



flowDUAL E2 SiC

2300 V / 5 mΩ

Topology features

- Gate Resistor
- Half Bridge
- Temperature sensor

Component features

- Fast intrinsic diode with low reverse recovery
- High blocking voltage with low on-resistance
- High speed switching with low capacitance

Housing features

- Base isolation: AlN
- 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

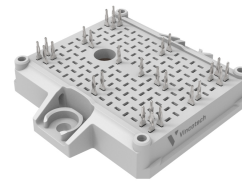
Target applications

- Charging Stations
- Energy Storage Systems
- General
- Industrial Drives
- Power Supply
- UPS
- Welding & Cutting

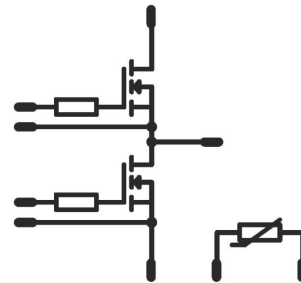
Types

- 10-EY232PB005ME01-PN99F08T

flow E2 12 mm housing



Schematic





Vincotech

Maximum Ratings

$T_j = 25\text{ °C}$, unless otherwise specified

Parameter	Symbol	Conditions	Value	Unit
Inverter Switch				
Drain-source voltage	V_{DSS}		2300	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	496	A
Peak drain current	I_{DM}	i_p limited by T_{jmax}	996	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	601	W
Gate-source voltage	V_{GSS}		-4 / 15	V
		dynamic	-8 / 19	
Maximum Junction Temperature	T_{jmax}		175	°C

Resistor

DC current	I	terminal temperature $T_k = 90\text{ °C}$	939	mA
Power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	0,75	W
Operation Temperature	T_{op}		-55 ... 155	°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 $t_p = 2\text{ s}$	6800	V
Creepage distance			>12,7	mm
Clearance			9,05	mm
Comparative Tracking Index	CTI		≥ 600	



Vincotech

10-EY232PB005ME01-PN99F08T
target datasheet

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
		V_{GS} [V]	V_{GE} [V]	V_{DS} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	

Inverter Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		15		414	25		5	6,5	mΩ
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$			0,114	25	1,8	2,5	3,6	V
Gate to Source Leakage Current	I_{GSS}		15	0		25		60		nA
Zero Gate Voltage Drain Current	I_{DSS}		0	2300		25		6		μA
Internal gate resistance	r_g							1,67		Ω
Gate charge	Q_g		-4/15	1500	414	25		882		nC
Short-circuit input capacitance	C_{iss}	$f = 100$ kHz	0	1500	0	25		36000		pF
Short-circuit output capacitance	C_{oss}							612		
Reverse transfer capacitance	C_{rss}							60		
Diode forward voltage	V_{SD}		0		210	25		5,5		V

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 5,2$ W/mK (PTM)						0,16		K/W
-------------------------------------	---------------	------------------------------------	--	--	--	--	--	------	--	-----

Resistor

Static

Resistance	R							0,85		Ω
Tolerance							-5		5	%
Temperature coefficient	tc							200		ppm/K



Vincotech

Characteristic Values

Parameter	Symbol	Conditions					Values			Unit
		V_{GS} [V]	V_{GE} [V]	V_{DS} [V]	V_F [V]	T_j [°C]	Min	Typ	Max	

Thermistor

Static


Rated resistance	R					25		5		kΩ
Deviation of R100	$A_{R/R}$	$R_{100} = 499 \Omega$				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. $\pm 1 \%$						3380		K
Vincotech Thermistor Reference									V	



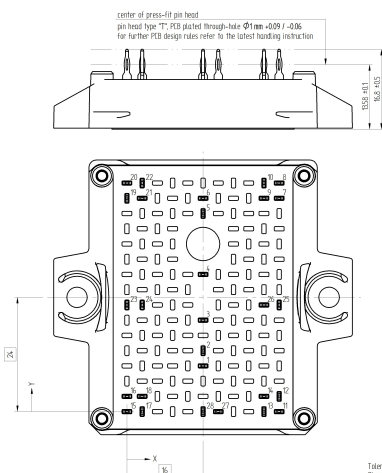
Vincotech

10-EY232PB005ME01-PN99F08T
target datasheet

Ordering Code	
Version	Ordering Code
Without thermal paste	10-EY232PB005ME01-PN99F08T
With thermal paste (5,2 W/mK, PTM6000HV)	10-EY232PB005ME01-PN99F08T-/7/

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

Outline				
Pin table [mm]				
Pin	X	Y	Function	
1	16	9,6	DC-	
2	16	12,8	DC-	
3	16	19,2	DC-	
4	16	28,8	DC-	
5	16	41,6	DC-	
6	16	44,8	DC-	
7	32	44,8	DC+	
8	32	48	DC+	
9	28,8	44,8	DC+	
10	28,8	48	DC+	
11	32	0	DC+	
12	32	3,2	DC+	
13	28,8	0	DC+	
14	28,8	3,2	DC+	
15	0	0	Ph	
16	0	3,2	Ph	
17	3,2	0	Ph	
18	3,2	3,2	Ph	
19	0	44,8	Ph	
20	0	48	Ph	
21	3,2	44,8	Ph	
22	3,2	48	Ph	
23	0	22,4	G11	
24	3,2	22,4	S11	
25	32	22,4	G12	
26	28,8	22,4	S12	
27	19,2	0	Therm1	
28	16	0	Therm2	



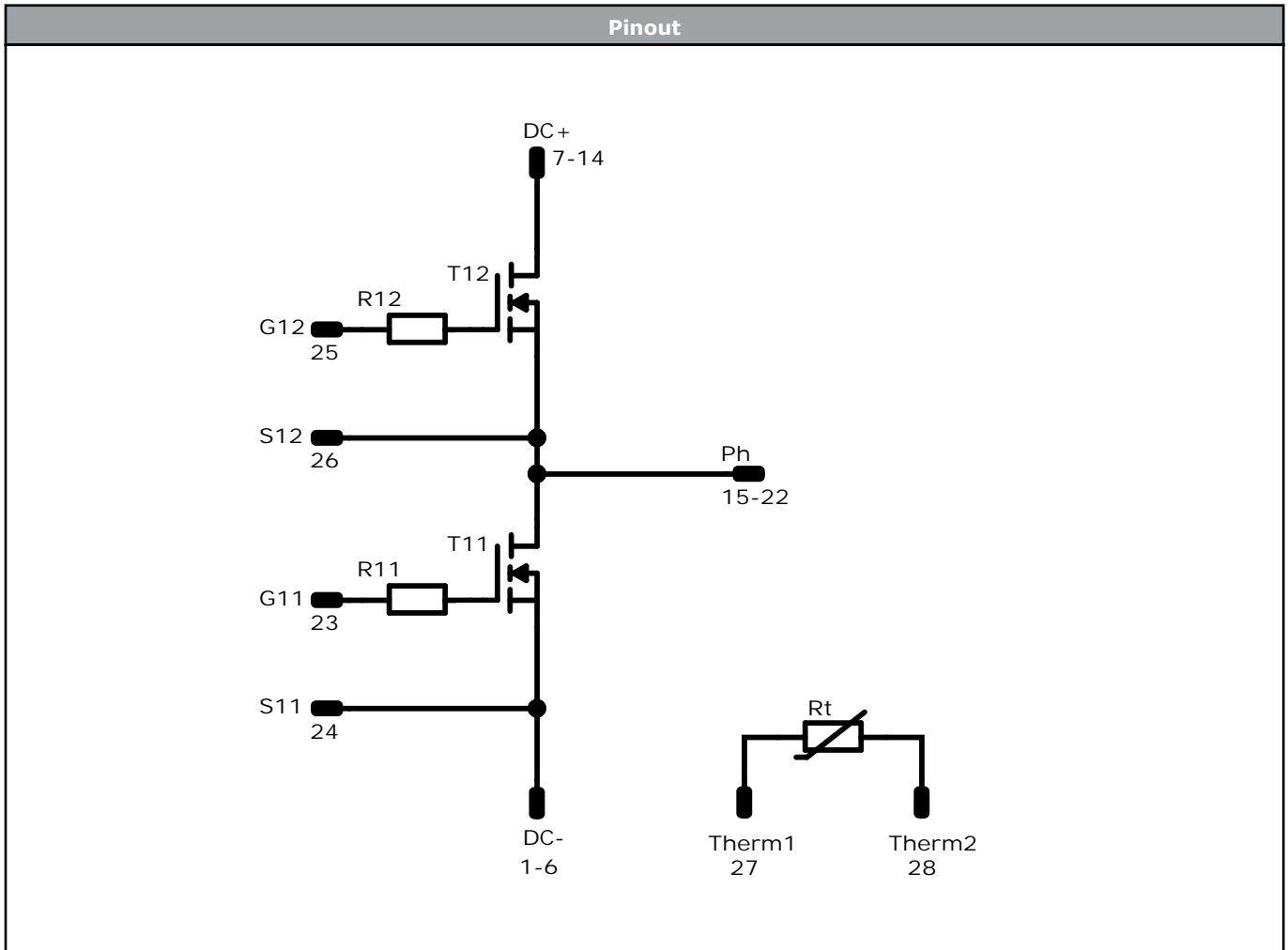
center of press-fit pin head
pin head type "T" PHS plated through-hole Ø1mm ±0.09 / -0.06
for further PHS design rules refer to the latest handling instruction

SSSS 4x11
6x6 4x15

Tolerance of pinpositions: ±0.1mm at the end of pins
Dimension of coordinate axis is only offset without tolerance



Vincotech



Identification					
ID	Component	Voltage	Current	Function	Comment
R11, R12	Resistor			Resistor	
T11, T12	MOSFET	2300 V	5 mΩ	Inverter Switch	
Rt	Thermistor			Thermistor	



Vincotech

10-EY232PB005ME01-PN99F08T
target datasheet

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 $T_{j,op}=175^{\circ}C$ and up to 4000VAC/1min isolation voltage. For more information see vincotech.com website.



Document No.:	Date:	Modification:	Pages
10-EY232PB005ME01-PN99F08T-T1-14	31 Jan. 2025	Initial Release	

Product status definition		
Datasheet Status	Product Status	Definition
Target	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice. The data contained is exclusively intended for technically trained staff.

DISCLAIMER

The information, specifications, procedures, methods and recommendations herein (together "information") are presented by Vincotech to reader in good faith, are believed to be accurate and reliable, but may well be incomplete and/or not applicable to all conditions or situations that may exist or occur. Vincotech reserves the right to make any changes without further notice to any products to improve reliability, function or design. No representation, guarantee or warranty is made to reader as to the accuracy, reliability or completeness of said information or that the application or use of any of the same will avoid hazards, accidents, losses, damages or injury of any kind to persons or property or that the same will not infringe third parties rights or give desired results. It is reader's sole responsibility to test and determine the suitability of the information and the product for reader's intended use.

LIFE SUPPORT POLICY

Vincotech products are not authorised for use as critical components in life support devices or systems without the express written approval of Vincotech.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in labelling can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.