


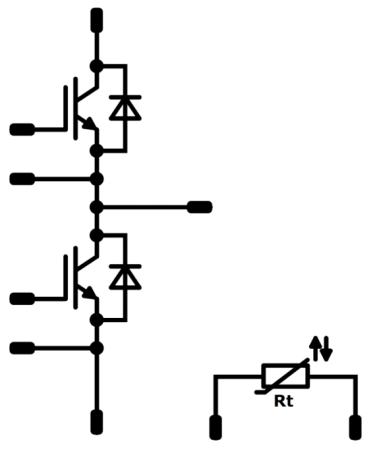
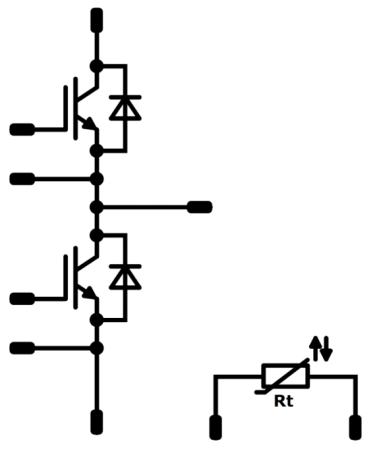
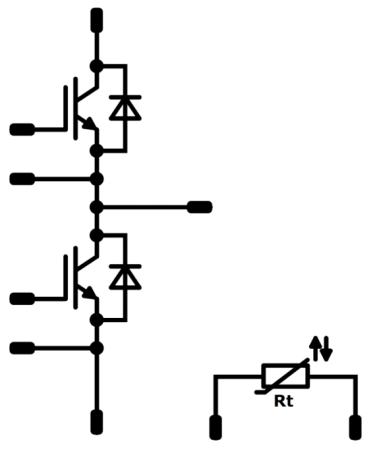




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<b>MiniSkiiP® DUAL 3</b>	<b>650 V / 300 A</b>				
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### Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
<b>Half Bridge Switch</b>				
Collector-emitter voltage	$V_{CES}$		650	V
Collector current	$I_C$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	237	A
Repetitive peak collector current	$I_{CRM}$	$t_p$ limited by $T_{jmax}$	900	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	380	W
Gate-emitter voltage	$V_{GES}$		$\pm 20$	V
Short circuit ratings	$t_{SC}$	$T_j \leq 150\text{ °C}$	6	$\mu s$
	$V_{CC}$	$V_{GE} = 15\text{ V}$	360	V
Maximum Junction Temperature	$T_{jmax}$		175	$^{\circ}C$



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## Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
<b>Half Bridge FWD</b>				
Peak repetitive reverse voltage	$V_{RRM}$		650	V
Continuous (direct) forward current	$I_F$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	274	A
Surge (non-repetitive) forward current	$I_{FSM}$	50 Hz, $t_p = 10\text{ ms}$ $T_j = 150\text{ °C}$	2200	A
Total power dissipation	$P_{tot}$	$T_j = T_{jmax}$ $T_s = 80\text{ °C}$	339	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 $t_p = 2\text{ s}$	4000	V
Creepage distance			min. 12,7	mm
Clearance			min. 12,7	mm
Comparative Tracking Index	CTI		> 200	



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## Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
		$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	

### Half Bridge Switch

#### Static

Parameter	Symbol	Conditions	$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	Unit
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$					25	5,1	5,8	6,4	V
Collector-emitter saturation voltage	$V_{CEsat}$		15		300		25 150		1,45 1,70	1,9	V
Collector-emitter cut-off current	$I_{CES}$		0	650			25			15,2	μA
Gate-emitter leakage current	$I_{GES}$		20	0			25			1200	nA
Internal gate resistance	$r_g$								1		Ω
Input capacitance	$C_{ies}$	f=1 MHz	0	25			25		18480		pF
Reverse transfer capacitance	$C_{res}$								548		

#### Thermal

Parameter	Symbol	Conditions	$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50 μm λ = 1 W/mK							0,25		K/W

### Half Bridge FWD

#### Static

Parameter	Symbol	Conditions	$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	Unit
Forward voltage	$V_F$					218	25 150		1,30 1,24	1,62	V
Reverse leakage current	$I_R$			650			25 150			240 68000	μA

#### Thermal

Parameter	Symbol	Conditions	$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	Unit
Thermal resistance junction to sink	$R_{th(j-s)}$	Thermal grease thickness ≤ 50 μm λ = 1 W/mK							0,28		K/W

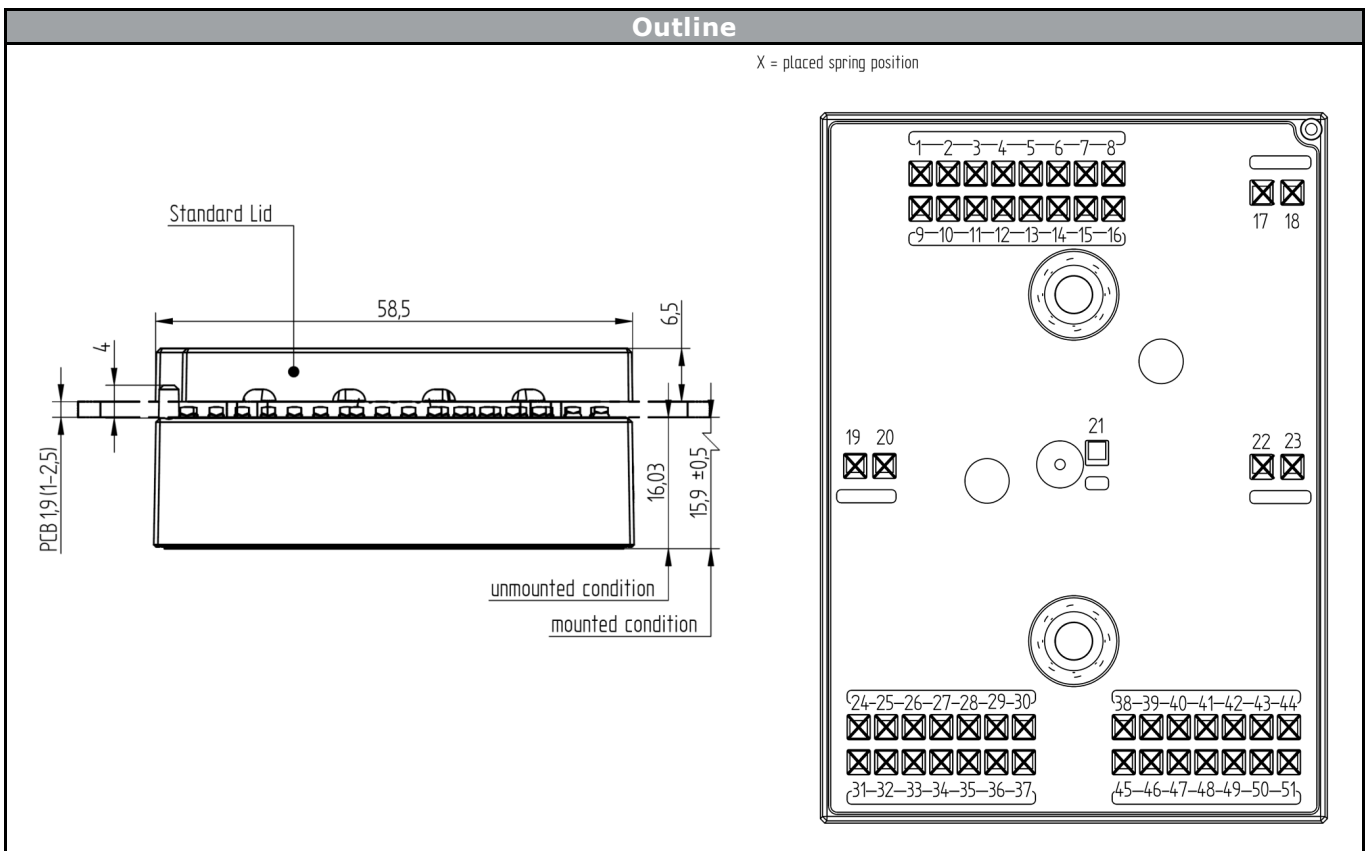
### Thermistor

Parameter	Symbol	Conditions	$V_{GS}$ [V]	$V_{GE}$ [V]	$V_{DS}$ [V]	$V_F$ [V]	$T_j$ [°C]	Min	Typ	Max	Unit
Rated resistance	$R$						25		5		kΩ
Deviation of $R_{100}$	$\Delta_{R/R}$	$R_{100} = 493 \Omega$					100	-5		+5	%
Power dissipation	$P$						25		245		mW
Power dissipation constant							25		1,4		mW/K
B-value	$B_{(25/50)}$	Tol. ±2%					25		3375		K
B-value	$B_{(25/100)}$	Tol. ±2%					25		3437		K
Vincotech NTC Reference										K	



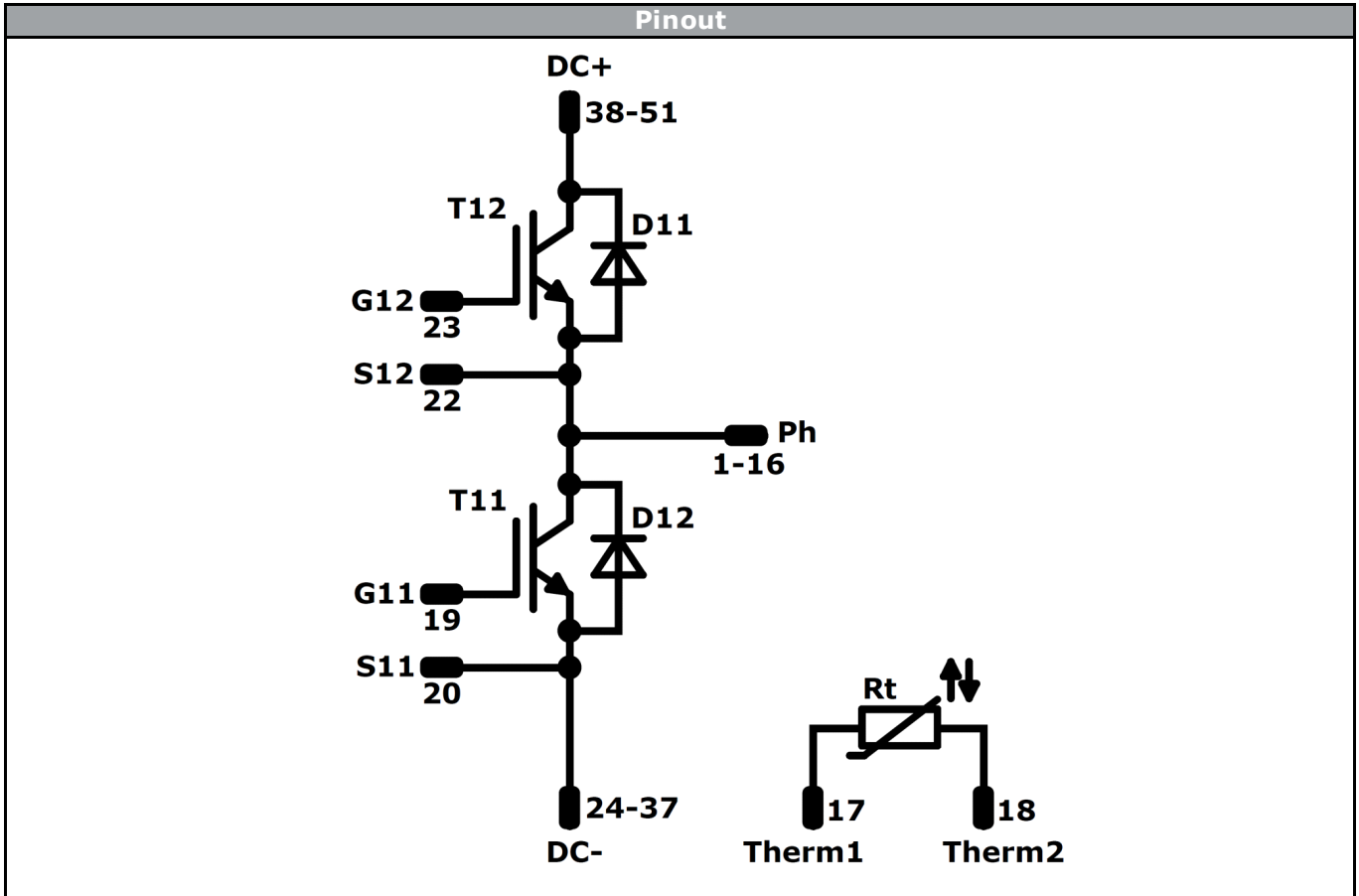
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Ordering Code & Marking							
<b>Version</b>			<b>Ordering Code</b>				
with std lid and without thermal paste (black V35990-K32-T-*-PM)			80-M3072PA300SC-K836F30-/0A/				
	<b>Text</b>	<b>Name</b>		<b>Type&amp;Ver</b>	<b>Date code</b>	<b>VIN&amp;Lot</b>	<b>Serial</b>
		NN-MNNNNNNNNNNNNNN		TTTTTTTVV	WWYY	Vin LLLLL	SSSS
	<b>Datamatrix</b>	<b>Type&amp;Ver</b>	<b>Lot number</b>	<b>Serial</b>	<b>Date code</b>		
		TTTTTTTVV	LLLLL	SSSS	WWYY		





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Identification					
ID	Component	Voltage	Current	Function	Comment
T11, T12	IGBT	650 V	300 A	Half Brdige Switch	
D11, D12	Diode	650 V	300 A	Half Brdige FWD	
Rt	Thermistor			Thermistor	



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Packaging instruction			
Standard packaging quantity (SPQ)	48	>SPQ	Standard
		<SPQ	Sample

Handling instruction
Handling instructions for MiniSkiP® 3 packages see vincotech.com website.

Package data
Package data for MiniSkiP® 3 Dual packages see vincotech.com website.

UL recognition and file number
This device is certified according to UL 1557 standard, UL file number E192116. For more information see vincotech.com website.



Document No.:	Date:	Modification:	Pages
80-M3072PA300SC-K836F30-T1-14	18 Apr. 2016		

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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.