



Vincotech

10-EY186RA070RW-PL77H08T

datasheet

flowCON E2

1800 V / 70 A

Topology features

- Three-phase Rectifier

Component features

- High inrush current capability

Housing features

- Base isolation: Al_2O_3
- Convex shaped substrate for superior thermal contact
- Compact housing
- CTI600 housing material
- Thermo-mechanical push-and-pull force relief
- Press-fit pin
- Reliable cold welding connection

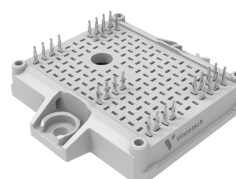
Target applications

- Industrial Drives
- Welding & Cutting

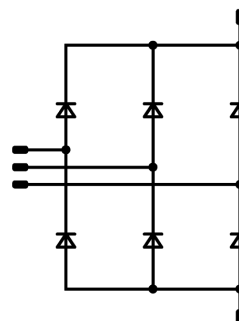
Types

- 10-EY186RA070RW-PL77H08T

flow E2 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}		1800	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_a = 80\text{ °C}$	114	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, $t_p = 10\text{ ms}$ $T_j = 25\text{ °C}$	840	A
Surge current capability	I^2t		3528	A ² s
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_a = 80\text{ °C}$	135	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* $t_p = 2\text{ s}$	6000	V
Creepage distance			>12,7	mm
Clearance			9,68	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				70	25 125 150		1,09 1,04 1,03	1,2 ⁽¹⁾	V
Reverse leakage current	I_R	$V_r = 1800$ V				25 150			10 2000	µA

Thermal

Thermal resistance junction to sink ⁽²⁾	$R_{th(j-s)}$	$\lambda_{paste} = 5,2$ W/mK (PTM)						0,52		K/W
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⁽¹⁾ Value at chip level

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



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Rectifier Diode Characteristics

figure 1.

Rectifier

Typical forward characteristics

$$I_F = f(V_F)$$

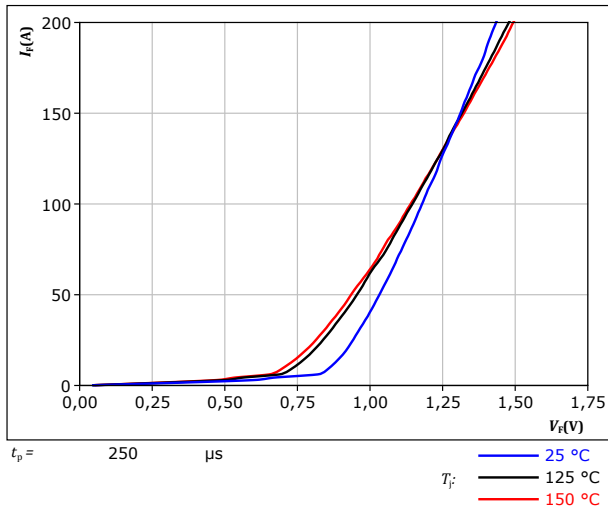
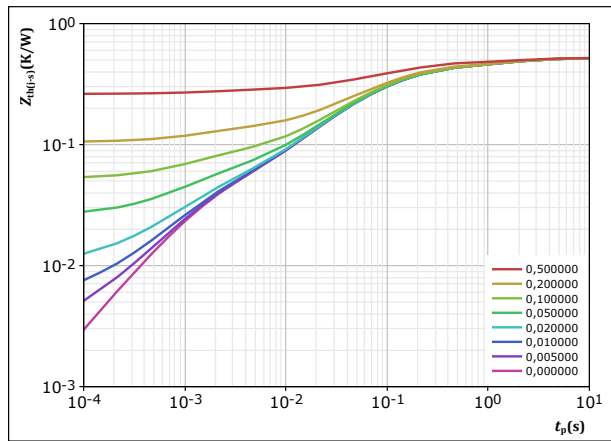


figure 2.

Rectifier

Transient thermal impedance as a function of pulse width

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





datasheet

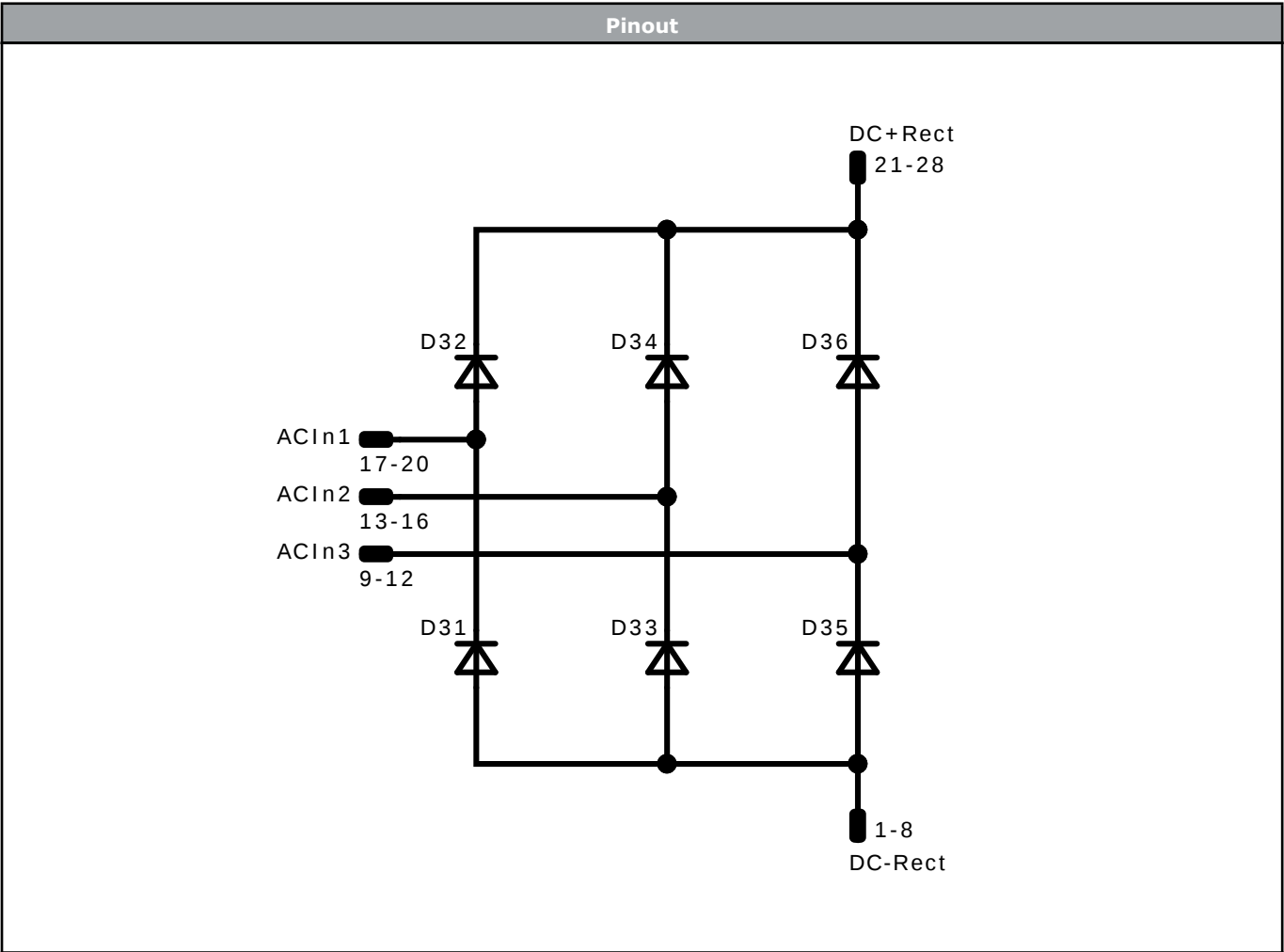
Ordering Code	
Version	Ordering Code
Without thermal paste	10-EY186RA070RW-PL77H08T
With thermal paste (5,2 W/mK, PTM6000HV)	10-EY186RA070RW-PL77H08T-/7/

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

Pin table [mm]			
Pin	X	Y	Function
1	32	0	DC-Rect
2	28,8	0	DC-Rect
3	25,6	0	DC-Rect
4	22,4	0	DC-Rect
5	32	3,2	DC-Rect
6	28,8	3,2	DC-Rect
7	25,6	3,2	DC-Rect
8	22,4	3,2	DC-Rect
9	9,6	0	ACIn3
10	6,4	0	ACIn3
11	3,2	0	ACIn3
12	0	0	ACIn3
13	0	19,2	ACIn2
14	3,2	19,2	ACIn2
15	6,4	19,2	ACIn2
16	9,6	19,2	ACIn2
17	0	48	ACIn1
18	3,2	48	ACIn1
19	6,4	48	ACIn1
20	9,6	48	ACIn1
21	22,4	48	DC+Rect
22	25,6	48	DC+Rect
23	28,8	48	DC+Rect
24	32	48	DC+Rect
25	22,4	44,8	DC+Rect
26	25,6	44,8	DC+Rect
27	28,8	44,8	DC+Rect
28	32	44,8	DC+Rect

center of press-fit pin head
pin head type TP, P/B plated through-hole Ø1mm ±0.09 / -0.06
for further P/B design rules refer to the latest handling instruction

Tolerance of placements: ±0.4mm at the end of pins
Dimension of coordinate axis is only offset without tolerance



Identification					
ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34, D35, D36	Rectifier	1800 V	70 A	Rectifier Diode	



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Packaging instruction				
Standard packaging quantity (SPQ) 100	>SPQ	Standard	<SPQ	Sample
Handling instruction				
Handling instructions for <i>flow</i> E2 packages see vincotech.com website.				
Package data				
Package data for <i>flow</i> E2 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 $T_{j,sp}=175^{\circ}\text{C}$ and up to 3500VAC/1min isolation voltage. For more information see vincotech.com website.				

Document No.:	Date:	Modification:	Pages
10-EY186RA070RW-PL77H08T-D1-14	25 Apr. 2025	Initial Release	

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