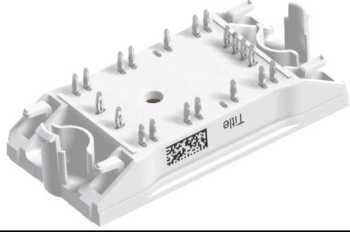
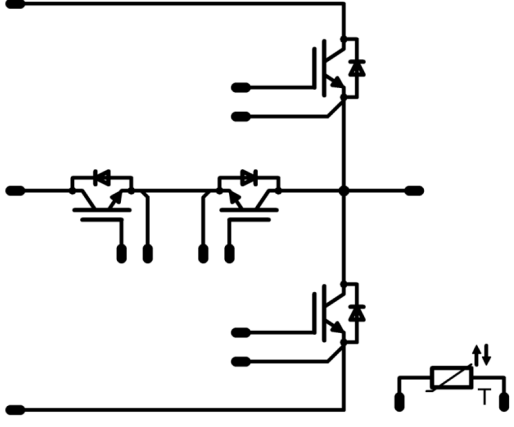




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<i>flow</i> MNPC 0	1200 V / 80 A
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> Mixed voltage component topology Neutral point clamped inverter Reactive power capability Low inductance layout 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">flow 0 12mm housing</div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Target applications</div> <ul style="list-style-type: none"> Solar inverter UPS 	<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Schematic</div> 
<div style="background-color: #eee; padding: 2px; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> 10-PZ12NMA080NS07-M260F78Y 	

Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
Half Bridge Switch				
Collector-emitter voltage	V_{CES}		1200	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	56	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	240	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	112	W
Gate-emitter voltage	V_{GES}		±20	V
Short circuit ratings	t_{SC}	$T_j \leq 150^\circ\text{C}$	10	µs
	V_{CC}	$V_{GE} = 15\text{V}$	600	V
Maximum Junction Temperature	T_{jmax}		175	°C



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Parameter	Symbol	Conditions	Value	Unit
Neutral Point Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	34	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	59	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Parameter	Symbol	Condition	Value	Unit
Neutral Point Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	67	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	225	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_s = 80^\circ\text{C}$	77	W
Gate-emitter voltage	V_{GES}		± 20	V
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$

Parameter	Symbol	Conditions	Value	Unit
Half Bridge Diode				
Peak Repetitive Reverse Voltage	V_{RRM}		1200	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	48	A
Repetitive peak forward current	I_{FRM}		100	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ $T_h = 80^\circ\text{C}$	79	W
Maximum Junction Temperature	T_{jmax}		175	$^\circ\text{C}$



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Module Properties

Parameter	Symbol	Conditions	Value	Unit
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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				8,95	mm
Comparative Tracking Index	CTI			>200	



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Characteristic Values

Half Bridge 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	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,0006	25 125	4,5	5,5	6,5	V
Collector-emitter saturation voltage	V_{CEsat}		15		80	25 125 150		2,02 2,17		V
Collector-emitter cut-off current	I_{CES}		0	1200		25 125			2000	μA
Gate-emitter leakage current	I_{GES}		20	0		25 125			400	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}							15000		pF
Output capacitance	C_{oes}	f=1 MHz	0	20		25		400		
Reverse transfer capacitance	C_{res}							280		
Gate charge	Q_g		15	600	80	25		626		nC

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤50μm $\lambda = 1$ W/mK						0,85		K/W
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Neutral Point Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			

Static

Forward voltage	V_F				75	25 125 150		2,15 2,36		V
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Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤50μm $\lambda = 1$ W/mK						1,6		K/W
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Neutral Point 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	$V_{GE(th)}$	$V_{GE}=V_{CE}$			0,0002	25 125	4,2	5	5,8	V
Collector-emitter saturation voltage	V_{CEsat}		15		75	25 125 150		1,05	1,45	V
Collector-emitter cut-off current	I_{CES}		0	650		25 125			40	μ A
Gate-emitter leakage current	I_{GES}		20	0		25 125			100	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	f=1MHz	0	25		25		11625		pF
Reverse transfer capacitance	C_{res}							30		

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness $\leq 50\mu$ m $\lambda = 1$ W/mK						1,24		K/W
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Half Bridge Diode

Parameter	Symbol	Conditions					Value			Unit
		V_r [V]	I_F [A]	T_j [°C]	Min	Typ	Max			

Static

Forward voltage	V_F				50	25 125 150	1,35	1,73 1,70 1,68	2,05	V
Reverse leakage current	I_r			1200		25 150			10 -	μ A

Thermal

Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness $\leq 50\mu$ m $\lambda = 1$ W/mK						1,21		K/W
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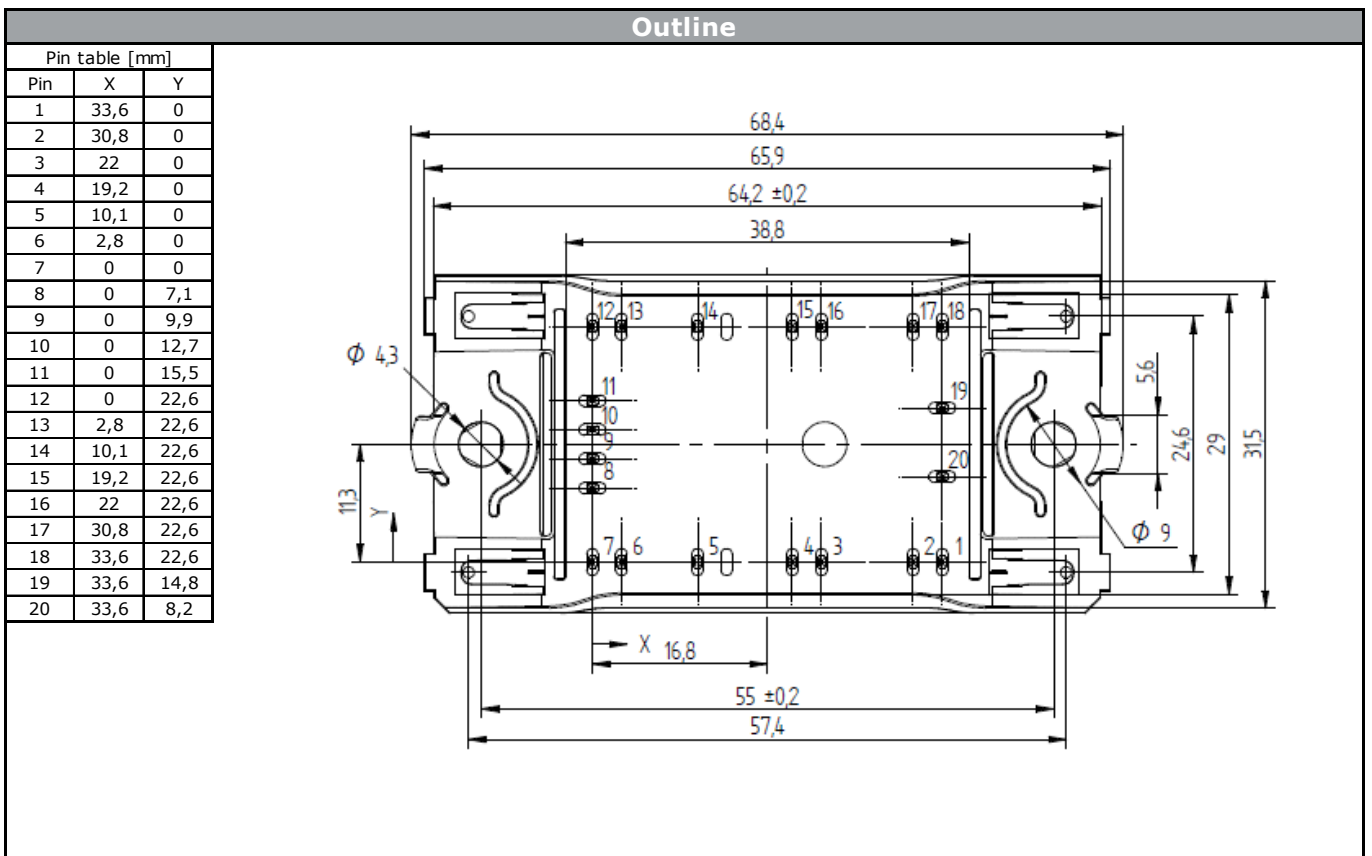
Thermistor

Parameter	Symbol	Conditions				Value			Unit
		V_{GE} [V]	V_{CE} [V]	I_C [A]	T_{ij} [°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	



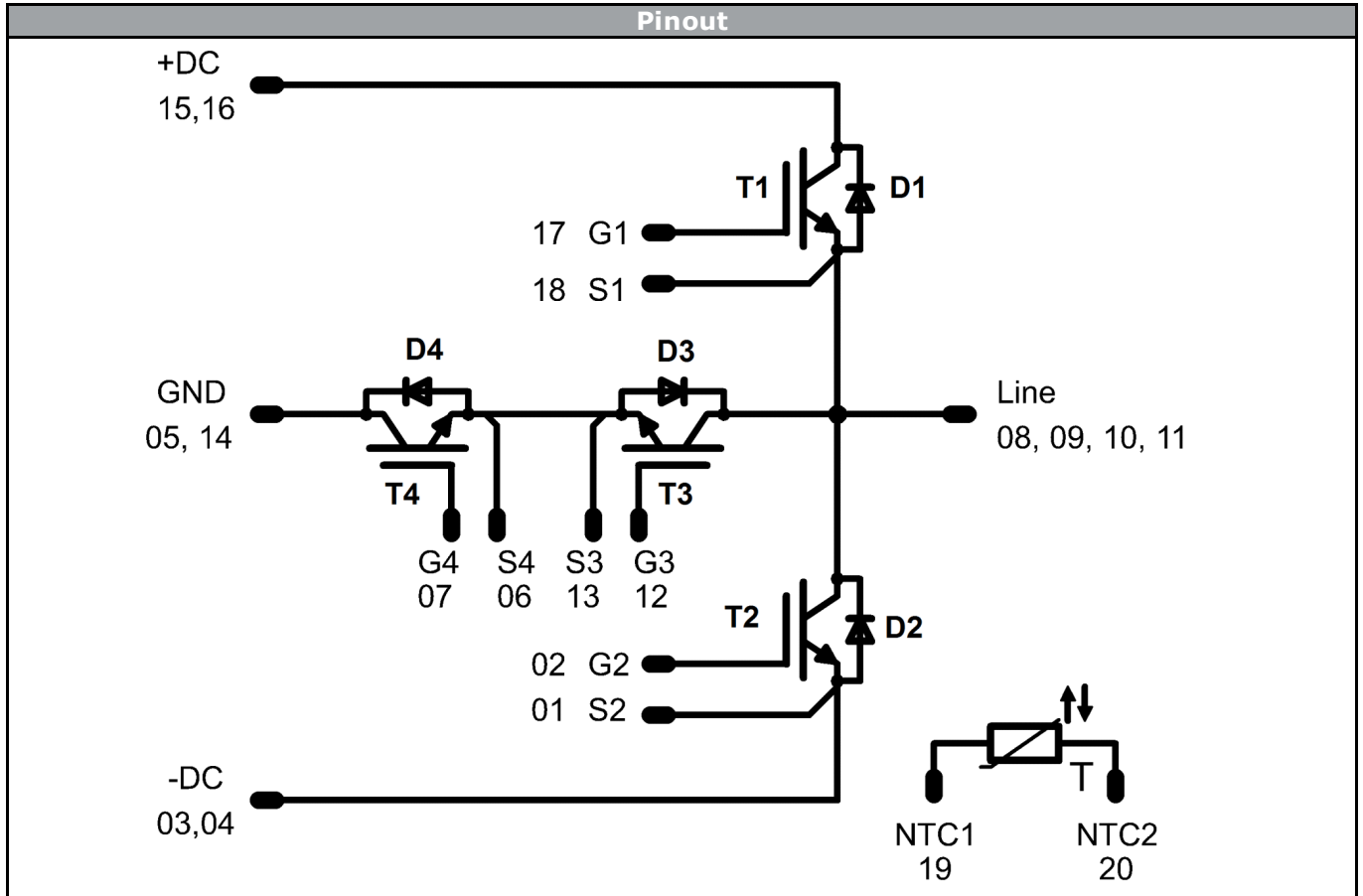
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Ordering Code & Marking							
Version	Ordering Code	in DataMatrix as		in packaging barcode as			
without thermal paste with Press-fit pins	10-PZ12NMA080NS07-M260F78Y	M260F78Y		M260F78Y			
NN-NNNNNNNNNNNNNNNN NNNNNNNN WWYY UL Vinco LLLLL SSSS		Text	Name	Date code	UL & Vinco	Lot	Serial
			NN-NNNNNNNNNNNNNNNN	WWYY	UL Vinco	LLLLL	SSSS
		Datamatrix	Type&Ver	Lot number	Serial	Date code	
			TTTTTTTV	LLLLL	SSSS	WWYY	





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Identification					
ID	Component	Voltage	Current	Function	Comment
T1,T2	IGBT	1200V	80A	Half Bridge Switch	
D1,D2	FWD	1200V	50A	Half Bridge Diode	
T3,T4	IGBT	650V	75A	Neutral Point Switch	
D3,D4	FWD	600V	75A	Neutral Point Diode	
T	NTC	-	-	Thermistor	



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Packaging instruction			
Standard packaging quantity (SPQ)	135	>SPQ	Standard
		<SPQ	Sample

Handling instruction
Handling instructions for <i>flow</i> 0 packages see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-PZ12NMA080NS07-M260F78Y-T1-14	2 Jul. 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.

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2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.