Vincotech

30-P2126PA150NB-L280F69Y

target datasheet

flow PACK 2 — **1200 V / 150 A**

Features

- Mitsubishi Generation 6.1 (1200V) technology for low saturation losses and improved EMC behavior
- Compact and low inductive design
- Integrated temperature sensor

flow 2 17mm housing

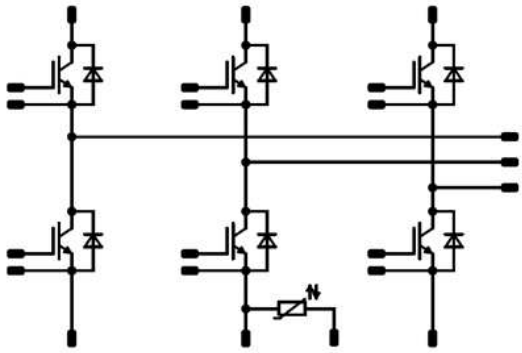
Target applications

- Industrial drives

Types

- 30-P2126PA150NB-L280F69Y

Schematic



Maximum Ratings

T_j=25°C, unless otherwise specified

Parameter	Symbol	Condition		Value	Unit
Inverter Switch					
Collector-emitter voltage	V_{CES}			1200	V
Collector current	I_C	T_j=$T_j$max	T_S=80°C	158	A
Repetitive peak collector current	I_{CRM}	t_p limited by $T_j$max		300	A
Total power dissipation	P_{tot}	T_j=$T_j$max	T_S=80°C	317	W
Gate-emitter voltage	V_{GES}			±20	V
Short circuit ratings	t_{SC} V_{CC}	$T_j \leq$ 150°C V_{GE} = 15V		10 850	µs V
Maximum Junction Temperature	T_{jmax}			175	°C

Parameter	Symbol	Conditions		Value	Unit
Inverter Diode					
Peak Repetitive Reverse Voltage	V_{RRM}			1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$	$T_h = 80°C$	119	A
Repetitive peak forward current	I_{FRM}			300	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	$T_h = 80°C$	202	W
Maximum Junction Temperature	T_{jmax}			175	°C

Module Properties

Parameter	Symbol	Conditions		Value	Unit
Thermal Properties					
Storage temperature	T_{stg}			-40...+125	°C
Operation Junction Temperature	T_{jop}			-40...+(T_{jmax} - 25)	°C
Isolation Properties					
Isolation voltage	V_{isol}	DC voltage	t_p=2s	4000	V
Creepage distance				min 12,7	mm
Clearance				min 12,7	mm
Comparative Tracking Index	CTI			>200	

Characteristic Values

Inverter Switch

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,015	25 125	5,4	6	6,6	V
Collector-emitter saturation voltage	V_{CEsat}		15		150	25 125 150		1,70 1,90 1,95	2,15	V
Collector-emitter cut-off current	I_{CES}		0	1200		25 125			520	µA
Gate-emitter leakage current	I_{GES}		20	0		25 125			1000	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	f=100KHz	0	10		25		-	15000	pF
Output capacitance	C_{oes}							-	3000	
Reverse transfer capacitance	C_{res}							-	260	
Gate charge	Q_g		15	600	150	25		315		nC
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	Phase-Change Material λ=3,4W/mK						0,3		K/W

Inverter Diode

Parameter	Symbol	Conditions					Value			Unit
				V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max	
Static										
Forward voltage	V_F				150	25 125 150		2,50 2,06 2,00	3,3	V
Reverse leakage current	I_r			1200		25 150			50 -	µA
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	Phase-Change Material λ=3,4W/mK						0,47		K/W

Thermistor

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V]	V_{CE} [V]	I_C [A]	T_j [°C]	Min	Typ	Max	
Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R100=1486 Ω				100	-12		+12	%
Power dissipation	P					25		200		mW
Power dissipation constant						25		2		mW/K
B-value	$B_{(25/50)}$	Tol. ±3%				25		3950		K
B-value	$B_{(25/100)}$	Tol. ±3%				25		3998		K
Vincotech NTC Reference									B	

Vincotech

Ordering Code & Marking

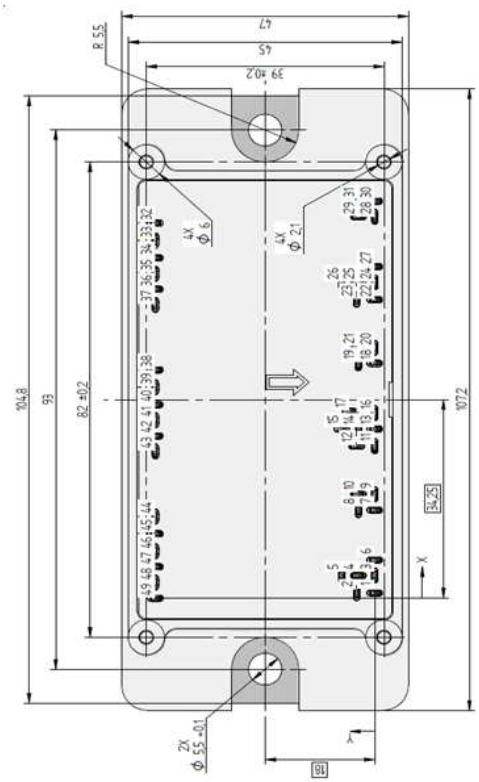
Version	Ordering Code	in DataMatrix as	in packaging barcode as
without thermal paste 17mm housing	30-P2126PA150NB-L280F69Y	L280F69Y	L280F69Y
with thermal paste 17mm housing	30-P2126PA150NB-L280F69Y-/3/	L280F69Y	L280F69Y-/3/

	Name	Date code	UL & Vinco	Lot	Serial
Text	NN-NNNNNNNNNNNNN-NNNNNNNN	WWYY	UL Vinco	LLLLL	SSSS

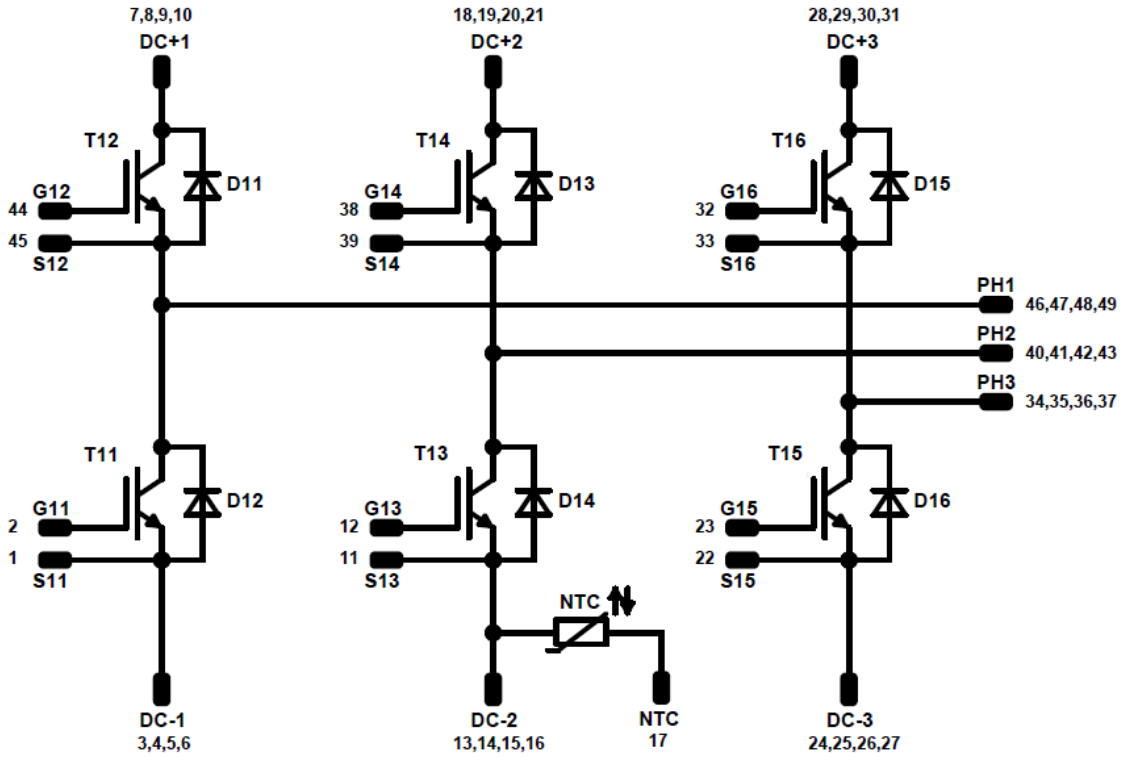
	Type&Ver	Lot number	Serial	Date code		
Datamatrix	TTTTTTTVV	LLLLL	SSSS	WWYY		

Outline

Pin table [mm]				Pin table [mm]			
Pin	X	Y	Function	Pin	X	Y	Function
1	0,9	0	S11	30	68,5	0	DC+3
2	0,9	3	G11	31	68,5	2,7	DC+3
3	3,9	0	DC-1	32	64,7	36	G16
4	3,9	2,7	DC-1	33	61,7	36	S16
5	3,9	5,4	DC-1	34	58,7	36	PH3
6	6,6	0	DC-1	35	56	36	PH3
7	15,2	0	DC+1	36	53,3	36	PH3
8	15,2	2,7	DC+1	37	50,6	36	PH3
9	17,9	0	DC+1	38	39,4	36	G14
10	17,9	2,7	DC+1	39	36,4	36	S14
11	26,2	0	S13	40	33,4	36	PH2
12	26,2	3	G13	41	30,7	36	PH2
13	29,2	0	DC-2	42	28	36	PH2
14	29,2	2,7	DC-2	43	25,3	36	PH2
15	29,2	5,4	DC-2	44	14,1	36	G12
16	31,9	0	DC-2	45	11,1	36	S12
17	32,2	4,05	NTC	46	8,1	36	PH1
18	40,5	0	DC+2	47	5,4	36	PH1
19	40,5	2,7	DC+2	48	2,7	36	PH1
20	43,2	0	DC+2	49	0	36	Ph1
21	43,2	2,7	DC+2				
22	51,5	0	S15				
23	51,5	3	G15				
24	54,5	0	DC-3				
25	54,5	2,7	DC-3				
26	54,5	5,4	DC-3				
27	57,2	0	DC-3				
28	65,8	0	DC+3				
29	65,8	2,7	DC+3				



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T11,T12,T13 T14,T15,T16	IGBT	1200V	150A	Inverter Switch	2*CH0075C-1200S002
D11,D12,D13 D14,D15,D16	FWD	1200V	150A	Inverter Diode	CH0150R-1200S001
NTC	NTC	-	-	Thermistor	

Packaging instruction					
Standard packaging quantity (SPQ)	42	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* 2 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
30-P2126PA150NB-L280F69Y-T3-14	29 May. 2015		

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.