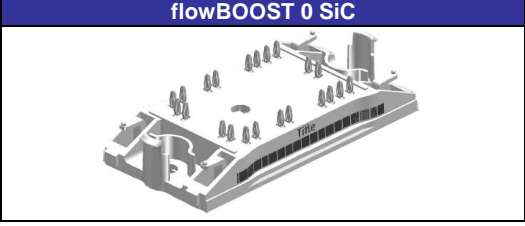
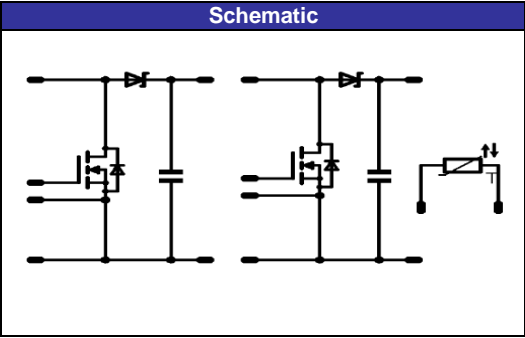


flowBOOST 0 SiC	1200V/ 40mΩ
<div style="background-color: #003366; color: white; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Features</div> <ul style="list-style-type: none"> <li>Rohm™ SiC-Power MOSFET's and Schottky Diodes</li> <li>Dual Boost Topology</li> <li>Ultra Low Inductance with Integrated DC-capacitors</li> <li>Extremely Fast Switching with No "Tail" Current</li> <li>Solderless Press-fit Mounting Technology</li> <li>Temperature sensor</li> </ul>	<div style="background-color: #003366; color: white; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">flowBOOST 0 SiC</div> 
<div style="background-color: #003366; color: white; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Target Applications</div> <ul style="list-style-type: none"> <li>Solar Inverter</li> <li>Power Supply</li> </ul>	<div style="background-color: #003366; color: white; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Schematic</div> 
<div style="background-color: #003366; color: white; padding: 2px; text-align: center; font-weight: bold; margin-bottom: 5px;">Types</div> <ul style="list-style-type: none"> <li>10-PZ12B2A040MR01-M330L68Y</li> </ul>	

### Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
<b>T1, T3 Boost MOSFET</b>				
Drain to source breakdown voltage	$V_{DS}$		1200	V
DC drain current	$I_D$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	30	A
Pulsed drain current	$I_{Dpulse}$	$t_p$ limited by $T_{jmax}$	160	A
Power dissipation	$P_{tot}$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	58	W
Gate-source peak voltage	$V_{GS}$		-6 / 22	V
Maximum Junction Temperature	$T_{jmax}$		150	$^{\circ}\text{C}$
<b>D2, D4 Boost Diode</b>				
Peak Repetitive Reverse Voltage	$V_{RRM}$		1200	V
DC forward current	$I_F$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	33	A
Repetitive peak forward current	$I_{FRM}$	$t_p$ limited by $T_{jmax}$	96	A
Power dissipation per Diode	$P_{tot}$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	80	W
Maximum Junction Temperature	$T_{jmax}$		175	$^{\circ}\text{C}$

## Maximum Ratings

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

Parameter	Symbol	Condition	Value	Unit
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### D1,D3 Protection diode

Peak Repetitive Reverse Voltage	$V_{RRM}$	$T_c=25^{\circ}\text{C}$	1600	V
DC forward current	$I_F$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	30	A
Surge forward current	$I_{FSM}$	$t_p=10\text{ms}$	370	A
Power dissipation per Diode	$P_{tot}$	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$	39	W
Maximum Junction Temperature	$T_{jmax}$		150	$^{\circ}\text{C}$

### C1, C2

Max.DC voltage	$V_{MAX}$		1000	V
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### Thermal Properties

Storage temperature	$T_{slg}$		-40...+125	$^{\circ}\text{C}$
Operation temperature under switching condition	$T_{op}$		-40...+( $T_{jmax} - 25$ )	$^{\circ}\text{C}$

### Insulation Properties

Insulation voltage	$V_{is}$	$t=2\text{s}$ DC voltage	4000	V
Comparative tracking index	CTI		>200	

**Characteristic Values**

Parameter	Symbol	Conditions					Value			Unit
		$V_{GS}[V]$ or $V_{GS}[V]$	$V_r[V]$ or $V_{CE}[V]$ or $V_{DS}[V]$	$I_c[A]$ or $I_F[A]$ or $I_D[A]$	$T_j$	Min	Typ	Max		
<b>T1, T3 Boost MOSFET</b>										
Static drain to source ON resistance	$R_{ds(on)}$		18		20	$T_j=25^\circ C$ $T_j=125^\circ C$		40 62,5		mΩ
Gate threshold voltage	$V_{(GS)th}$	VDS=VGS			0,0088	$T_j=25^\circ C$ $T_j=125^\circ C$	1,6		4	V
Gate to Source Leakage Current	$I_{gss}$		-6/22	0		$T_j=25^\circ C$ $T_j=125^\circ C$			200	nA
Zero Gate Voltage Drain Current	$I_{dss}$		0	1200		$T_j=25^\circ C$ $T_j=125^\circ C$			0,8	μA
Turn On Delay Time	$t_{d(ON)}$	Rgoff=tbd Ω Rgon=tbd Ω				$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd		ns
Rise Time	$t_r$					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd		
Turn off delay time	$t_{d(OFF)}$					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd		
Fall time	$t_f$					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd		
Turn-on energy loss per pulse	$E_{on}$					$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd		
Turn-off energy loss per pulse	$E_{off}$	$T_j=25^\circ C$ $T_j=125^\circ C$		tbd tbd						mWs
Total gate charge	$Q_g$							212		nC
Gate to source charge	$Q_{gs}$		18	400	20	$T_j=25^\circ C$		54		
Gate to drain charge	$Q_{gd}$							62		
Input capacitance	$C_{iss}$							3700		pF
Output capacitance	$C_{oss}$	f=100kHz	0	1000		$T_j=25^\circ C$		350		
Reverse transfer capacitance	$C_{rss}$							40		
Internal Gate Resistance	$R_G$	f=1MHz U <sub>AC</sub> =25mV						3,15		Ω
Thermal resistance chip to heatsink per chip	$R_{thJH}$	Preapplied Phase change material						1,20		K/W
<b>D2, D4 Boost Diode</b>										
Diode forward voltage	$V_F$				20	$T_j=25^\circ C$ $T_j=150^\circ C$		1,5 1,9		V
Reverse leakage current	$I_{RM}$				1200	$T_j=25^\circ C$ $T_j=175^\circ C$		20 240	400	A
Reverse recovery time	$t_{rr}$	Rgon=tbd Ω				$T_j=25^\circ C$ $T_j=150^\circ C$		tbd tbd		ns
Reverse recovered charge	$Q_{rr}$					$T_j=25^\circ C$ $T_j=150^\circ C$		tbd tbd		
Peak rate of fall of recovery current	$di(rec)max/dt$					$T_j=25^\circ C$ $T_j=150^\circ C$		tbd tbd		
Reverse recovery energy	$E_{rec}$					$T_j=25^\circ C$ $T_j=150^\circ C$		tbd tbd		
Thermal resistance chip to heatsink per chip	$R_{thJH}$					Preapplied Phase change material				
<b>D1,D3 Protection diode</b>										
Diode forward voltage	$V_F$				13	$T_j=25^\circ C$ $T_j=125^\circ C$		1 0,9	1,21 1,1	V
Thermal resistance chip to heatsink per chip	$R_{thJH}$	Preapplied Phase change material						1,8		K/W

**Characteristic Values**

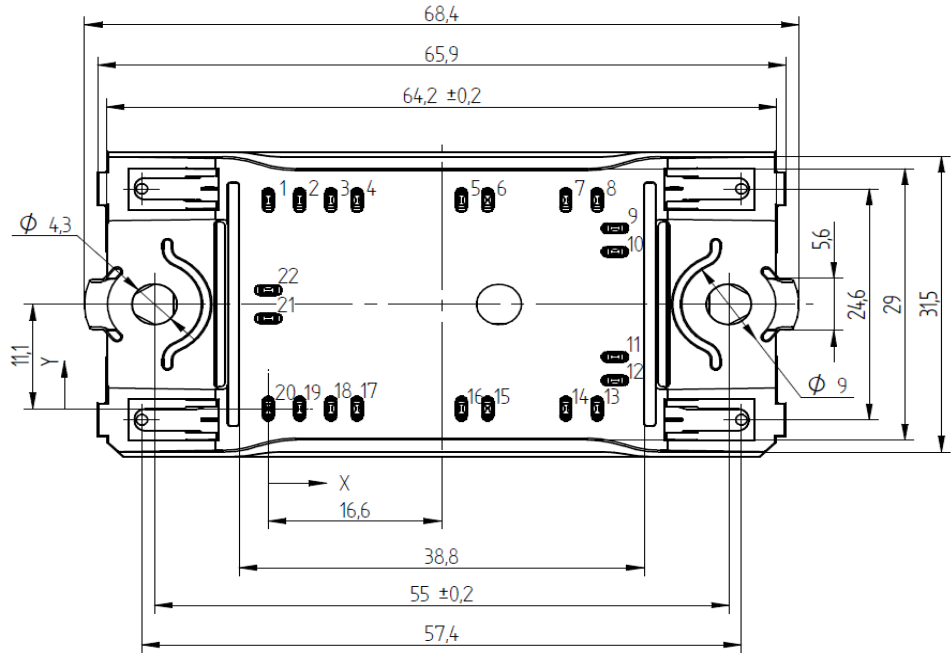
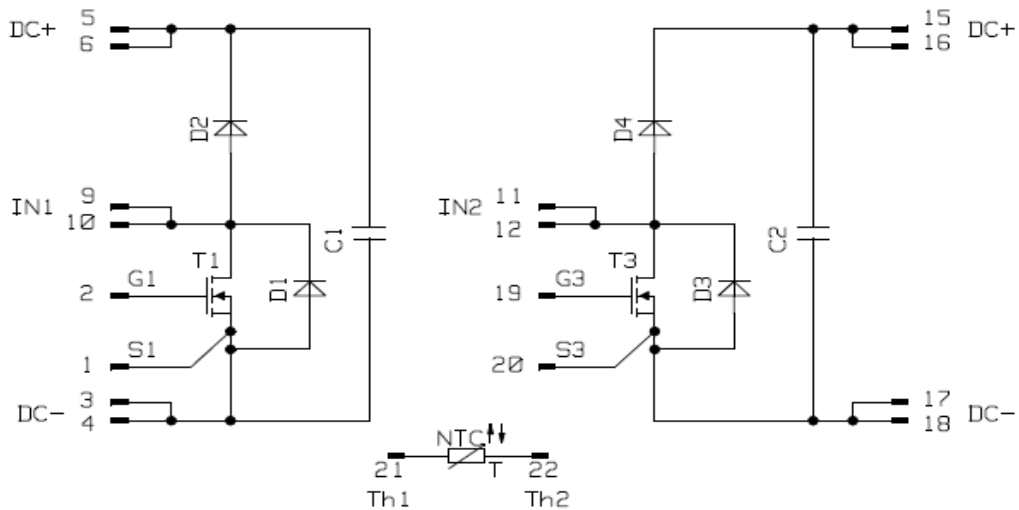
Parameter	Symbol	Conditions					Value			Unit
		$V_{GE}[V]$ or $V_{GS}[V]$	$V_r[V]$ or $V_{CE}[V]$ or $V_{DS}[V]$	$I_c[A]$ or $I_F[A]$ or $I_D[A]$	$T_j$	Min	Typ	Max		
<b>C1, C2</b>										
C value	C							100		nF
<b>Thermistor</b>										
Rated resistance	R							22000		$\Omega$
Deviation of R100	$\Delta R/R$	R100=1486 $\Omega$				$T_j=25^\circ\text{C}$	-5		5	%
R100	P					$T_c=100^\circ\text{C}$		200		mW
Power dissipation constant						$T_c=100^\circ\text{C}$		2		mW/K
A-value	$B_{(25/50)}$	Tol. $\pm 3\%$				$T_j=25^\circ\text{C}$		3950		K
B-value	$B_{(25/100)}$	Tol. $\pm 3\%$				$T_j=25^\circ\text{C}$		3996		K
Vincotech NTC Reference						$T_j=25^\circ\text{C}$			B	

**Ordering Code and Marking - Outline - Pinout**
**Ordering Code & Marking**

Version	Ordering Code	in DataMatrix as	in packaging barcode as
w/o thermal paste 12mm housing Press-fit pin	10-PZ12B2A040MR01-M330L68Y	M330L68Y	M330L68Y

**Outline**

Pin table			
Pin	X	Y	Function
1	0	22,2	S1
2	3	22,2	G1
3	6	22,2	DC-
4	8,5	22,2	DC-
5	18,5	22,2	DC+
6	21	22,2	DC+
7	28,5	22,2	NC
8	31,5	22,2	NC
9	33,2	19,2	IN1
10	33,2	16,7	IN1
11	33,2	5,5	IN2
12	33,2	3	IN2
13	31,5	0	NC
14	28,5	0	NC
15	21	0	DC+
16	18,5	0	DC+
17	8,5	0	DC-
18	6	0	DC-
19	3	0	G3
20	0	0	S3
21	0	9,6	Th1
22	0	12,6	Th2


**Pinout**


**PRODUCT STATUS DEFINITIONS**

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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