Vincotech

10-FY076RA070VH-L824J58
datasheet

***flow*CON 1** **650 V / 70 A**

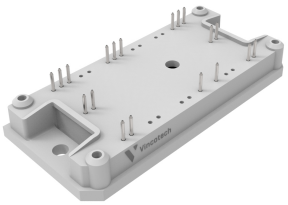
Topology features
- Temperature sensor
- Three-phase Rectifier

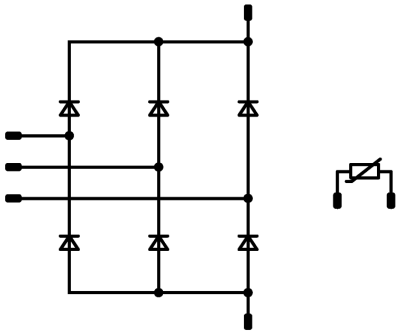
Component features
- Designed for high switching frequency
- Low forward voltage drop
- Low reverse recovery time and recovery charge

Housing features
- Base isolation: Al_2O_3
- Convex shaped substrate for superior thermal contact
- Thermo-mechanical push-and-pull force relief
- Solder pin

Target applications
- Elevator Drives
- Servo Drives
- Special Application

Types
- 10-FY076RA070VH-L824J58

flow 1 12 mm housing


Schematic


Maximum Ratings

T_j = 25 °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 °C	63	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	86	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
Creepage distance			>12,7	mm
Clearance			7,81	mm
Comparative Tracking Index	CTI		≥ 600	

*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				70	25 125 150		1,79 1,52 1,48	2,5(1)	V
Reverse leakage current	I_R	V_r = 650 V				25			15	µA
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						1,11		K/W
Thermistor										
Static										
Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P					25		130		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

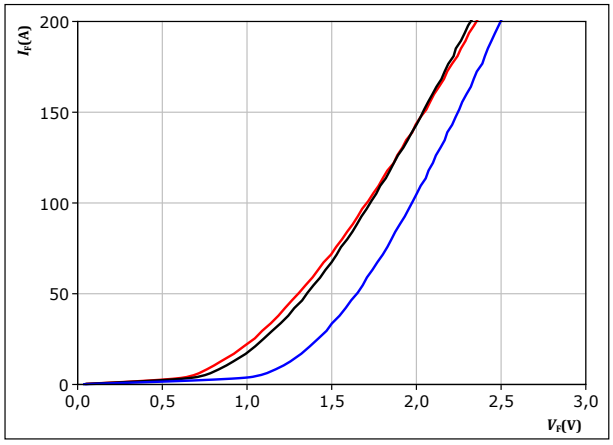
(2) Only valid with pre-applied Vincotech thermal interface material.

Rectifier Diode Characteristics

figure 1. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



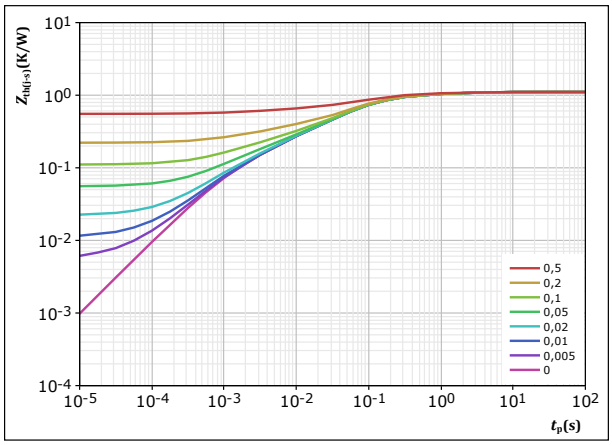
t_p = 250 µs

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

$R_{th(j-s)}$ = 1,107 K/W

FWD thermal model values

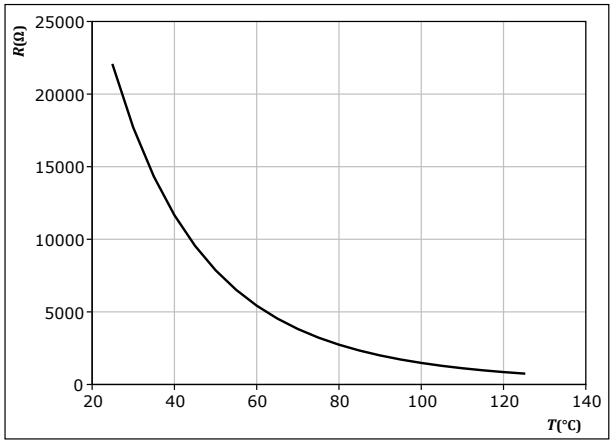
R (K/W)	τ (s)
8,97E-02	2,23E+00
2,36E-01	2,84E-01
5,62E-01	6,41E-02
1,48E-01	6,95E-03
6,99E-02	1,04E-03

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-FY076RA070VH-L824J58
With thermal paste (5,2 W/mK, PTM6000HV)	10-FY076RA070VH-L824J58-/7/
With thermal paste (3,4 W/mK, PSX-P7)	10-FY076RA070VH-L824J58-/3/

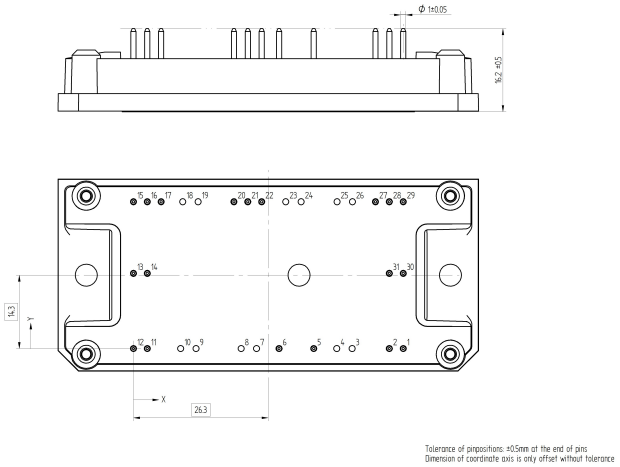
Marking

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

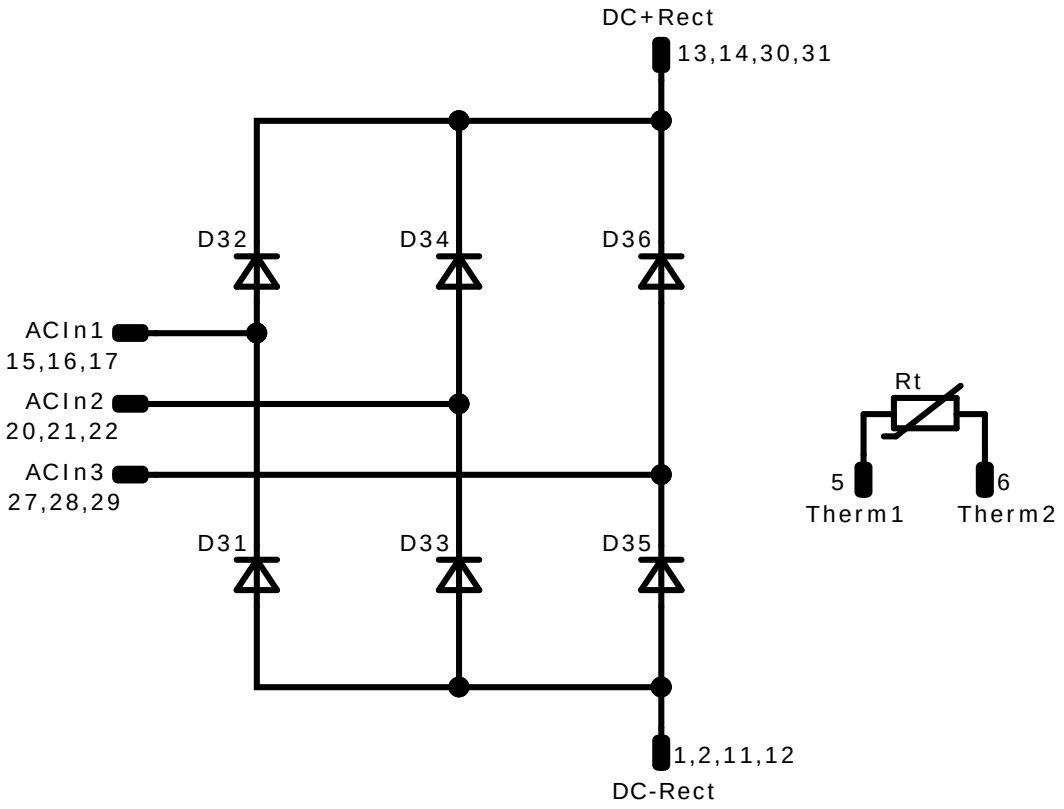
Outline

Pin table [mm]

Pin	X	Y	Function
1	52,6	0	DC-Rect
2	49,9	0	DC-Rect
3	not assembled		
4	not assembled		
5	35,15	0	Therm1
6	28,4	0	Therm2
7	not assembled		
8	not assembled		
9	not assembled		
10	not assembled		
11	2,7	0	DC-Rect
12	0	0	DC-Rect
13	0	14,65	DC+Rect
14	2,7	14,65	DC+Rect
15	0	28,6	ACIn1
16	2,7	28,6	ACIn1
17	5,4	28,6	ACIn1
18	not assembled		
19	not assembled		
20	19,6	28,6	ACIn2
21	22,3	28,6	ACIn2
22	25	28,6	ACIn2
23	not assembled		
24	not assembled		
25	not assembled		
26	not assembled		
27	47,2	28,6	ACIn3
28	49,9	28,6	ACIn3
29	52,6	28,6	ACIn3
30	52,6	14,65	DC+Rect
31	49,9	14,65	DC+Rect



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34, D35, D36	FWD	650 V	70 A	Rectifier Diode	
Rt	Thermistor			Thermistor	

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

Handling instruction
Handling instructions for *flow* 1 packages see vincotech.com website.

Package data
Package data for *flow* 1 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 UL 1557 recognized under E192116 up to a junction temperature under switching condition $T_{j,op}$=175°C and up to 3500VAC/1min isolation voltage. For more information see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-FY076RA070VH-L824J58-D1-14	3 Jul. 2023		
10-FY076RA070VH-L824J58-D2-14	21 Jun. 2024	Correct Product line	