



Vincotech

10-EY122PA200M7-MA59F78T

target datasheet

flowDUAL E2

1200 V / 200 A

Topology features

- Common emitter point Half Bridge
- Temperature sensor

Component features

- Easy paralleling
- Low turn-off losses
- Low collector emitter saturation voltage
- Positive temperature coefficient
- Short tail current
- Switching optimized for EMC

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

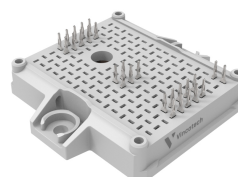
Target applications

- Embedded Drives
- General Purpose Drives
- Industrial Drives

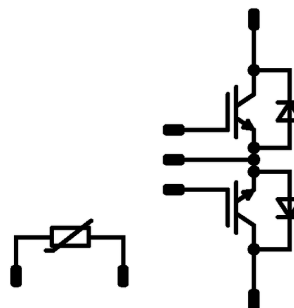
Types

- 10-EY122PA200M7-MA59F78T

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
AC Switch				
Collector-emitter voltage	V_{CES}		1200	V
Collector current (DC current) ⁽²⁾	I_C	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	144	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	230	W
Gate-emitter voltage	V_{GES}		±20	V
Short circuit ratings	t_{SC}	$V_{GE} = 15\text{ V}$, $V_{CC} = 800\text{ V}$ $T_j = 150\text{ °C}$	9,5	µs
Maximum junction temperature	T_{jmax}		175	°C

⁽¹⁾Calculation based on chip supplier datasheet at $T_j=175\text{°C}$

AC Diode

Peak repetitive reverse voltage	V_{RRM}		1200	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	112	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	400	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	176	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			>12,7	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

Gate-emitter threshold voltage	$V_{GE(th)}$			10	0,02	25	5,4	6	6,6	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,55 1,75 1,8	1,85	V
Collector-emitter cut-off current	I_{CES}		0	1200		25			100	μA
Gate-emitter leakage current	I_{GES}		20	0		25			500	nA
Internal gate resistance	r_g							2		Ω
Input capacitance	C_{ies}	0	10		25			37000		pF
Output capacitance	C_{oes}							1100		pF
Reverse transfer capacitance	C_{res}							420		pF
Gate charge	Q_g	$V_{CC} = 600$ V	0/15		200	25		1200		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,41		K/W
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AC Diode

Static

Forward voltage	V_F				200	25 125 150		1,65 1,7 1,7	2,1	V
Reverse leakage current	I_R	$V_r = 1200$ V				25			40	μA

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	$\lambda_{paste} = 3,4$ W/mK (PSX)						0,54		K/W
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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	

Thermistor

Static

Rated resistance	R					25		5		kΩ
Deviation of R100	$\Delta_{R/R}$	$R_{100} = 499 \Omega$				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	



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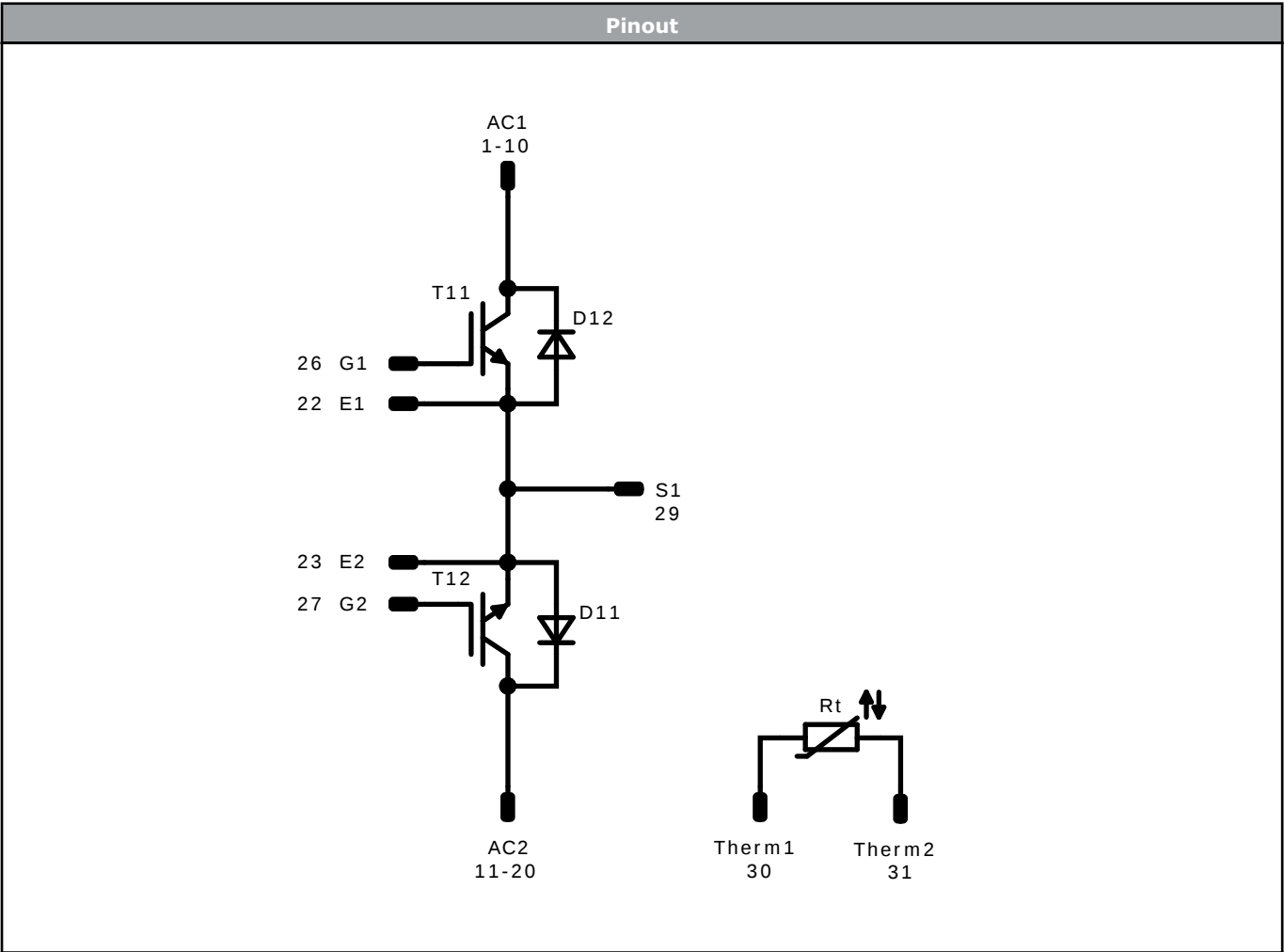
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Ordering Code	
Version	Ordering Code
Without thermal paste	10-EY122PA200M7-MA59F78T
With thermal paste (5,2 W/mK, PTM6000HV)	10-EY122PA200M7-MA59F78T-/7/

Marking						
	Text	Name		Date code	UL & VIN	Lot
		NN-NNNNNNNNNNNNNNNN- TTTTUV		WWYY	UL VIN	LLLL
	Datamatrix	Type&Ver	Lot number	Serial	Date code	Serial
		TTTTTUV	LLLLL	SSSS	WWYY	SSSS

Outline																																																																																																																																			
Pin table [mm] <table><thead><tr><th>Pin</th><th>X</th><th>Y</th><th>Function</th></tr></thead><tbody><tr><td>1</td><td>0</td><td>48</td><td>AC1</td></tr><tr><td>2</td><td>0</td><td>44,8</td><td>AC1</td></tr><tr><td>3</td><td>3,2</td><td>48</td><td>AC1</td></tr><tr><td>4</td><td>3,2</td><td>44,8</td><td>AC1</td></tr><tr><td>5</td><td>6,4</td><td>48</td><td>AC1</td></tr><tr><td>6</td><td>6,4</td><td>44,8</td><td>AC1</td></tr><tr><td>7</td><td>9,6</td><td>48</td><td>AC1</td></tr><tr><td>8</td><td>9,6</td><td>44,8</td><td>AC1</td></tr><tr><td>9</td><td>12,8</td><td>48</td><td>AC1</td></tr><tr><td>10</td><td>12,8</td><td>44,8</td><td>AC1</td></tr><tr><td>11</td><td>0</td><td>0</td><td>AC2</td></tr><tr><td>12</td><td>0</td><td>3,2</td><td>AC2</td></tr><tr><td>13</td><td>3,2</td><td>0</td><td>AC2</td></tr><tr><td>14</td><td>3,2</td><td>3,2</td><td>AC2</td></tr><tr><td>15</td><td>6,4</td><td>0</td><td>AC2</td></tr><tr><td>16</td><td>6,4</td><td>3,2</td><td>AC2</td></tr><tr><td>17</td><td>9,6</td><td>0</td><td>AC2</td></tr><tr><td>18</td><td>9,6</td><td>3,2</td><td>AC2</td></tr><tr><td>19</td><td>12,8</td><td>0</td><td>AC2</td></tr><tr><td>20</td><td>12,8</td><td>3,2</td><td>AC2</td></tr><tr><td>21</td><td colspan="3">not assembled</td></tr><tr><td>22</td><td>0</td><td>22,4</td><td>E1</td></tr><tr><td>23</td><td>0</td><td>19,2</td><td>E2</td></tr><tr><td>24</td><td colspan="3">not assembled</td></tr><tr><td>25</td><td colspan="3">not assembled</td></tr><tr><td>26</td><td>3,2</td><td>22,4</td><td>G1</td></tr><tr><td>27</td><td>3,2</td><td>19,2</td><td>G2</td></tr><tr><td>28</td><td colspan="3">not assembled</td></tr><tr><td>29</td><td>6,4</td><td>19,2</td><td>S1</td></tr><tr><td>30</td><td>22,4</td><td>0</td><td>Therm1</td></tr><tr><td>31</td><td>22,4</td><td>3,2</td><td>Therm2</td></tr></tbody></table>				Pin	X	Y	Function	1	0	48	AC1	2	0	44,8	AC1	3	3,2	48	AC1	4	3,2	44,8	AC1	5	6,4	48	AC1	6	6,4	44,8	AC1	7	9,6	48	AC1	8	9,6	44,8	AC1	9	12,8	48	AC1	10	12,8	44,8	AC1	11	0	0	AC2	12	0	3,2	AC2	13	3,2	0	AC2	14	3,2	3,2	AC2	15	6,4	0	AC2	16	6,4	3,2	AC2	17	9,6	0	AC2	18	9,6	3,2	AC2	19	12,8	0	AC2	20	12,8	3,2	AC2	21	not assembled			22	0	22,4	E1	23	0	19,2	E2	24	not assembled			25	not assembled			26	3,2	22,4	G1	27	3,2	19,2	G2	28	not assembled			29	6,4	19,2	S1	30	22,4	0	Therm1	31	22,4	3,2	Therm2
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Identification					
ID	Component	Voltage	Current	Function	Comment
T11, T12	IGBT	1200 V	200 A	AC Switch	
D12, D11	FWD	1200 V	200 A	AC 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 $T_{j,op}=175^{\circ}\text{C}$ and up to 3500VAC/1min isolation voltage. For more information see vincotech.com website.				

Document No.:	Date:	Modification:	Pages
10-EY122PA200M7-MA59F78T-T1-14	17 Sep. 2026	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.

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