Vincotech

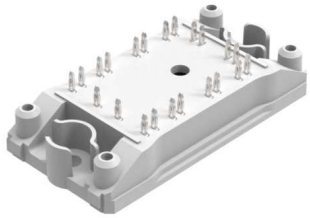
10-PC094PC035ME03-L629F46Y
target datasheet

fast PACK 0 SiC — 900 V / 35 mΩ

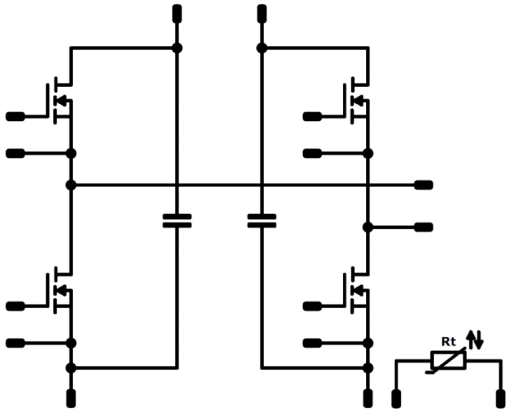
Features

- 900 V, SiC MOS
- Switching frequency up to 400 kHz
- Suitable for hard switching / soft switching
- Increased power density
- NTC

flow 0 17mm housing



Schematic



Target applications

- Power Supply

Types

- 10-PC094PC035ME03-L629F46Y

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
H-Bridge Switch				
Drain-source voltage	V_{DSS}		900	V
Drain current	I_D	T_j = T_{jmax} T_s = 80 °C	44	A
Peak drain current	I_{DM}	t_p limited by T_{jmax}	180	A
Total power dissipation	P_{tot}	T_j = T_{jmax} T_s = 80 °C	63	W
Gate-source voltage	V_{GSS}		-8/+18	V
Maximum Junction Temperature	T_{jmax}		150	°C
DC Link Capacitance				
Maximum DC voltage	V_{MAX}		1000	V
Operation Temperature	T_{op}		-55…+125	°C

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Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
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	4000	V
Creepage distance			min. 12,7	mm
Clearance			9,6	mm
Comparative Tracking Index	CTI		> 200	

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Characteristic Values

Parameter	Symbol	Conditions					Value			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	
H-Bridge Switch										
Static										
Drain-source on-state resistance	$r_{DS(on)}$		15		40	25 150		35 45	39	mΩ
Gate-source threshold voltage	$V_{GS(th)}$	$V_{GS} = V_{DS}$			0,01	25	1,8	2,1	4	V
Gate to Source Leakage Current	I_{GSS}		15	0		25			500	nA
Zero Gate Voltage Drain Current	I_{DSS}		0	900		25			200	µA
Internal gate resistance	r_g							2,35		Ω
Gate charge	Q_g							61		
Gate to source charge	Q_{GS}		-4/15	400	40	25		15		nC
Gate to drain charge	Q_{GD}							24		
Short-circuit input capacitance	C_{iss}							1320		
Short-circuit output capacitance	C_{oss}	f= 1 MHz	0	600		25		120		pF
Reverse transfer capacitance	C_{rss}							8		
Reverse Diode Static										
Diode forward voltage	V_{SD}		-4		10	25		4,8		V
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	phase-change material λ=3,4 W/mK						1,12		K/W
DC Link Capacitance										
Capacitance	C							94		nF
Tolerance							-10		+10	%
Climatic category							55/125/56			

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Characteristic Values

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

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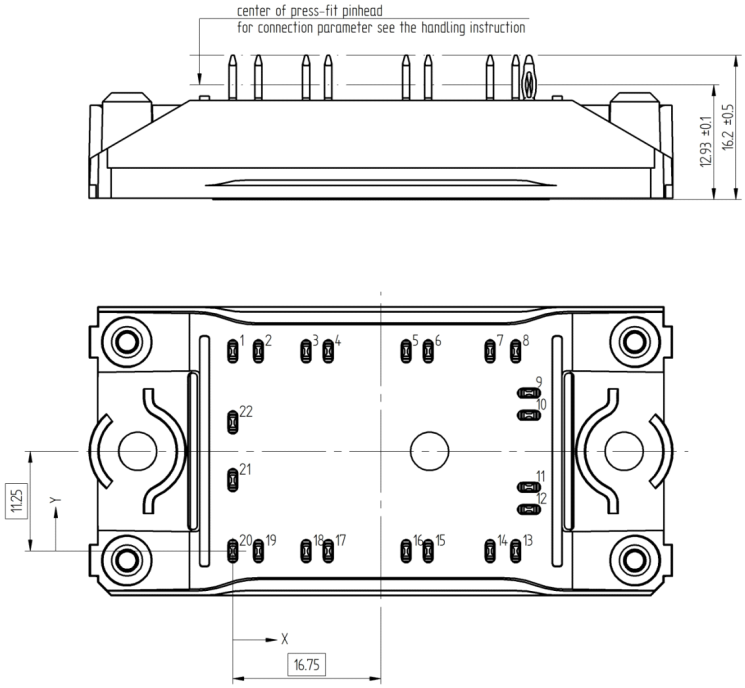
Ordering Code & Marking

Version	Ordering Code
without thermal paste 12mm housing with Press-fit pins	10-PC094PC035ME03-L629F46Y

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

Outline

Pin table [mm]			
Pin	X	Y	Function
1	0	22,5	G11
2	2,9	22,5	S11
3	8,3	22,5	DC-1
4	10,8	22,5	DC-1
5	19,6	22,5	DC+1
6	22,1	22,5	DC+1
7	29,1	22,5	S12
8	32	22,5	G12
9	33,5	17,8	Ph1
10	33,5	15,3	Ph1
11	33,5	7,2	Ph2
12	33,5	4,7	Ph2
13	32	0	G14
14	29,1	0	S14
15	22,1	0	DC+2
16	19,6	0	DC+2
17	10,8	0	DC-2
18	8,3	0	DC-2
19	2,9	0	S13
20	0	0	G13
21	0	8	Therm1
22	0	14,5	Therm2



Tolerance of pinpositions: ±0.5mm at the end of pins
Dimension of coordinate axis is only offset without tolerance

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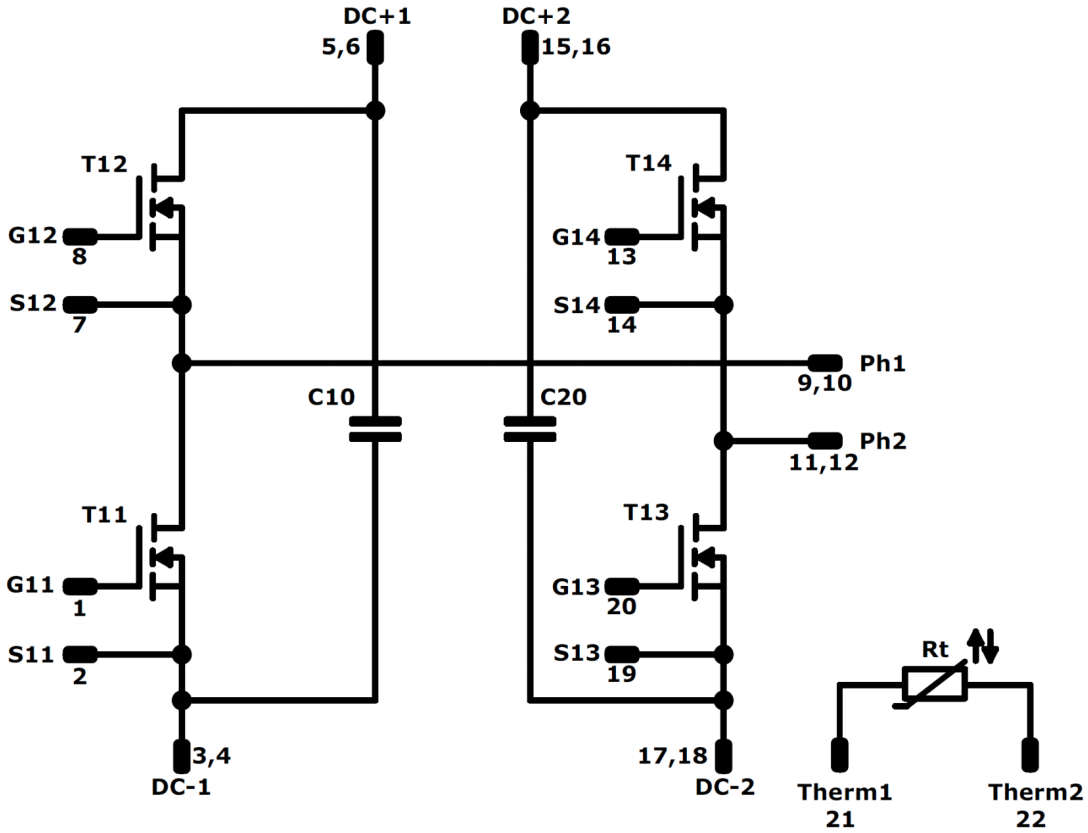
Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T11-T14	MOSFET	900 V	35 mΩ	H-Bridge Switch	
C10, C20	Capacitor	1000 V		DC Link Capacitance	
Rt	Thermistor			Thermistor	

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

Handling instruction
Handling instructions for *flow* 0 packages see vincotech.com website.

Package data
Package data for *flow* 0 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
10-PC094PC035ME03-L629F46Y-T1-14	22 Mar. 2017		

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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