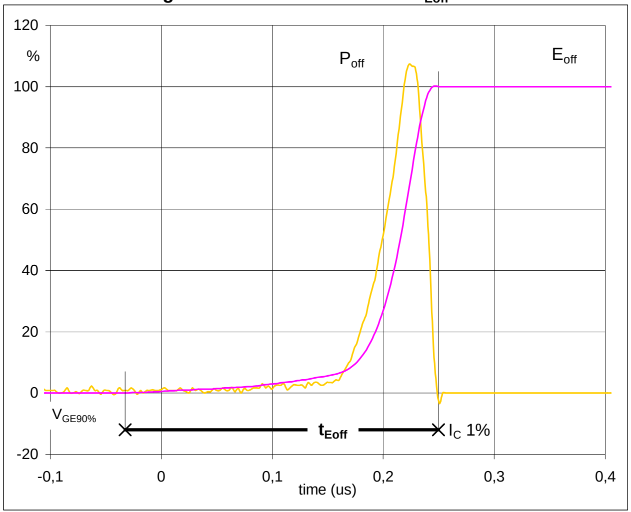
Switching Definitions BUCK MOSFET

Figure 5 Output inverter IGBT

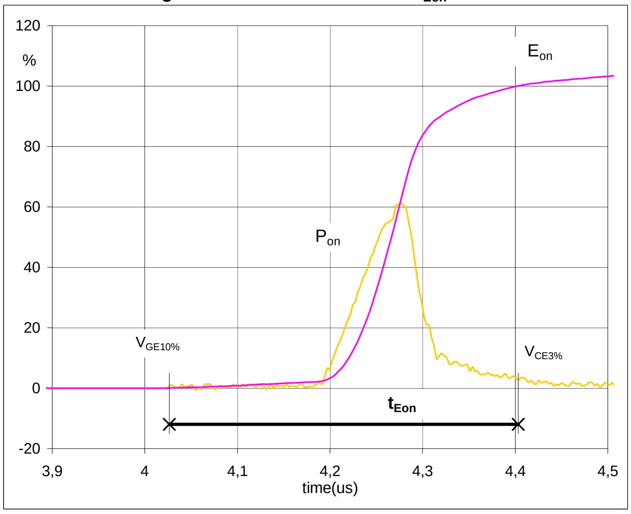
Turn-off Switching Waveforms & definition of t_{Eoff}



P_{off} (100%) =	69,97	kW
E_{off} (100%) =	3,38	mJ
t_{Eoff} =	0,28	µs

Figure 6 Output inverter IGBT

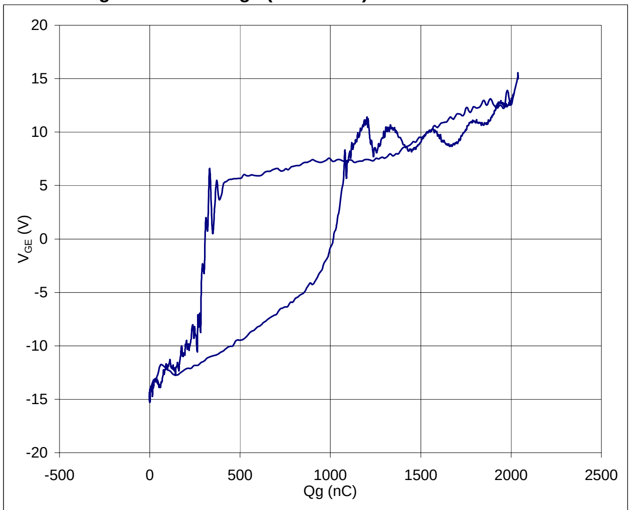
Turn-on Switching Waveforms & definition of t_{Eon}



P_{on} (100%) =	69,97	kW
E_{on} (100%) =	3,48	mJ
t_{Eon} =	0,38	µs

Figure 7 Output inverter IGBT

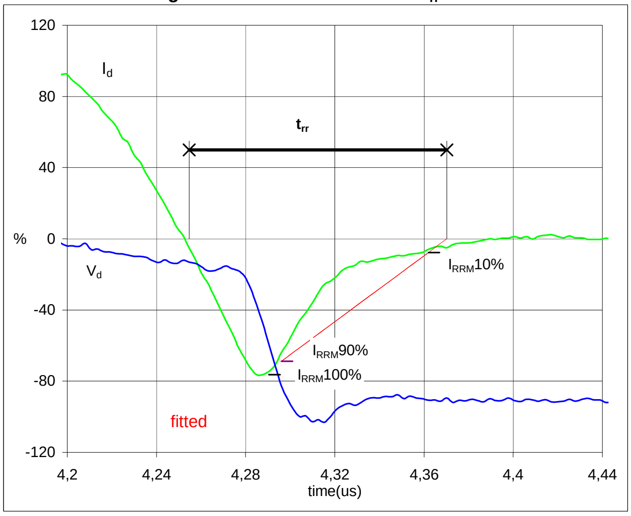
Gate voltage vs Gate charge (measured)



V_{GEoff} =	-15	V
V_{GEon} =	15	V
V_C (100%) =	350	V
I_C (100%) =	200	A
Q_g =	2037,49	nC

Figure 8 Output inverter IGBT

Turn-off Switching Waveforms & definition of t_{rr}

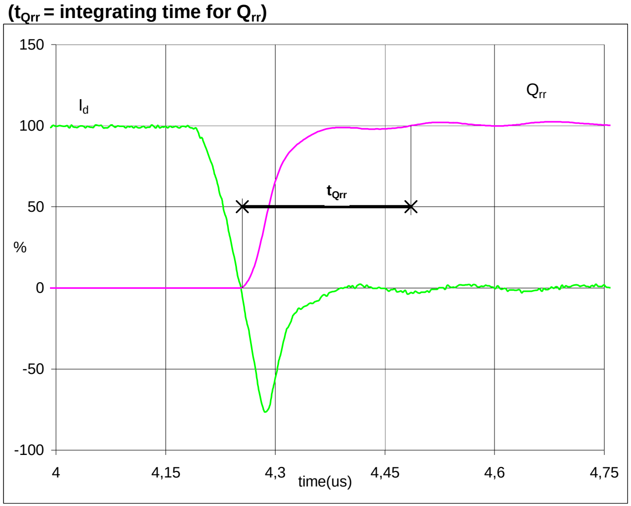


V_d (100%) =	350	V
I_d (100%) =	200	A
I_{RRM} (100%) =	-154	A
t_{rr} =	0,11	µs

Switching Definitions BUCK MOSFET

Figure 9 Output inverter FWD

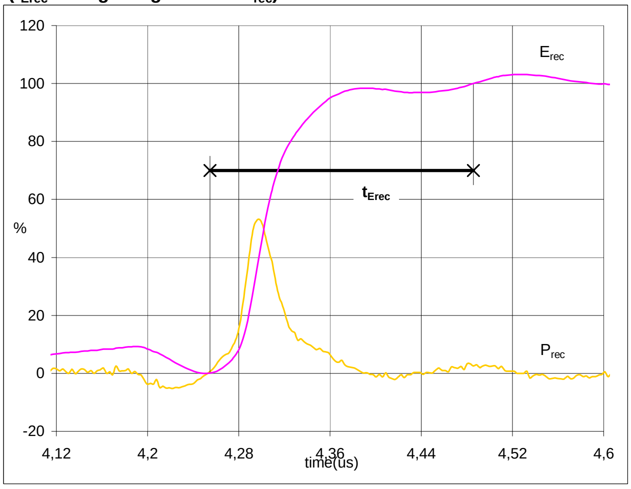
Turn-on Switching Waveforms & definition of t_{Qrr}
(t_{Qrr} = integrating time for Q_{rr})



I_d (100%) =	200	A
Q_{rr} (100%) =	7,28	μC
t_{Qrr} =	0,23	μs

Figure 10 Output inverter FWD

Turn-on Switching Waveforms & definition of t_{Erec}
(t_{Erec}= integrating time for E_{rec})



P_{rec} (100%) =	69,97	kW
E_{rec} (100%) =	1,54	mJ
t_{Erec} =	0,23	μs

Measurement circuits

Figure 11

BUCK stage switching measurement circuit

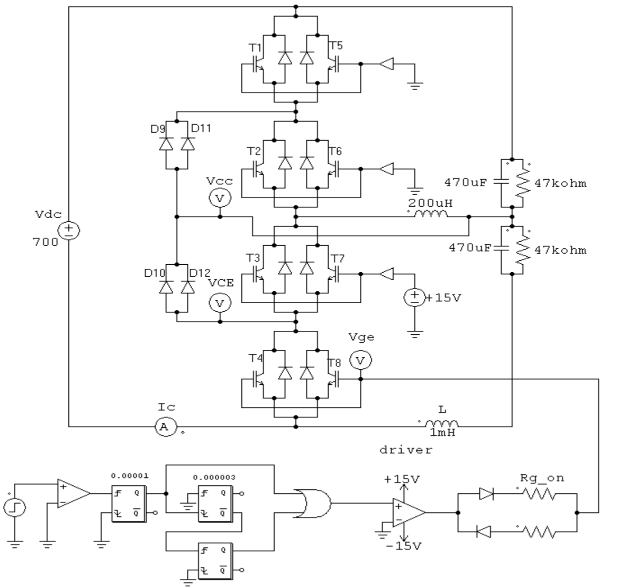
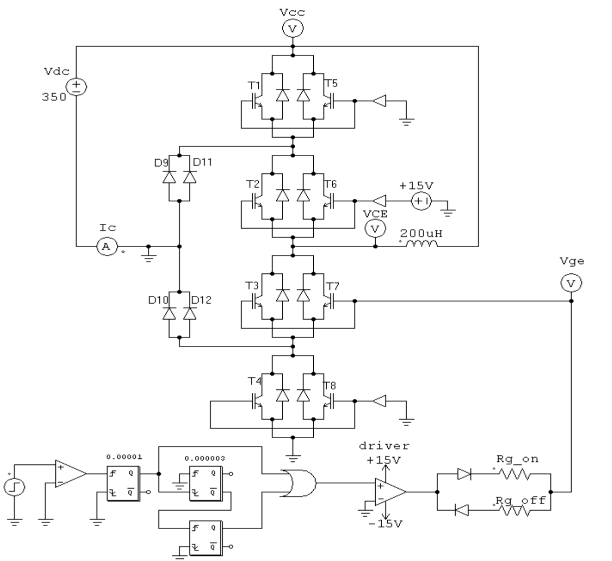


Figure 12

BOOST stage switching measurement circuit



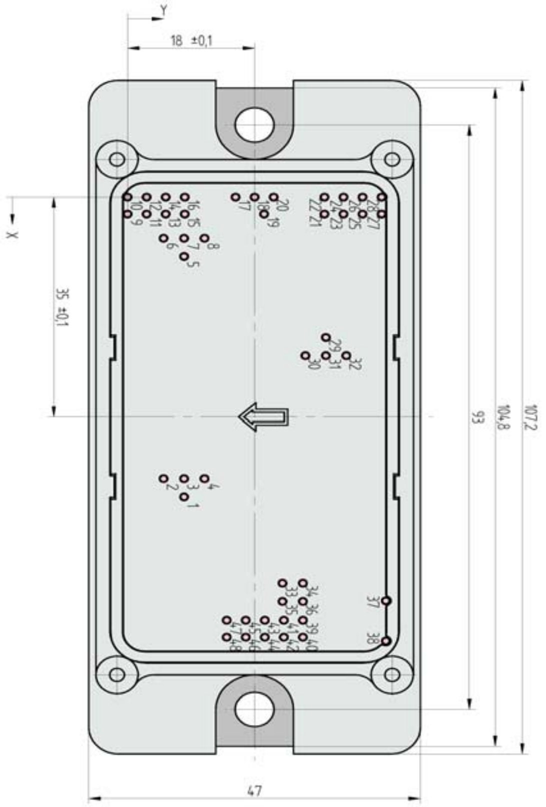
Ordering Code and Marking - Outline - Pinout

Ordering Code & Marking

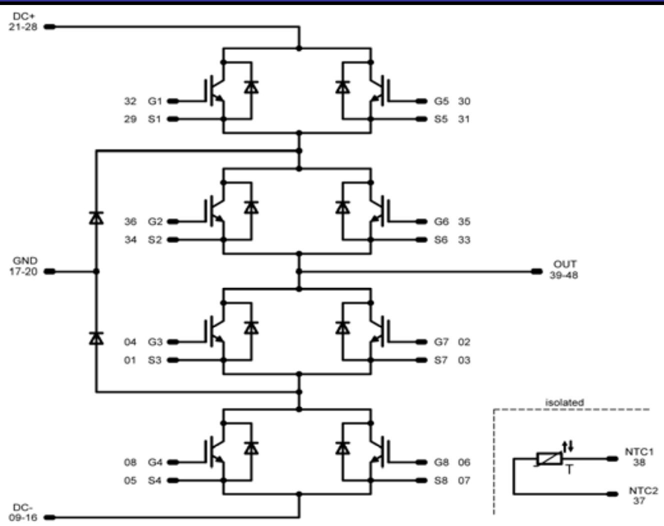
Version	Ordering Code	in DataMatrix as	in packaging barcode as
Standard in flow2 housing	30-F206NIA200SG-M105F25	M105F25	M105F25

Outline

Pin table				Pin table			
Pin	Note 1	X	Y	Pin	Note 1	X	Y
1	S3	47,65	8	25	DC+	2,7	33,3
2	G7	44,75	5,1	26	DC+	0	33,3
3	S7	44,75	8	27	DC+	2,7	36
4	G3	44,75	10,9	28	DC+	0	36
5	S4	9,45	8	29	S1	22,35	28,1
6	G8	6,55	5,1	30	G5	25,25	25,2
7	S8	6,55	8	31	S5	25,25	28,1
8	G4	6,55	10,9	32	G1	25,25	31
9	DC-	2,7	0	33	S6	61,4	21,95
10	DC-	0	0	34	S2	61,4	24,85
11	DC-	2,7	2,7	35	G6	64,3	21,95
12	DC-	0	2,7	36	G2	64,3	24,85
13	DC-	2,7	5,4	37	NTC2	64,2	36,6
14	DC-	0	5,4	38	NTC1	70,6	36,6
15	DC-	2,7	8,1	39	OUT	67,3	24,85
16	DC-	0	8,1	40	OUT	70	24,85
17	GND	0	15,3	41	OUT	67,3	22,15
18	GND	0	18	42	OUT	70	22,15
19	GND	2,7	19,35	43	OUT	67,3	19,45
20	GND	0	20,7	44	OUT	70	19,45
21	DC+	2,7	27,9	45	OUT	67,3	16,75
22	DC+	0	27,9	46	OUT	70	16,75
23	DC+	2,7	30,6	47	OUT	67,3	14,05
24	DC+	0	30,6	48	OUT	70	14,05



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.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data may be published at a later date. Vincotech reserves the right to make changes at any time without notice in order to improve design. The data contained is exclusively intended for technically trained staff.
Final	Full Production	This datasheet contains final specifications. Vincotech reserves the right to make changes at any time without notice in order to improve design. 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.