



Vincotech

10-EY126RA040CD-PJ17J98T

datasheet

flowCON E2 SiC

1200 V / 40 A

Topology features

- Temperature sensor
- Three-phase Rectifier
- splitted DC-

Component features

- No diode recovery losses
- Very fast switching

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

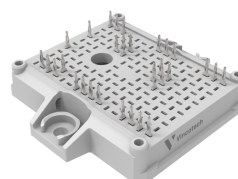
Target applications

- Charging Stations

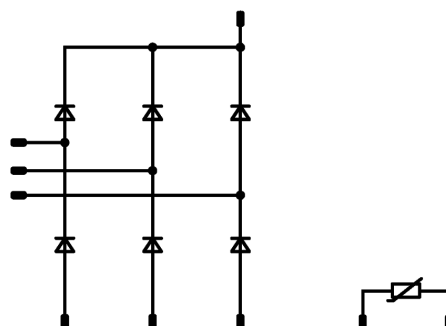
Types

- 10-EY126RA040CD-PJ17J98T

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}		1200	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_a = 80\text{ °C}$	57	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	128	A
Surge (non-repetitive) forward current	I_{FSM}	Single Half Sine Wave, $t_p = 10\text{ ms}$ $T_j = 110\text{ °C}$	324	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_a = 80\text{ °C}$	113	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
Creepage distance			>12,7	mm
Clearance			9,11	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				40	25 125 150		1,34 1,54 1,61	1,8 ⁽¹⁾	V
Reverse leakage current	I_R	$V_r = 1200$ V				25		11,2	2000	µA

Thermal

Thermal resistance junction to sink ⁽²⁾	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,84		K/W
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Thermistor

Static

Rated resistance	R					25		5		kΩ
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 499$ Ω				100	3,2		3,3	%
Power dissipation	P					25		130		mW
Power dissipation constant	d					25		1,3		mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %						3380		K
Vincotech Thermistor Reference									V	

⁽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

$$I_F = f(V_F)$$

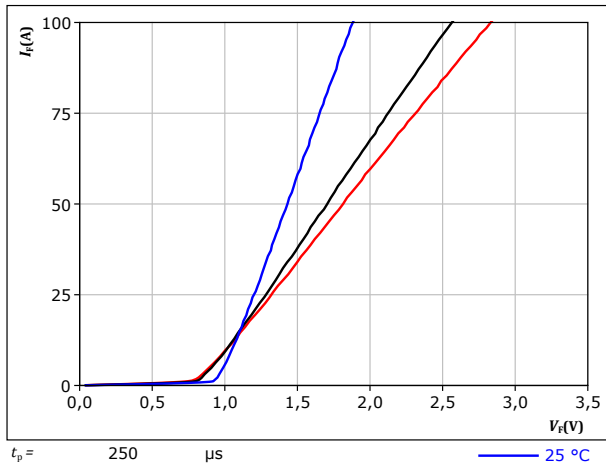
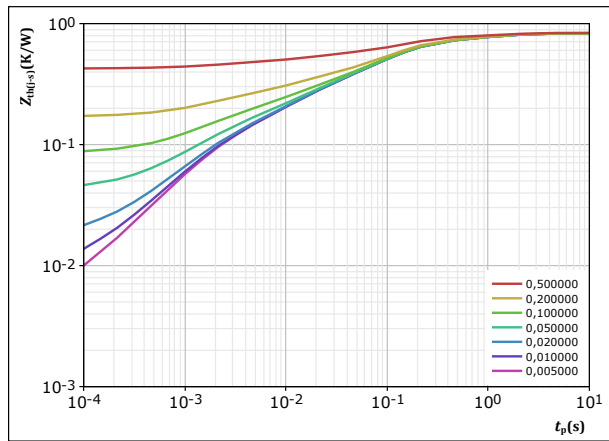


figure 2.

FWD

Transient thermal impedance as a function of pulse width

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





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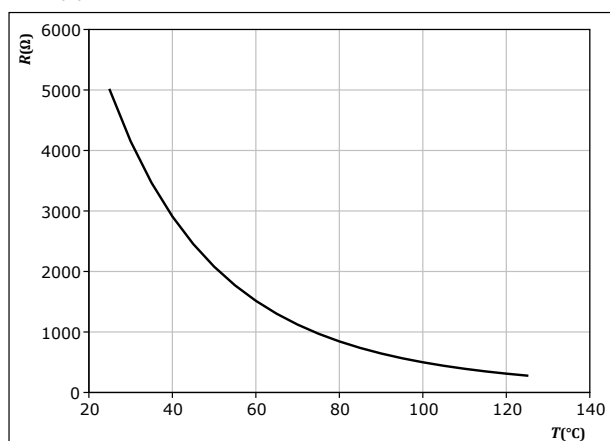
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Thermistor Characteristics

figure 3. Thermistor

Typical NTC characteristic as function of temperature

$$R_T = f(T)$$





datasheet

Pin table [mm]			
Pin	X	Y	Function
1	not assembled		
2	not assembled		
3	0	0	ACIn1
4	0	3,2	ACIn1
5	0	6,4	ACIn1
6	0	9,6	ACIn1
7	not assembled		
8	not assembled		
9	0	19,2	ACIn2
10	0	22,4	ACIn2
11	0	25,6	ACIn2
12	0	28,8	ACIn2
13	3,2	38,4	ACIn3
14	0	38,4	ACIn3
15	0	41,6	ACIn3
16	0	44,8	ACIn3
17	not assembled		
18	not assembled		
19	12,8	48	Therm2
20	22,4	48	Therm1
21	not assembled		
22	not assembled		
23	32	48	DC-Rect3
24	32	44,8	DC-Rect3
25	32	41,6	DC-Rect3
26	32	25,6	DC-Rect2
27	32	22,4	DC-Rect2
28	32	19,2	DC-Rect2
29	not assembled		
30	not assembled		
31	22,4	12,8	DC+Rect
32	19,2	12,8	DC+Rect
33	16	12,8	DC+Rect
34	19,2	16	DC+Rect
35	22,4	16	DC+Rect
36	25,6	32	DC+Rect
37	22,4	32	DC+Rect
38	22,4	35,2	DC+Rect
39	25,6	35,2	DC+Rect
40	32	6,4	DC-Rect1
41	32	3,2	DC-Rect1
42	32	0	DC-Rect1
43	not assembled		
44	not assembled		

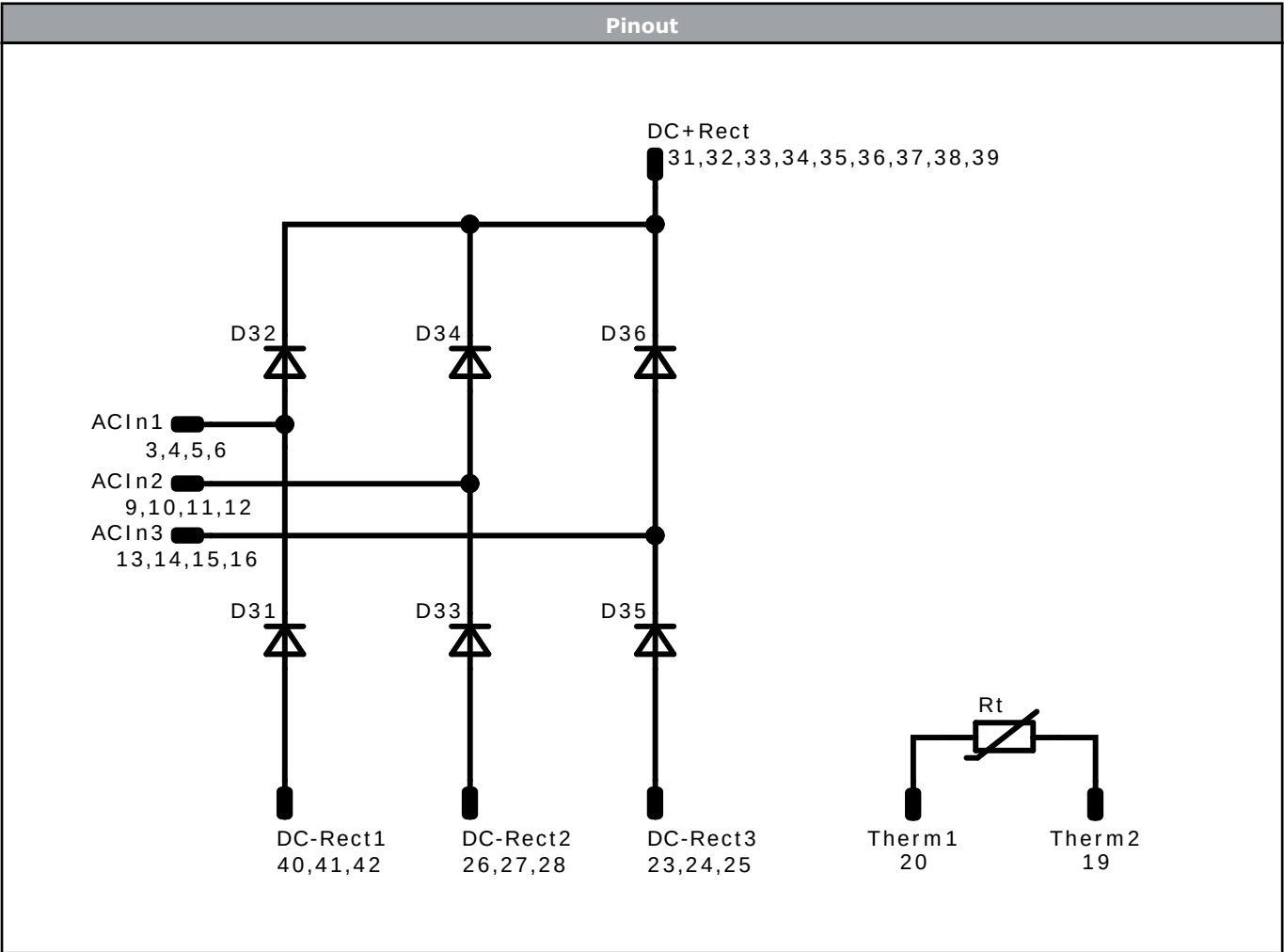
center of press-fit pin head
pin head type "F": PCB plated through-hole ØH mm ±0,05 / -0,06
for further PCB design rules refer to the solder handling instruction

Tolerance of pitch/pins: ±0,05mm at the end of pins
Dimension of coordinate axis is only offset without tolerance



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Identification					
ID	Component	Voltage	Current	Function	Comment
D31, D32, D33, D34, D35, D36	FWD	1200 V	40 A	Rectifier Diode	
Rt	Thermistor			Thermistor	



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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-EY126RA040CD-PJ17J98T-D1-14	22 Nov. 2023	Initial Release	
10-EY126RA040CD-PJ17J98T-D2-14	22 Feb. 2025	Change Rectifier Diode	

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