Vincotech

B0-SP076PA200M701-LR44F73Y

target datasheet

***flow*PACK S3** **650 V / 200 A**

Features

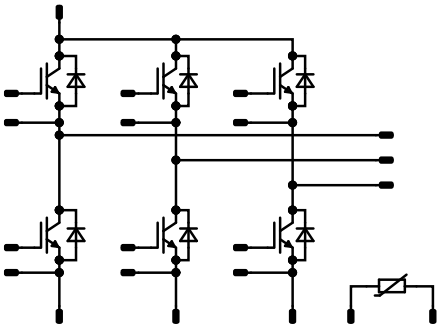
- Embedded Drives
- Industrial Drives

flow S3 12 mm housing

Target applications

- IGBT M7 with low VCEsat and improved EMC behavior
- Integrated thermal sensor
- Low inductive design

Schematic



Types

- B0-SP076PA200M701-LR44F73Y

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Value	Unit
Inverter Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ T_s = 80 °C	200	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 °C	227	W
Gate-emitter voltage	V_{GES}		±20	V
Maximum junction temperature	T_{jmax}		175	°C
Inverter Diode				
Peak repetitive reverse voltage	V_{RRM}		650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ T_s = 80 °C	150	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ T_s = 80 °C	172	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 s	6000	V
Isolation voltage	V_{isol}	AC Voltage t_p = 1 min	2500	V
Creepage distance			9,37	mm
Clearance			7,87	mm
Comparative Tracking Index	CTI		≥ 600	

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	
Inverter 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		1,3 1,35 1,35	1,6	V
Collector-emitter cut-off current	I_{CES}		0	650		25			50	µA
Gate-emitter leakage current	I_{GES}		20	0		25			500	nA
Internal gate resistance	r_g							3		Ω
Input capacitance	C_{ies}		0	10		25		24		nF
Output capacitance	C_{oes}							1		nF
Reverse transfer capacitance	C_{res}							0,47		nF
Gate charge	Q_g	V_{CC} = 300 V	15		200	25		830		nC
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3 W/mK (TCP)						0,42		K/W
Inverter Diode										
Static										
Forward voltage	V_F				150	25 125 150		1,45 1,5 1,5	1,85	V
Reverse leakage current	I_R	V_r = 650 V				25			50	µA
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3 W/mK (TCP)						0,55		K/W

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		22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P							5		mW
Power dissipation constant	d					25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %						3962		K
B-value	$B_{(25/100)}$	Tol. ±1 %						4000		K
Vincotech Thermistor Reference									I	

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Ordering Code

Version	Ordering Code
With thermal paste	B0-SP076PA200M701-LR44F73Y-/6/

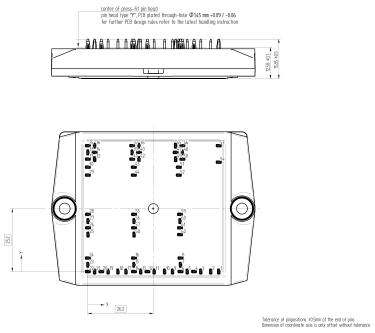
Marking

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

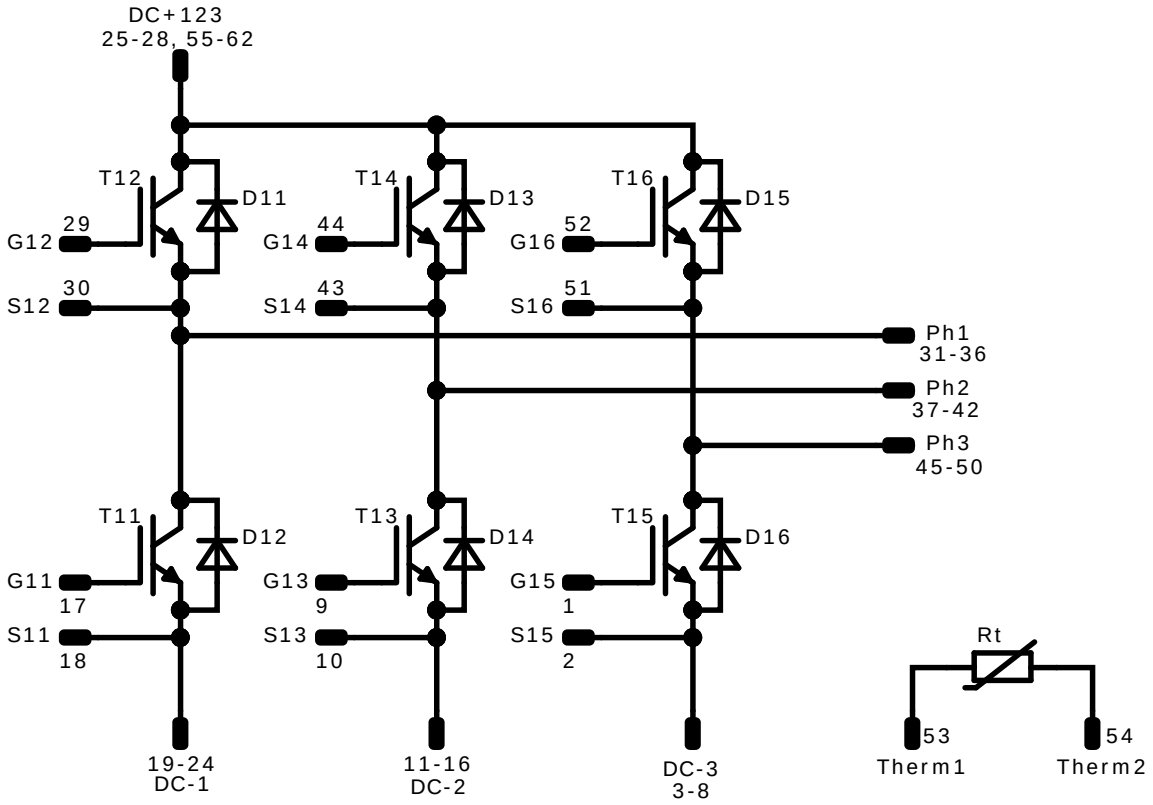
Outline

Pin table [mm]

Pin	X	Y	Function	32	2,7	45	Ph1
1	52,4	0	G15	33	0	47,7	Ph1
2	49,2	0	S15	34	2,7	47,7	Ph1
3	45,2	0	DC-3	35	0	50,4	Ph1
4	42,5	0	DC-3	36	2,7	50,4	Ph1
5	39,8	0	DC-3	37	17,75	50,4	Ph2
6	37,1	0	DC-3	38	20,45	50,4	Ph2
7	37,1	2,7	DC-3	39	17,75	47,7	Ph2
8	37,1	5,4	DC-3	40	20,45	47,7	Ph2
9	33,9	0	G13	41	17,75	45	Ph2
10	30,7	0	S13	42	20,45	45	Ph2
11	26,55	0	DC-2	43	18,4	41,8	S14
12	23,85	0	DC-2	44	18,4	38,6	G14
13	21,15	0	DC-2	45	35,15	50,4	Ph3
14	18,45	0	DC-2	46	37,85	50,4	Ph3
15	18,45	2,7	DC-2	47	35,15	47,7	Ph3
16	18,45	5,4	DC-2	48	37,85	47,7	Ph3
17	15,25	0	G11	49	35,15	45	Ph3
18	12,05	0	S11	50	37,85	45	Ph3
19	8,1	0	DC-1	51	36,4	41,8	S16
20	5,4	0	DC-1	52	36,4	38,6	G16
21	2,7	0	DC-1	53	52,4	50,4	Therm1
22	0	0	DC-1	54	52,4	43,8	Therm2
23	0	2,7	DC-1	55	18,5	22,9	DC+
24	0	5,4	DC-1	56	18,5	20,2	DC+
25	0,05	14,8	DC+	57	18,5	17,5	DC+
26	0,05	17,5	DC+	58	18,5	14,8	DC+
27	0,05	20,2	DC+	59	36,9	22,9	DC+
28	0,05	22,9	DC+	60	36,9	20,2	DC+
29	0	38,6	G12	61	36,9	17,5	DC+
30	0	41,8	S12	62	36,9	14,8	DC+
31	0	45	Ph1				



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T11, T12, T13, T14, T15, T16	IGBT	650 V	200 A	Inverter Switch	
D11, D12, D13, D14, D15, D16	FWD	650 V	150 A	Inverter Diode	
Rt	Thermistor			Thermistor	

Packaging instruction				
Standard packaging quantity (SPQ) 45	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* S3 packages see vincotech.com website.

Package data
Package data for *flow* S3 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
B0-SP076PA200M701-LR44F73Y-T1-14	2 Apr. 2020	First Release	