



Vincotech

30-EP12SAA001MS-PT59F77T

target datasheet

for virtual products created by Vincotech Product Creator, only for evaluation purposes,
no commitment for product development!

flowDUAL E3BP

1200 V / 1.4 mR

Topology features

- Common emitter point Half Bridge
- Temperature sensor

Component features

- High Blocking Voltage with low drain source on state resistance
- High speed SiC-MOSFET technology
- Resistant to Latch-up

Housing features

- Base isolation: Al_2O_3
- Cu baseplate
- Convex shaped baseplate for superior thermal contact
- CTI600 housing material
- Baseplate with rough surface
- Thermo-mechanical push-and-pull force relief
- Press-fit pin
- Reliable cold welding connection

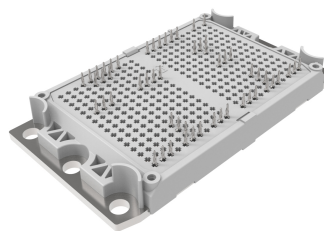
Target applications

- Solid-State Circuit Breakers
- Embedded Drives
- General Purpose Drives
- Industrial Drives

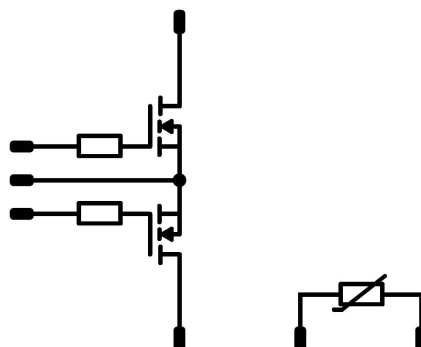
Types

- 30-EP12SAA001MS-PT59F77T

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
AC Switch				
Drain-source voltage	V_{DS}		1200	V
Drain current	I_D	$T_j = T_{jmax}$	852	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	3408	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	773	W
Gate-source voltage	V_{GS}	static	-5 / 18	V
		dynamic	-10 / 22	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
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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			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	

AC Switch

Static

Drain-source on-state resistance	$r_{DS(on)}$		18		852	25		1,42	2,08	mΩ
Diode forward voltage	V_{SD}		0		426	25		4,1		V
Gate-source threshold voltage	$V_{GS(th)}$		0		0,09	25	1,7	2,25	2,75	V
Gate to Source Leakage Current	I_{GSS}		22	0		25			1200	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	1200	0	25			120	μA
Internal gate resistance	r_g							0,25		Ω
Gate charge	Q_g			0	852	25		2256		nC
Short-circuit input capacitance	C_{iss}	$f = 500 \text{ kHz}$	0	800	0	25		56160		pF
Short-circuit output capacitance	C_{oss}							2820		
Reverse transfer capacitance	C_{rss}							96		

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 5,2 \text{ W/mK}$ (PTM)						0,12		K/W
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Thermistor

Static

Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 1484 \text{ Ω}$				100	-5		5	%
Power dissipation	P							130		mW
Power dissipation constant						25		1,5		mW/K
B-value	$B_{(25/50)}$					25		3962		K
B-value	$B_{(25/100)}$					25		4000		K
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Pin table [mm]			
Pin	X	Y	Function
1	TBD	TBD	TBD

Outline

The technical drawing illustrates the pin head assembly from two perspectives:

- Top View:** Shows a rectangular array of pins. The overall dimensions are labeled as 80 ± 0.2 mm in width and 60 ± 0.2 mm in height. A central arrow points to the middle of the array.
- Side View:** Shows the profile of the pin heads. The total height of the assembly is indicated as 10 ± 0.2 mm. A dimension line across the top indicates the distance between the centers of adjacent pins.

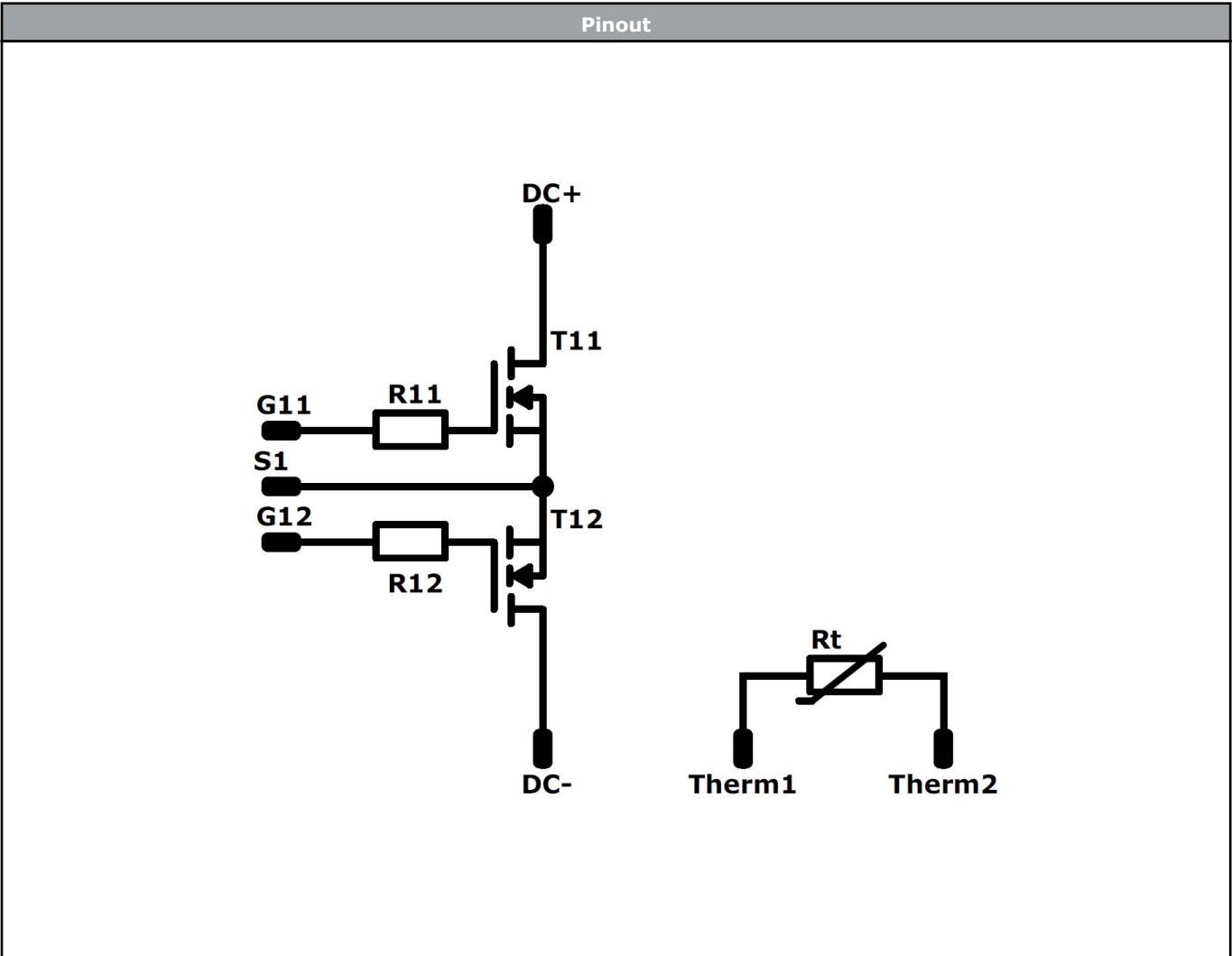
Additional notes include:

- "center of green-tilt pin head"
- "pin head type 'P' (S) placed through-hole Ø1 mm ± 0.07 / 0.06"
- "for further PCB design rules refer to the latest handling instruction."

A note at the bottom right states: "Tolerance of proportions; tolerances of the end of pin. Dimension of coordinate axis is only effort without tolerance."



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Identification					
ID	Component	Voltage	Current	Function	Comment
T11, T12	MOSFET	1200 V	426 A	AC Switch	
R11, R12	Resistor			Resistor (Gate)	
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				
Packaging 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				
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
30-EP12SAA001MS-PT59F77T-T0-14	30 Sep. 2025	Preliminary 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.

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