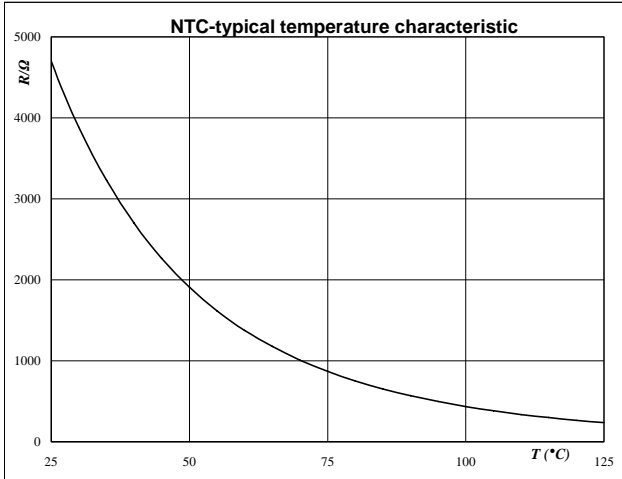


Thermistor

Figure 1 Thermistor

**Typical NTC characteristic
as a function of temperature**

$$R_T = f(T)$$

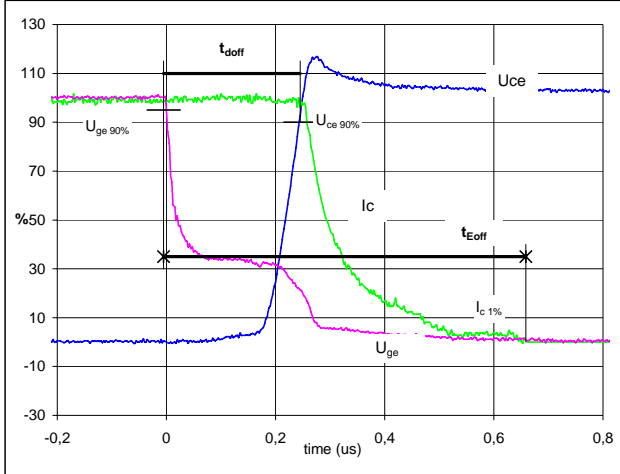


Switching Definitions Output Inverter

General conditions

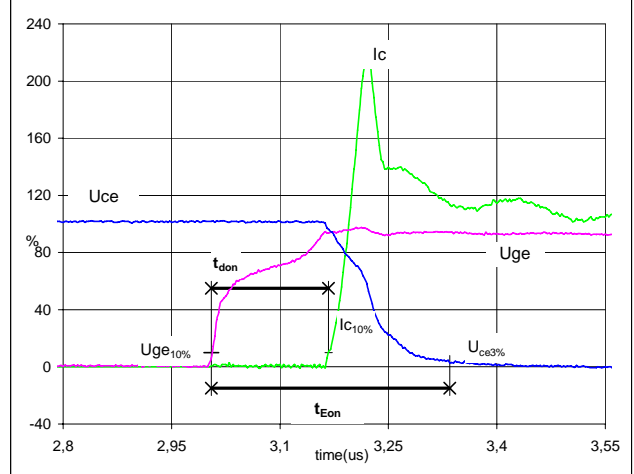
T_j	=	150 °C
R_{gon}	=	4 Ω
R_{goff}	=	4 Ω

Figure 1 Output inverter IGBT

Turn-off Switching Waveforms & definition of t_{doff} , t_{Eoff}
 (t_{Eoff} = integrating time for E_{off})


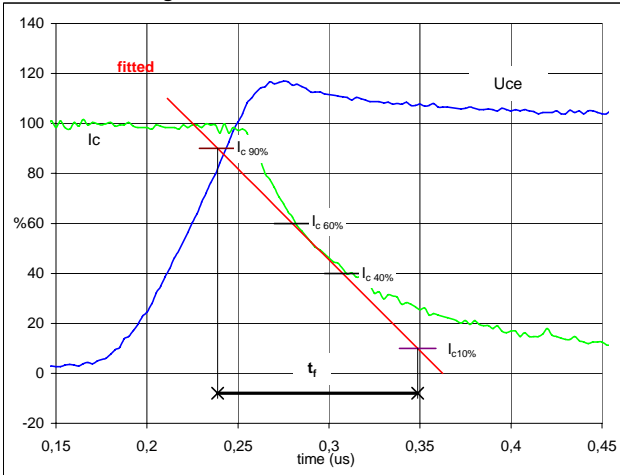
V_{GE} (0%) =	-15	V
V_{GE} (100%) =	15	V
V_C (100%) =	300	V
I_C (100%) =	75	A
t_{doff} =	0,24	μ s
t_{Eoff} =	0,66	μ s

Figure 2 Output inverter IGBT

Turn-on Switching Waveforms & definition of t_{don} , t_{Eon}
 (t_{Eon} = integrating time for E_{on})


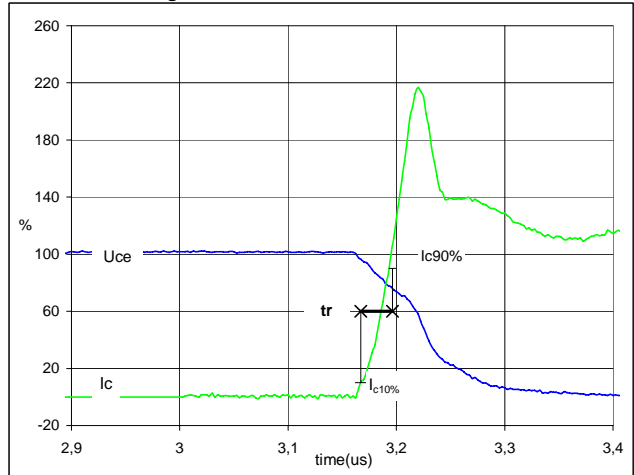
V_{GE} (0%) =	-15	V
V_{GE} (100%) =	15	V
V_C (100%) =	300	V
I_C (100%) =	75	A
t_{don} =	0,16	μ s
t_{Eon} =	0,33	μ s

Figure 3 Output inverter IGBT

Turn-off Switching Waveforms & definition of t_f


V_C (100%) =	300	V
I_C (100%) =	75	A
t_f =	0,12	μ s

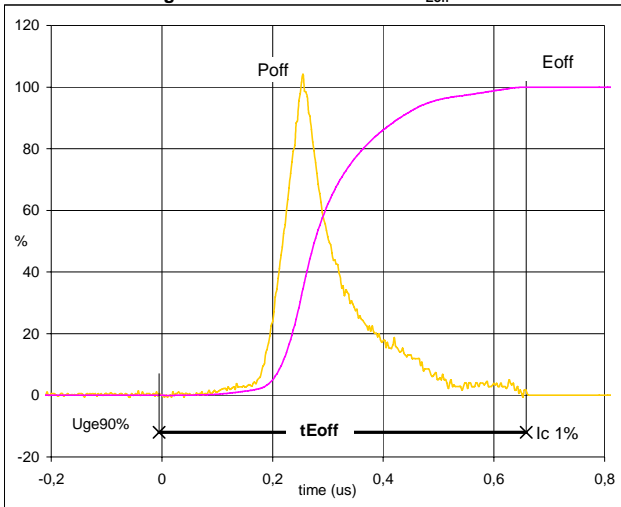
Figure 4 Output inverter IGBT

Turn-on Switching Waveforms & definition of t_r


V_C (100%) =	300	V
I_C (100%) =	75	A
t_r =	0,03	μ s

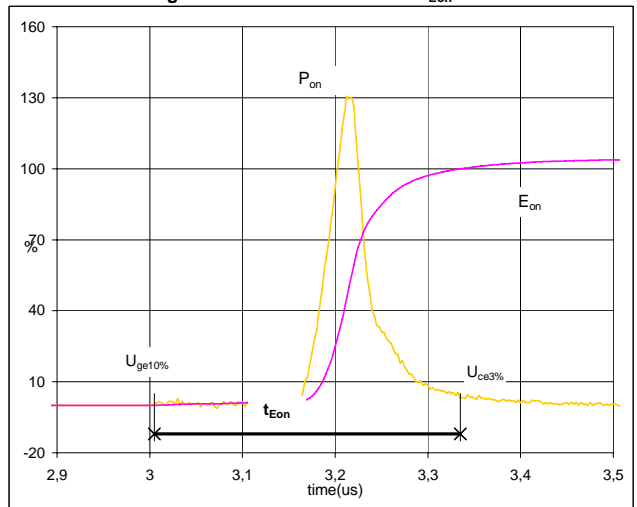
Switching Definitions Output Inverter

Figure 5 Output inverter IGBT

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


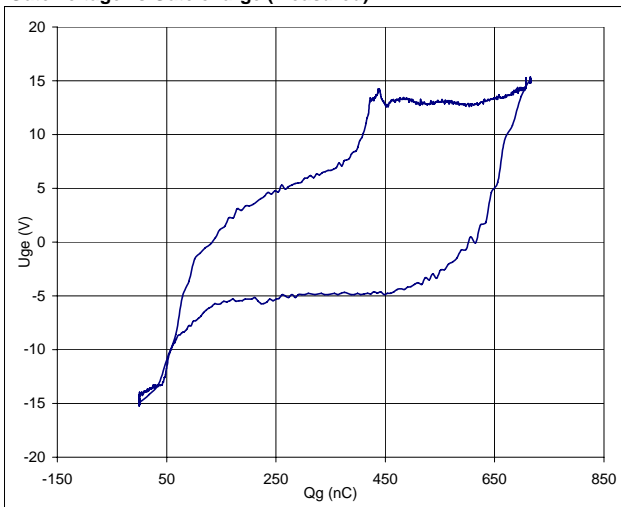
$P_{off} (100\%) = 22,54 \text{ kW}$
 $E_{off} (100\%) = 2,76 \text{ mJ}$
 $t_{Eoff} = 0,66 \text{ } \mu\text{s}$

Figure 6 Output inverter IGBT

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


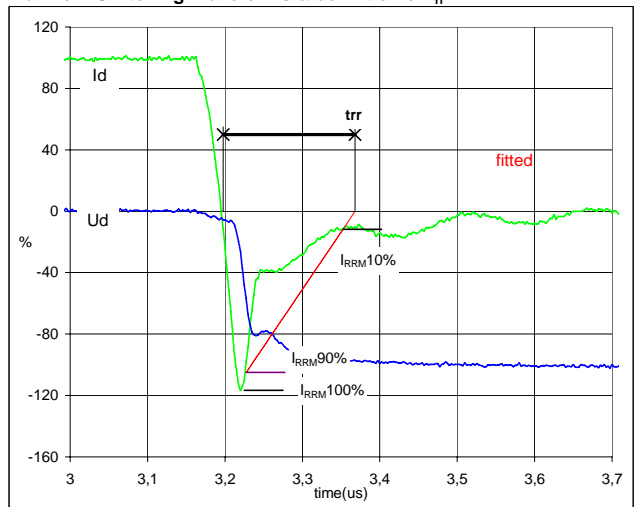
$P_{on} (100\%) = 22,54 \text{ kW}$
 $E_{on} (100\%) = 1,60 \text{ mJ}$
 $t_{Eon} = 0,33 \text{ } \mu\text{s}$

Figure 7 Output inverter FRED

Gate voltage vs Gate charge (measured)


$V_{GEoff} = -15 \text{ V}$
 $V_{GEon} = 15 \text{ V}$
 $V_C (100\%) = 300 \text{ V}$
 $I_C (100\%) = 75 \text{ A}$
 $Q_g = 715,15 \text{ nC}$

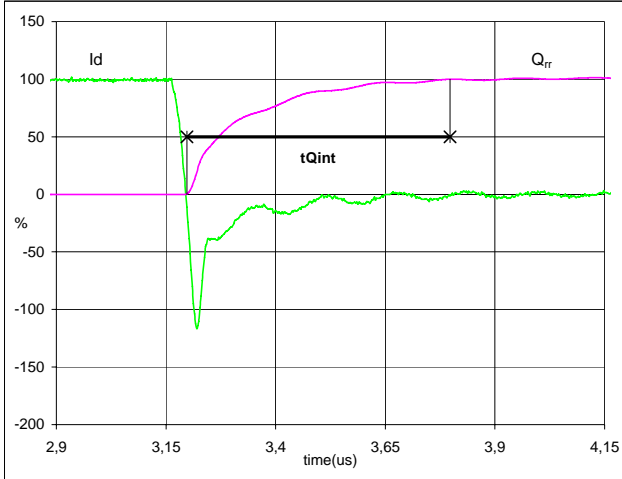
Figure 8 Output inverter IGBT

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


$V_d (100\%) = 300 \text{ V}$
 $I_d (100\%) = 75 \text{ A}$
 $I_{RRM} (100\%) = -88 \text{ A}$
 $t_{rr} = 0,17 \text{ } \mu\text{s}$

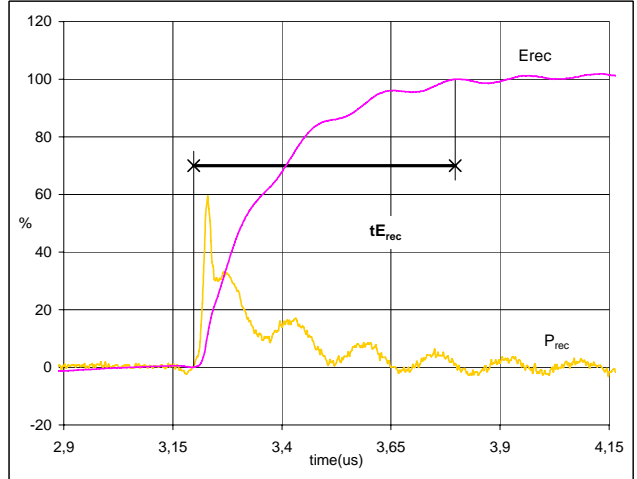
Switching Definitions Output Inverter

Figure 9 Output inverter FRED

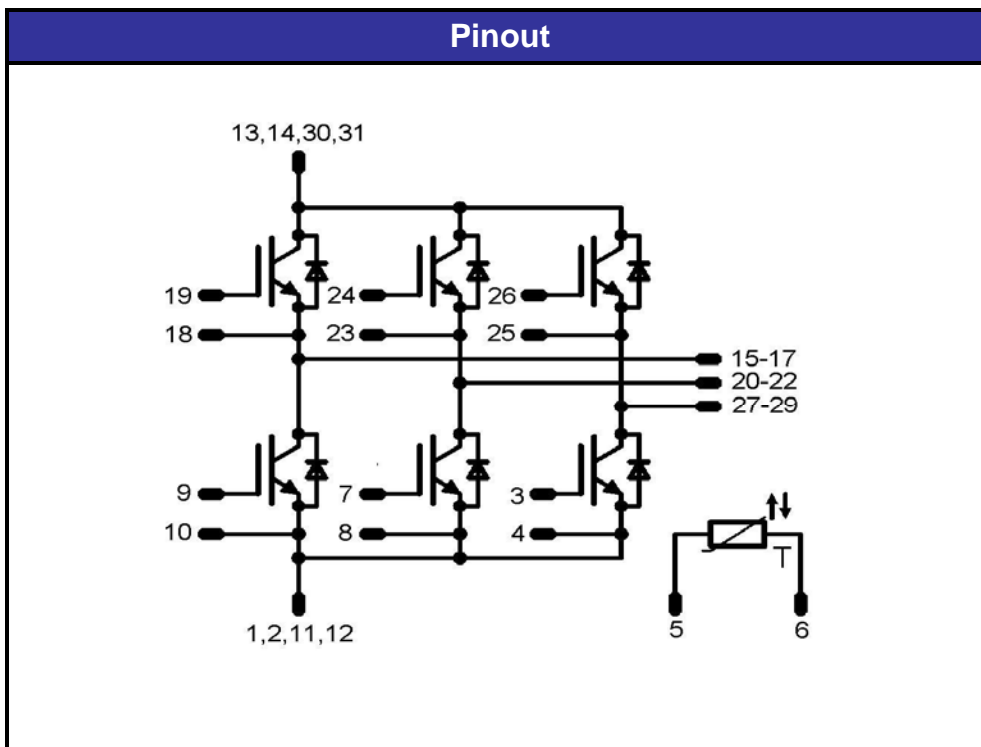
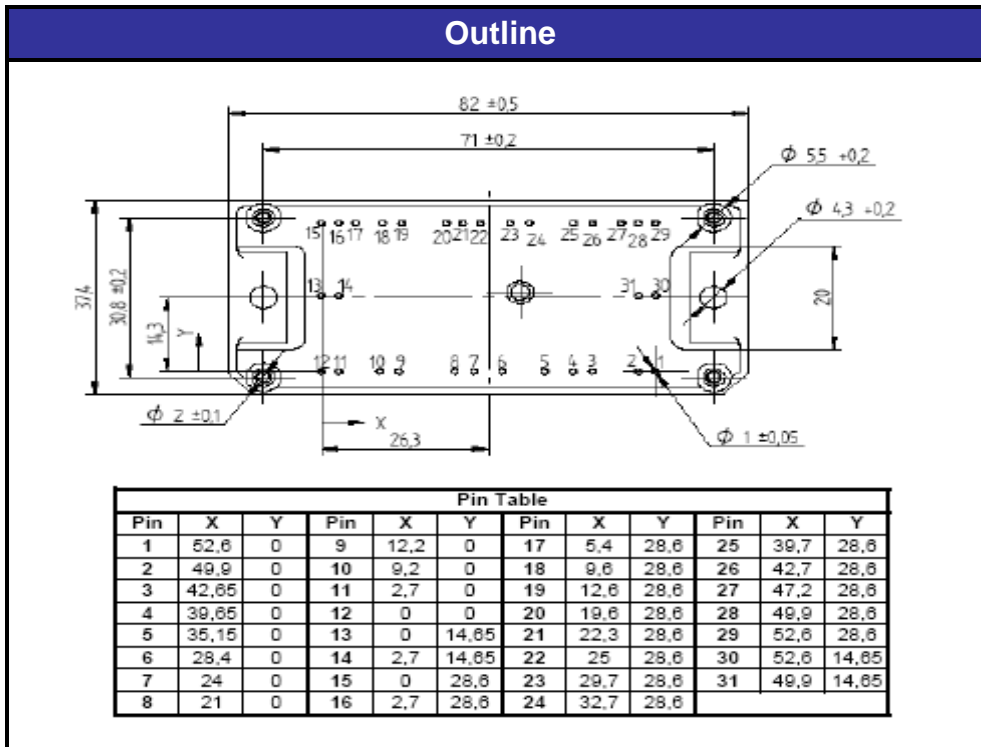
Turn-on Switching Waveforms & definition of t_{Qrr}
 (t_{Qrr} = integrating time for Q_{rr})


I_d (100%) =	75	A
Q_{rr} (100%) =	6,83	μC
t_{Qint} =	0,60	μs

Figure 10 Output inverter FRED

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


P_{rec} (100%) =	22,54	kW
E_{rec} (100%) =	1,50	mJ
t_{Erec} =	0,60	μs

Package Outline and 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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