



Vincotech

30-EP232PB004ME01-PR09F07T

target datasheet

flowDUAL E3BP SiC

2300 V / 4 mΩ

Topology features

- Kelvin Emitter for improved switching performance
- 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: Al₂O₃
- Cu baseplate
- Convex shaped baseplate for superior thermal contact
- CTI600 housing material
- Baseplate with rough surface
- Press-fit pin
- Reliable cold welding connection
- Thermo-mechanical push-and-pull force relief

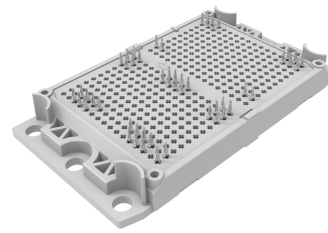
Target applications

- General
- Power Supply
- Charging Stations
- Energy Storage Systems
- Solar Inverters
- UPS

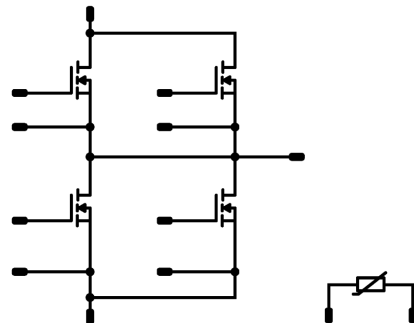
Types

- 30-EP232PB004ME01-PR09F07T

flow E3BP 12 mm housing



Schematic





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Maximum Ratings

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

Parameter	Symbol	Conditions	Value	Unit
Half-Bridge Switch				
Drain-source voltage	V_{DS}		2300	V
Drain current (DC current)	I_D	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	646	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	1328	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	572	W
Gate-source voltage	V_{GSS}		-4 / 15	V
		dynamic	-8 / 19	
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 $t_p = 2\text{ s}$	6800	V
Creepage distance			TBD	mm
Clearance			TBD	mm
Comparative Tracking Index	CTI		≥ 600	



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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	

Half-Bridge Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		15		552	25		3,75	4,88	mΩ
Gate-source threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$			0,152	25	1,8	2,5	3,6	V
Gate to Source Leakage Current	I_{GSS}		15	0		25		80		nA
Zero Gate Voltage Drain Current	I_{DSS}		0	2300		25		8		μA
Internal gate resistance	r_g							1,25		Ω
Gate charge	Q_g		-4/15	1500	552	25		1176		nC
Short-circuit input capacitance	C_{iss}	$f = 100 \text{ kHz}$	0	1500	0	25		48000		pF
Short-circuit output capacitance	C_{oss}							816		
Reverse transfer capacitance	C_{rss}							80		
Diode forward voltage	V_{SD}		0		280	25		5,5		V

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4 \text{ W/mK}$ (PSX)						0,17		K/W
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Thermistor

Static

Rated resistance	R					25		5		kΩ
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 493 \text{ Ω}$				100	-5		5	%
Power dissipation	P							245		mW
Power dissipation constant	d					25		1,4		mW/K
B-value	$B_{(25/50)}$	Tol. $\pm 2 \%$						3375		K
B-value	$B_{(25/100)}$	Tol. $\pm 2 \%$						3437		K
Vincotech Thermistor Reference									K	



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Ordering Code	
Version	Ordering Code
Without thermal paste	30-EP232PB004ME01-PR09F07T
With thermal paste (5,2 W/mK, PTM6000HV)	30-EP232PB004ME01-PR09F07T-/7/

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

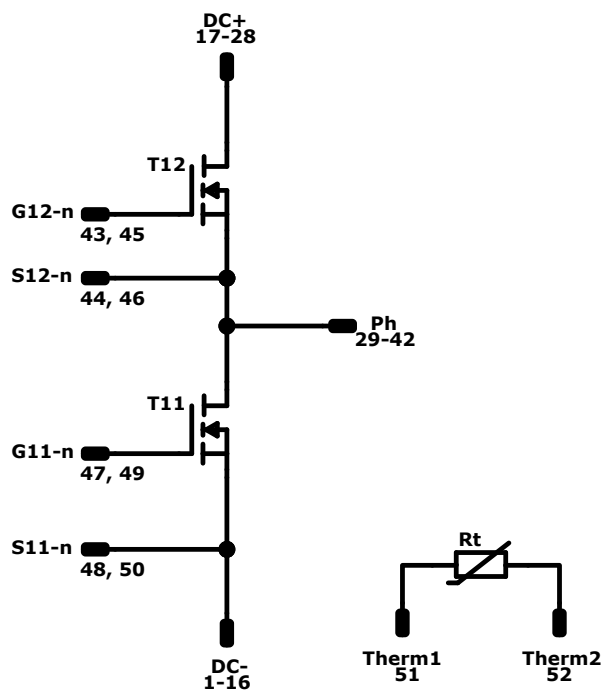
Outline								
Pin table [mm]								
Pin	X	Y	Function	27	68,96	48	DC+	
1	28,8	0	DC-	28	72,16	48	DC+	
2	32	0	DC-	29	0	6,4	Ph	
3	28,8	3,2	DC-	30	3,2	6,4	Ph	
4	32	3,2	DC-	31	0	9,6	Ph	
5	28,8	19,2	DC-	32	3,2	9,6	Ph	
6	32	19,2	DC-	33	0	12,8	Ph	
7	28,8	22,4	DC-	34	3,2	12,8	Ph	
8	32	22,4	DC-	35	3,2	16	Ph	
9	28,8	25,6	DC-	36	3,2	32	Ph	
10	32	25,6	DC-	37	0	35,2	Ph	
11	28,8	28,8	DC-	38	3,2	35,2	Ph	
12	32	28,8	DC-	39	0	38,4	Ph	
13	28,8	44,8	DC-	40	3,2	38,4	Ph	
14	32	44,8	DC-	41	0	41,6	Ph	
15	28,8	48	DC-	42	3,2	41,6	Ph	
16	32	48	DC-	43	43,36	44,8	G12-1	
17	68,96	0	DC+	44	43,36	48	S12-1	
18	72,16	0	DC+	45	43,36	3,2	G12-2	
19	68,96	3,2	DC+	46	43,36	0	S12-2	
20	72,16	3,2	DC+	47	25,6	44,8	G11-1	
21	68,96	6,4	DC+	48	25,6	48	S11-1	
22	72,16	6,4	DC+	49	25,6	3,2	G11-2	
23	68,96	41,6	DC+	50	25,6	0	S11-2	
24	72,16	41,6	DC+	51	0	0	Therm1	
25	68,96	44,8	DC+	52	3,2	0	Therm2	
26	72,16	44,8	DC+					



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Pinout



n=1-2 See exact Pin numbers and Pin functions on Outline

Identification

ID	Component	Voltage	Current	Function	Comment
T11, T12	MOSFET	2300 V	3,75 mΩ	Half-Bridge Switch	Parallel devices with separate control. Values apply to complete device.
Rt	Thermistor			Thermistor	



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Packaging instruction				
Standard packaging quantity (SPQ) 24	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for <i>flow</i> E3BP packages see vincotech.com website.

Package data
Package data for <i>flow</i> E3BP packages see vincotech.com website.

Vincotech thermistor reference
See Vincotech thermistor reference table at vincotech.com website.

UL recognition and file number
Certification pending. For more information see vincotech.com website.

Document No.:	Date:	Modification:	Pages
30-EP232PB004ME01-PR09F07T-T1-14	8 Jan. 2025	For promotion	

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.

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