Vincotech

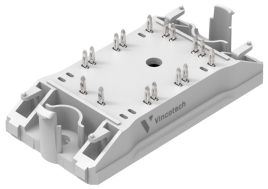
10-PZ12ORA100RO-LH00J88Y
datasheet

***flow*CON 0** **1200 V / 100 A**

Features

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

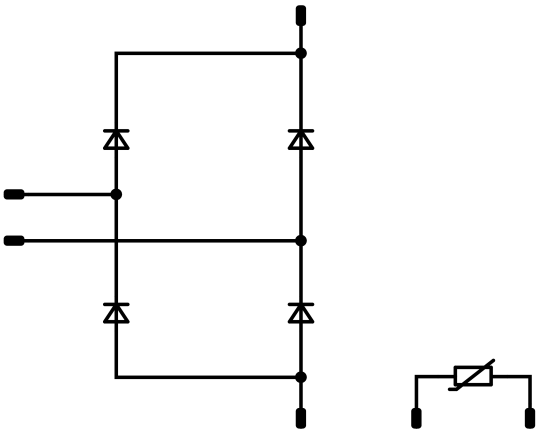
flow 0 12 mm housing



Target applications

- Charging Stations
- Industrial Drives
- Power Supply

Schematic



Types

- 10-PZ12ORA100RO-LH00J88Y

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
Rectifier Diode					
Peak repetitive reverse voltage	V_{RRM}			1200	V
Forward current (DC current)	I_F	T_j = T_{jmax}	T_s = 80 °C	91	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, t_p = 8,3 ms	T_j = 25 °C	414	A
Total power dissipation	P_{tot}	T_j = T_{jmax}	T_s = 80 °C	160	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 s	6000	V
Isolation voltage	V_{isol}	AC Voltage	t_p = 1 min	2500	V
Creepage distance				>12,7	mm
Clearance				9,15	mm
Comparative Tracking Index	CTI			≥ 200	

*100 % tested in production

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				100	25 125 150		1,36 1,67 1,79	1,6(1)	V
Reverse leakage current	I_R	V_r = 1200 V				25 150		100 800	2000	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,59		K/W
Thermistor										
Static										
Rated resistance	R					25		10		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	R_{100} = 854 Ω				100	-3		3	%
Power dissipation	P								5	mW
Power dissipation constant	d					25		1,3	1,5	mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %						3614		K
B-value	$B_{(25/100)}$	Tol. ±1 %						3650		K
Vincotech Thermistor Reference									T	

(1) Value at chip level

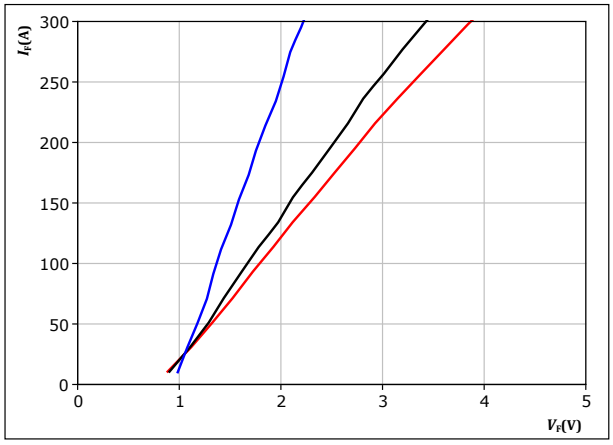
(2) Only valid with pre-applied Vincotech thermal interface material.

Rectifier Diode Characteristics

figure 1. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



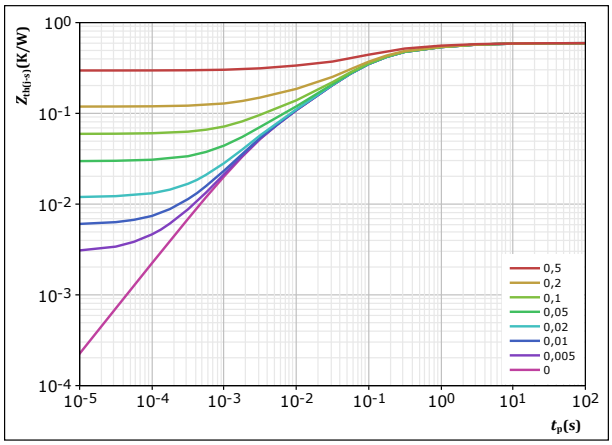
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 2. **FWD**

Transient thermal impedance as a function of pulse width

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



D = t_p / T

$R_{th(j-s)}$ = 0,594 K/W

FWD thermal model values

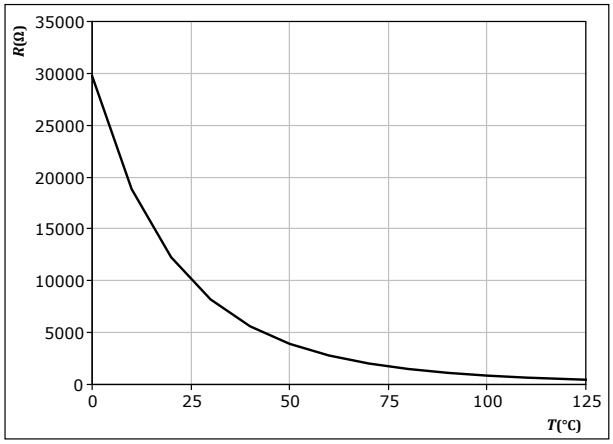
R (K/W)	τ (s)
1,56E-02	1,17E+01
8,65E-02	1,37E+00
2,61E-01	1,54E-01
1,79E-01	3,71E-02
5,13E-02	3,22E-03

Thermistor Characteristics

figure 3. **Thermistor**

Typical NTC characteristic as function of temperature

$R_T = f(T)$



Ordering Code

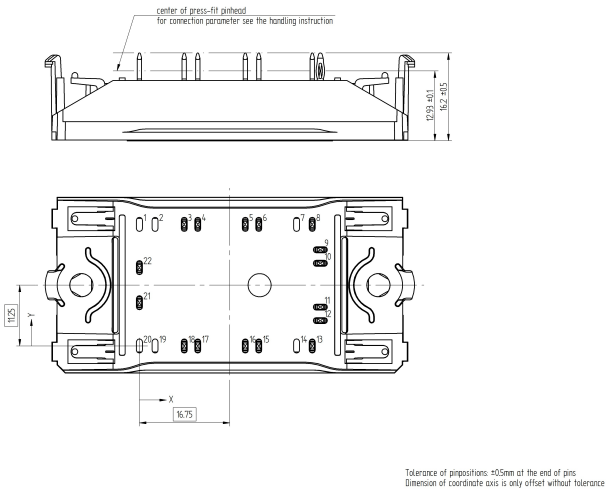
Version	Ordering Code
Without thermal paste	10-PZ12ORA100RO-LH00J88Y
With thermal paste	10-PZ12ORA100RO-LH00J88Y-/3/

Marking

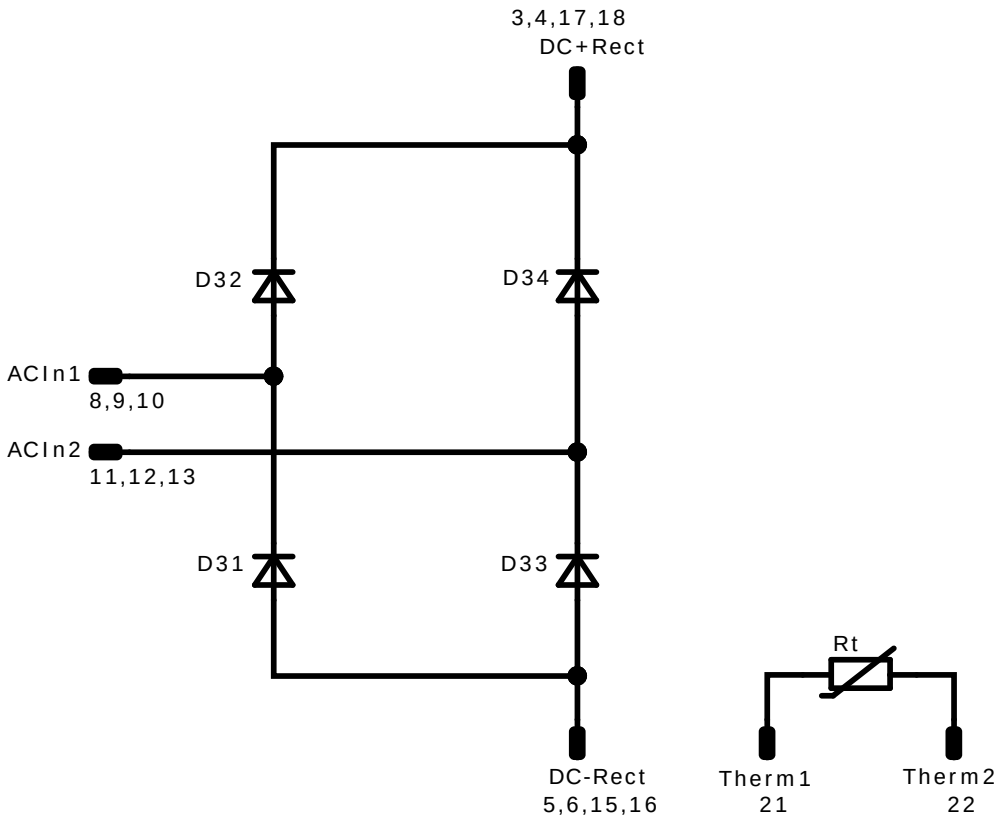
	Name		Date code	UL & VIN	Lot	Serial
Text	NN-NNNNNNNNNNNNNN-TTTTTTVV		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	**Type&Ver**	**Lot number**	**Serial**	**Date code**		
	TTTTTTVV	LLLLL	SSSS	WWYY		

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



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34	FWD	1200 V	100 A	Rectifier Diode	
Rt	NTC			Thermistor	

Packaging instruction				
Standard packaging quantity (SPQ) 135	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* 0 packages see vincotech.com website.

Package data
Package data for *flow* 0 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-PZ12ORA100RO-LH00J88Y-D2-14	24 Mar. 2021	Correct Thermistor	