Vincotech

10-F0186RA060RW-L619H09
datasheet

***flow*CON 0** **1800 V / 60 A**

Topology features

- Three-phase Rectifier

Component features

- High inrush current capability

Housing features

- Base isolation: Al_2O_3
- Clip-in, reliable mechanical connection, qualified for wave soldering
- Convex shaped substrate for superior thermal contact
- Thermo-mechanical push-and-pull force relief
- Solder pin

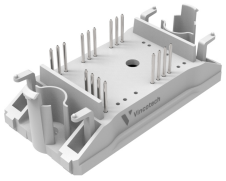
Target applications

- Embedded Drives
- Industrial Drives

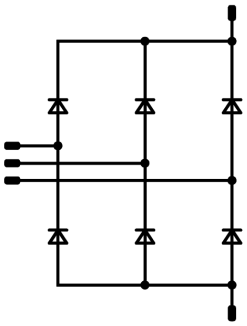
Types

- 10-F0186RA060RW-L619H09

flow 0 17 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}			1800	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	81	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, t_p = 10 ms	T_j = 150 °C	740	A
Surge current capability	I^2t			2740	A^2s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	92	W
Maximum junction temperature	T_{jmax}			150	°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				>12,7	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				80	25 125 150		1,18 1,15	1,23(1) 1,17(1)	V
Reverse leakage current	I_R	V_r = 1800 V				25 150			50 1500	µA
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,76		K/W

(1) Value at chip level

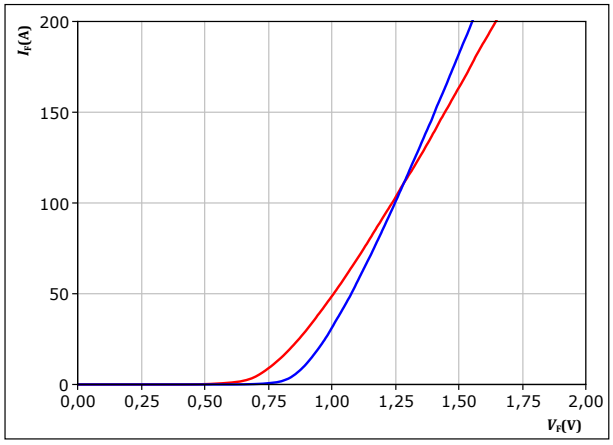
(2) Only valid with pre-applied Vincotech thermal interface material.

Rectifier Diode Characteristics

figure 1. **Rectifier**

Typical forward characteristics

$I_F = f(V_F)$



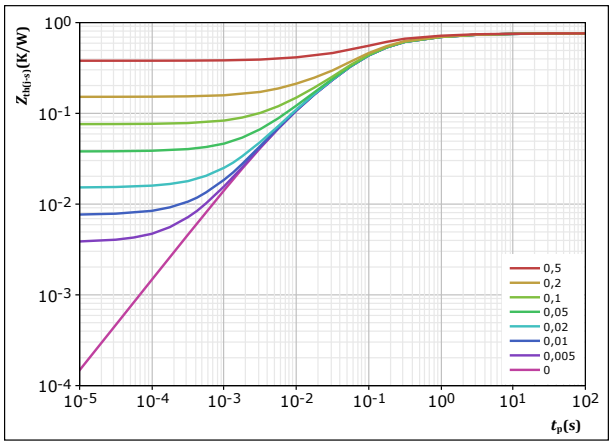
t_p = 250 µs

T_j: 25 °C, 125 °C

figure 2. **Rectifier**

Transient thermal impedance as a function of pulse width

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



D = t_p / T

$R_{th(j-s)}$ = 0,76 K/W

Rectifier thermal model values

R (K/W)	τ (s)
3,13E-02	8,05E+00
1,13E-01	9,15E-01
3,24E-01	1,46E-01
2,40E-01	4,86E-02
5,24E-02	7,00E-03

Ordering Code

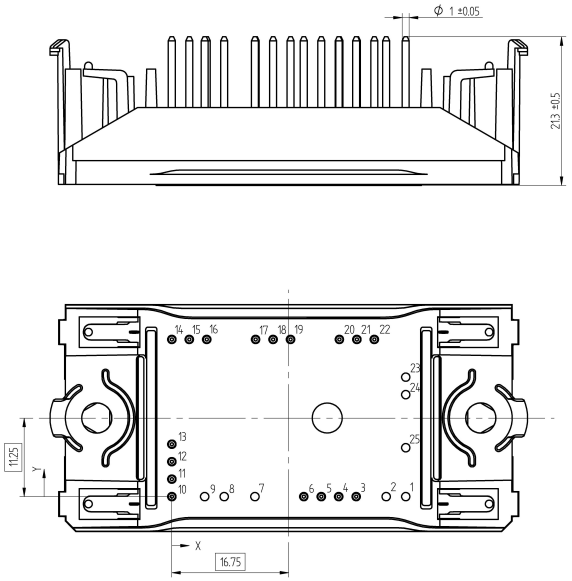
Version	Ordering Code
Without thermal paste	10-F0186RA060RW-L619H09
With thermal paste (5,2 W/mK, PTM6000HV)	10-F0186RA060RW-L619H09-/7/

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		

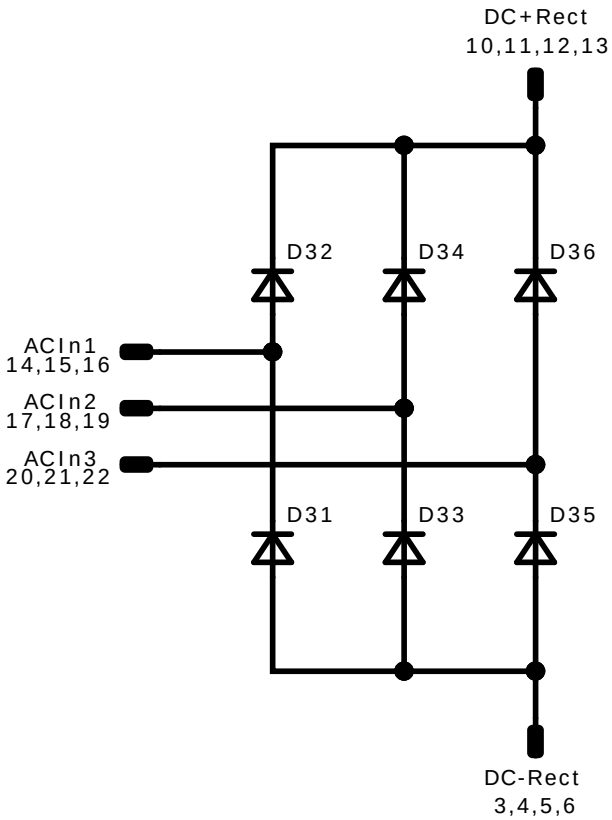
Outline

Pin table [mm]			
Pin	X	Y	Function
1	not assembled		
2	not assembled		
3	26,4	0	DC-
4	23,9	0	DC-
5	21,4	0	DC-
6	18,9	0	DC-
7	not assembled		
8	not assembled		
9	not assembled		
10	0	0	DC+
11	0	2,5	DC+
12	0	5	DC+
13	0	7,5	DC+
14	0	22,5	L1
15	2,5	22,5	L1
16	5	22,5	L1
17	12	22,5	L2
18	14,5	22,5	L2
19	17	22,5	L2
20	24	22,5	L3
21	26,5	22,5	L3
22	29	22,5	L3
23	not assembled		
24	not assembled		
25	not assembled		



Tolerance of pinpositions: ±0.5mm at the end of pins
Dimension of coordinate axis is only offset without tolerance

Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34, D35, D36	Rectifier	1800 V	80 A	Rectifier Diode	

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 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-F0186RA060RW-L619H09-D2-14	1 May. 2022	New Datasheet format, module is unchanged	
10-F0186RA060RW-L619H09-D3-14	25 Apr. 2025	Visol DC Test Voltage increased	