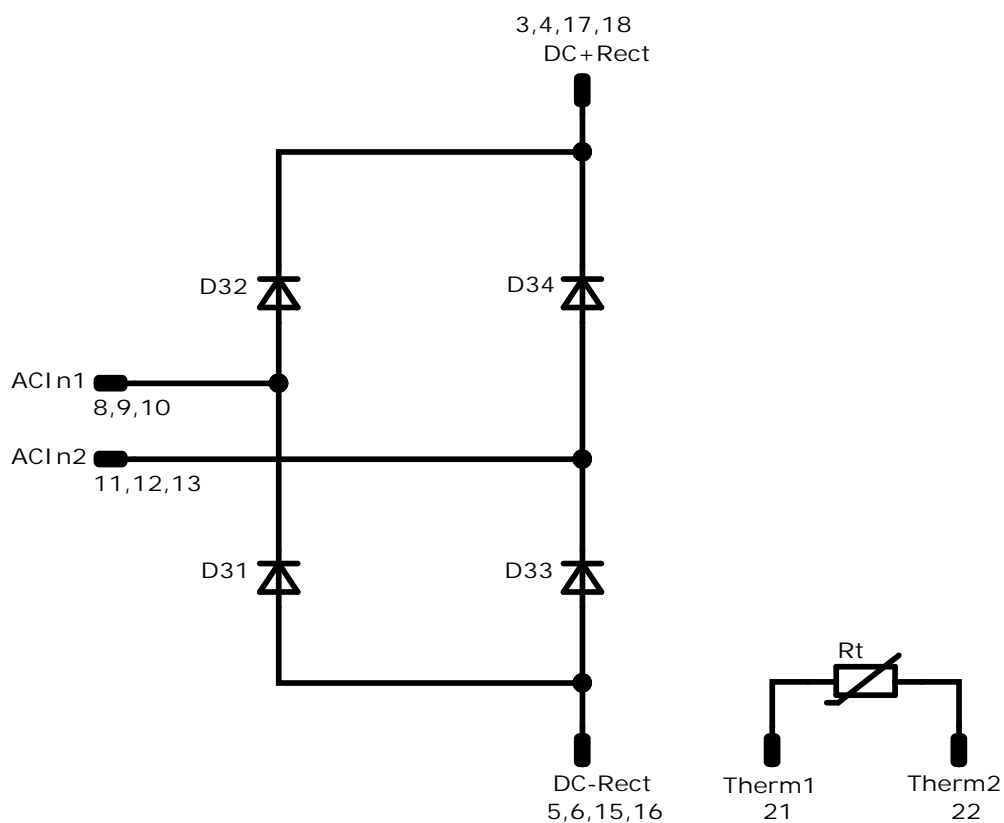
Tolerance of prepositions: $\pm 0.5\text{mm}$ at the end of pins
Dimension of coordinate axis is only offset without tolerance



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Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34	FWD	650 V	20 A	Rectifier Diode	
Rt	NTC			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.

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-PZ07O2A020RO-LH01J88Y-D1-14	1 Feb. 2021		

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