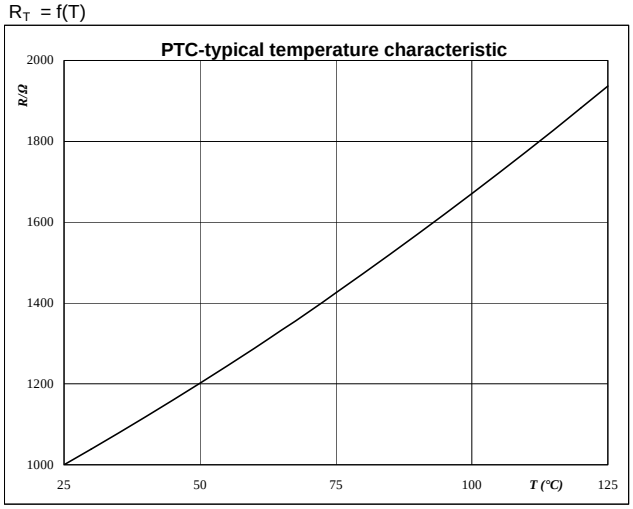
Thermistor

Figure 1 Thermistor

Typical PTC characteristic
as a function of temperature

$R_T = f(T)$



Switching Definitions Output Inverter

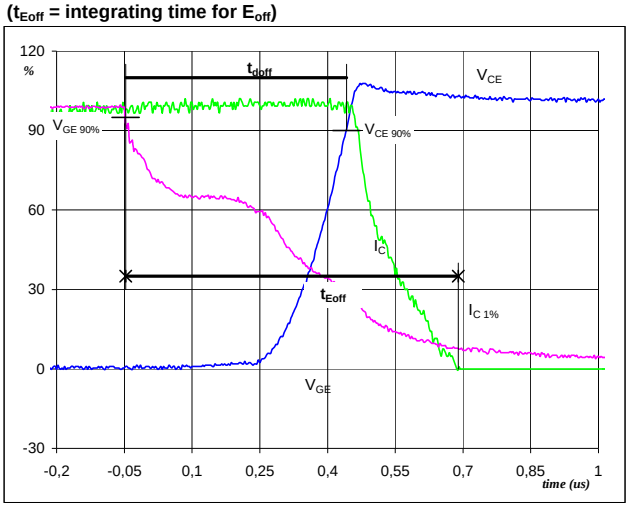
General conditions

T_j	=	125 ℃
R_{gon}	=	14 Ω
R_{goff}	=	14 Ω

Figure 1 Output inverter IGBT

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

(t_{Eoff} = integrating time for E_{off})

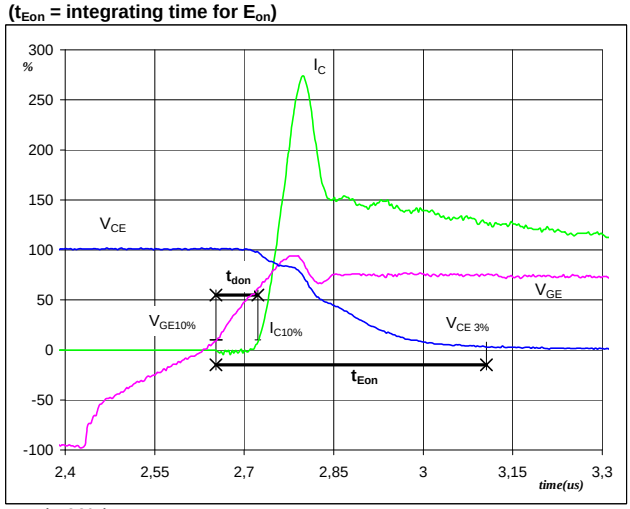


V_{GE} (0%) =	-15	V
V_{GE} (100%) =	15	V
V_C (100%) =	600	V
I_C (100%) =	69	A
t_{doff} =	0,49	µs
t_{Eoff} =	0,74	µs

Figure 2 Output inverter IGBT

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

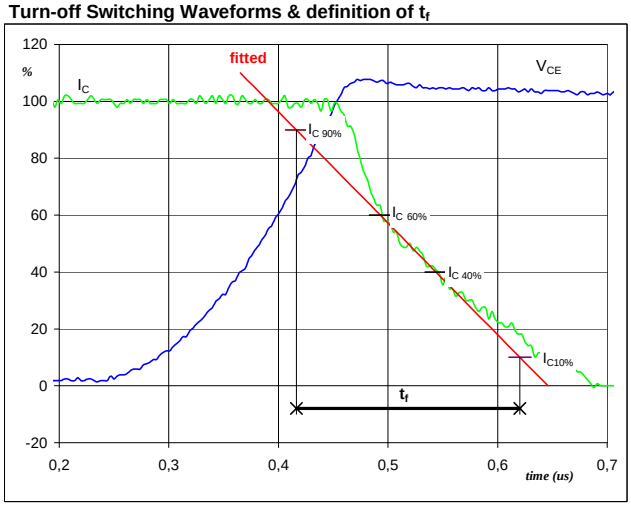
(t_{Eon} = integrating time for E_{on})



V_{GE} (-100%) =	-15	V
V_{GE} (100%) =	15	V
V_C (100%) =	600	V
I_C (100%) =	69	A
t_{don} =	0,07	µs
t_{Eon} =	0,45	µs

Figure 3 Output inverter IGBT

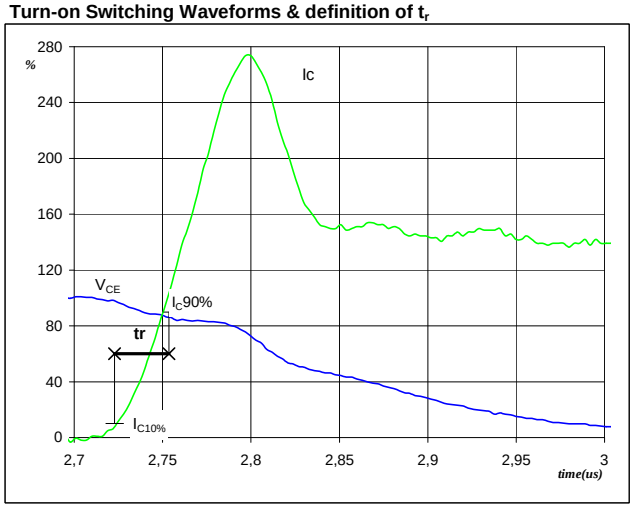
Turn-off Switching Waveforms & definition of t_f



V_C (100%) =	600	V
I_C (100%) =	69	A
t_f =	2,00	µs

Figure 4 Output inverter IGBT

Turn-on Switching Waveforms & definition of t_r

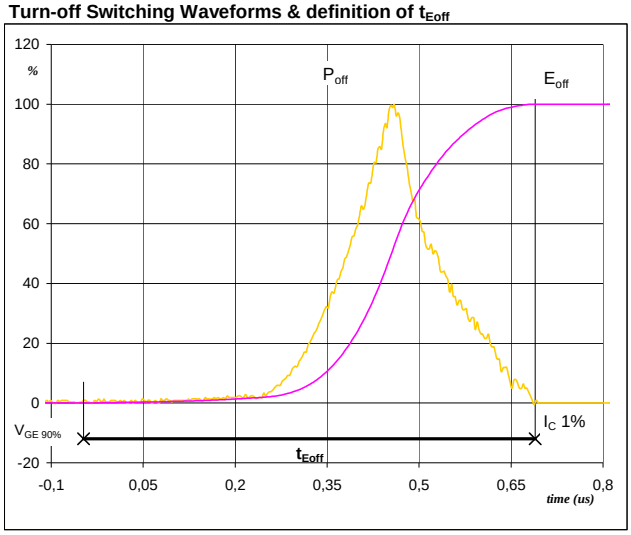


V_C (100%) =	600	V
I_C (100%) =	69	A
t_r =	0,03	µs

Switching Definitions Output Inverter

Figure 5 Output inverter IGBT

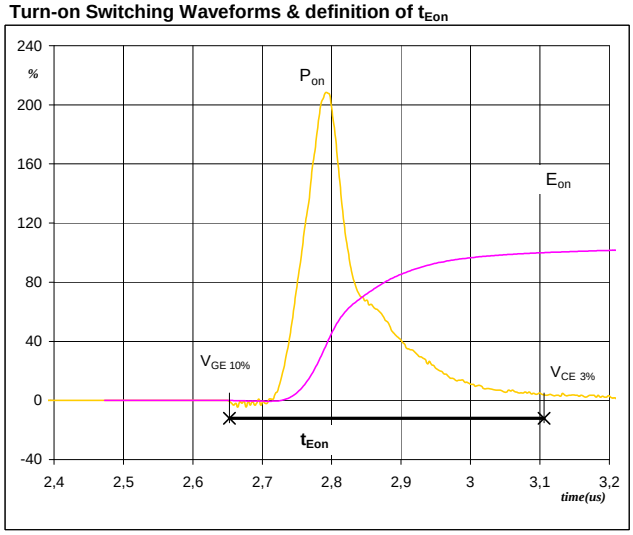
Turn-off Switching Waveforms & definition of t_{Eoff}



P_{off} (100%) =	41,57	kW
E_{off} (100%) =	7,13	mJ
t_{Eoff} =	0,74	µs

Figure 6 Output inverter IGBT

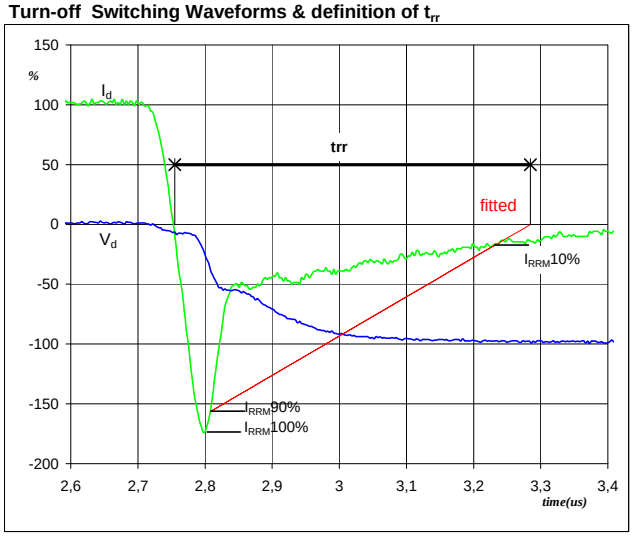
Turn-on Switching Waveforms & definition of t_{Eon}



P_{on} (100%) =	41,57	kW
E_{on} (100%) =	8,51	mJ
t_{Eon} =	0,45	µs

Figure 7 Output inverter FWD

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



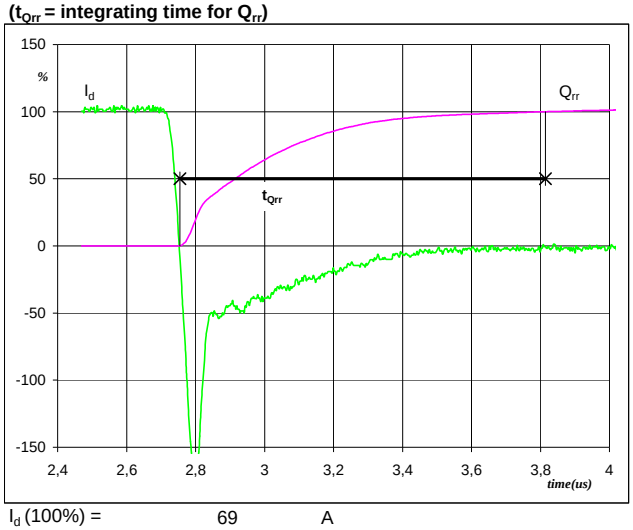
V_d (100%) =	600	V
I_d (100%) =	69	A
I_{RRM} (100%) =	121	A
t_{rr} =	0,47	µs

Switching Definitions Output Inverter

Figure 8 Output inverter FWD

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

(t_{Qrr} = integrating time for Q_{rr})

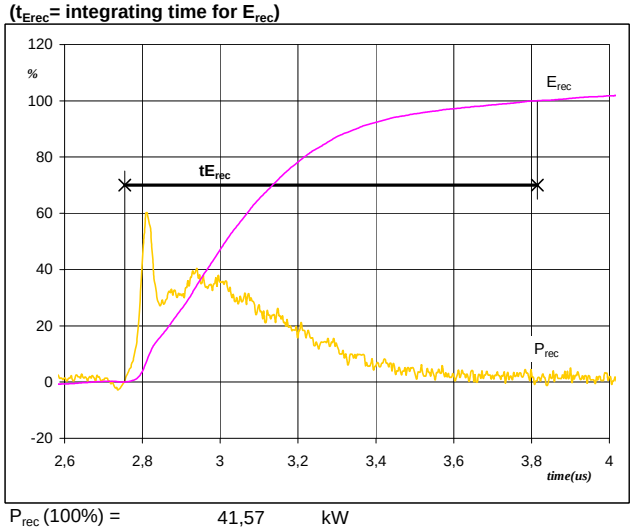


I_d (100%) =	69	A
Q_{rr} (100%) =	17,62	µC
t_{Qrr} =	1,06	µs

Figure 9 Output inverter FWD

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

(t_{Erec}= integrating time for E_{rec})



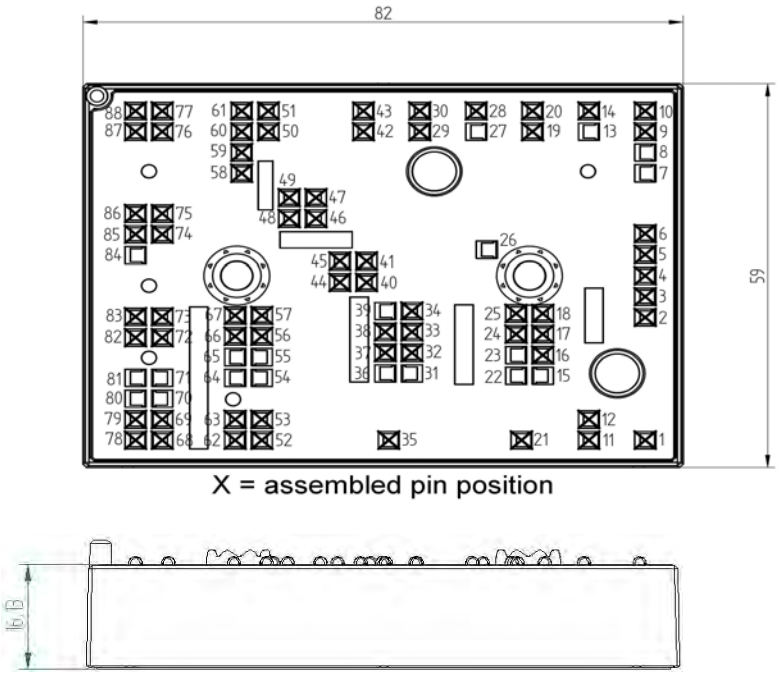
P_{rec} (100%) =	41,57	kW
E_{rec} (100%) =	6,89	mJ
t_{Erec} =	1,06	µs

Ordering Code and Marking - Outline - Pinout

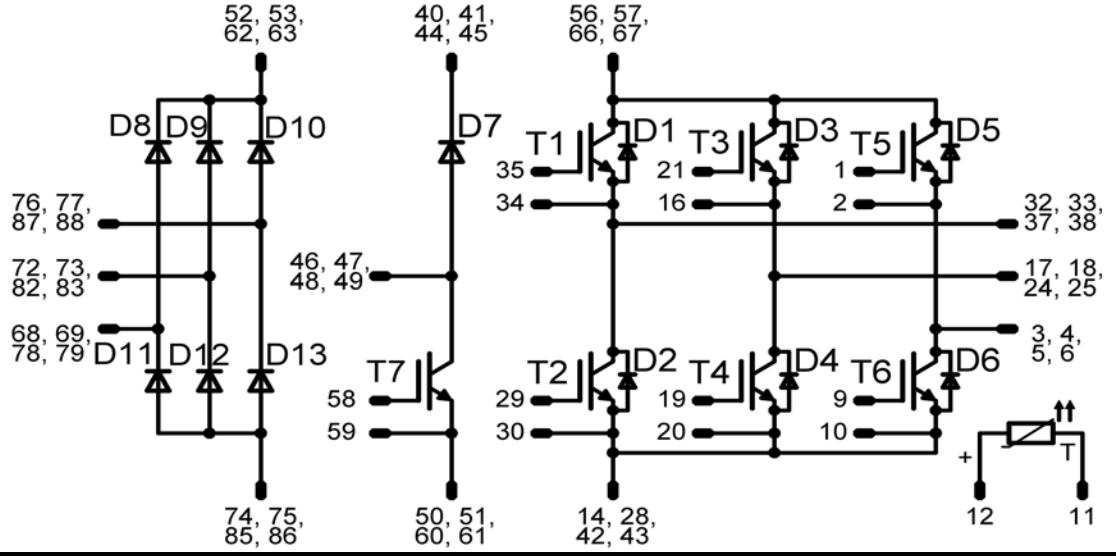
Ordering Code & Marking

Version	Ordering Code	in DataMatrix as	in packaging barcode as
with std lid (black V23990-K32-T-PM)	V23990-K240-A-/0A/-PM	K240A	K240A-/0A/
with std lid (black V23990-K32-T-PM) and P12	V23990-K240-A-/1A/-PM	K240A	K240A-/1A/
with thin lid (white V23990-K33-T-PM)	V23990-K240-A-/0B/-PM	K240A	K240A-/0B/
with thin lid (white V23990-K33-T-PM) and P12	V23990-K240-A-/1B/-PM	K240A	K240A-/1B/

Outline



Pinout



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