

flowPIM®1, 600V
Maximum Ratings / Höchstzulässige Werte

Parameter	Condition	Symbol	Datasheet values max.	Unit
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**Input Rectifier Bridge
Gleichrichter**

Repetitive peak reverse voltage Periodische Rückw. Spitzensperrspannung		V_{RRM}	1600	V
Forward current per diode Dauergrenzstrom	DC current $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	I_{FAV}	29 40, limited by nr. of wires	A
Surge forward current Stoßstrom Grenzwert	$t_p=10\text{ms}$ $T_j=25^\circ\text{C}$	I_{FSM}	200	A
I^2t -value Grenzlastintegral	$t_p=10\text{ms}$ $T_j=25^\circ\text{C}$	I^2t	200	A ² s
Power dissipation per Diode Verlustleistung pro Diode	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	P_{tot}	35 53	W

**Transistor Inverter
Transistor Wechselrichter**

Collector-emitter break down voltage Kollektor-Emitter-Sperrspannung		V_{CE}	600	V
DC collector current Kollektor-Dauergleichstrom	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	I_C	7,8 8, limited by nr. of wires	A
Repetitive peak collector current Periodischer Kollektorspitzenstrom	$t_p=1\text{ms}$ $T_h=80^\circ\text{C}$	I_{cpuls}	15,6	A
Power dissipation per IGBT Verlustleistung pro IGBT	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	P_{tot}	26 39,5	W
Gate-emitter peak voltage Gate-Emitter-Spitzenspannung		V_{GE}	±20	V
SC withstand time Kurzschlußverhalten	$T_j \leq 150^\circ\text{C}$ $V_{GE}=15\text{V}$ $V_{CE}=600\text{V}$	t_{SC}	10	us

**Diode Inverter
Diode Wechselrichter**

DC forward current Dauergleichstrom	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	I_F	8, limited by nr. of wires 8, limited by nr. of wires	A
Repetitive peak forward current Periodischer Spitzenstrom	$t_p=1\text{ms}$ $T_h=80^\circ\text{C}$	I_{FRM}	24	A
Power dissipation per Diode Verlustleistung pro Diode	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	P_{tot}	21 32	W

**Transistor BRC
Transistor BRC**

Collector-emitter break down voltage Kollektor-Emitter-Sperrspannung		V_{CE}	600	V
DC collector current Kollektor-Dauergleichstrom	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	I_C	7,8 8, limited by nr. of wires	A
Repetitive peak collector current Periodischer Kollektorspitzenstrom	$t_p=1\text{ms}$ $T_h=80^\circ\text{C}$	I_{cpuls}	15,6	A
Power dissipation per IGBT Verlustleistung pro IGBT	$T_j=150^\circ\text{C}$ $T_h=80^\circ\text{C}$ $T_c=80^\circ\text{C}$	P_{tot}	26 39,5	W
Gate-emitter peak voltage Gate-Emitter-Spitzenspannung		V_{GE}	±20	V
SC withstand time Kurzschlußverhalten	$T_j \leq 150^\circ\text{C}$ $V_{GE}=15\text{V}$ $V_{CE}=600/1200\text{V}$	t_{SC}	10	us

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Maximum Ratings / Höchstzulässige Werte

Parameter	Condition	Symbol	Datasheet values max.	Unit
Diode BRC				
DC forward current Dauergleichstrom	$T_j=150^{\circ}\text{C}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	I_F	8, limited by nr. of wires 8, limited by nr. of wires	A
Repetitive peak forward current Periodischer Spitzenstrom	$t_p=1\text{ms}$ $T_h=80^{\circ}\text{C}$	I_{FRM}	24	A
Power dissipation per Diode Verlustleistung pro Diode	$T_j=150^{\circ}\text{C}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	P_{tot}	21 32	W

Thermal properties
Thermische Eigenschaften

max. Chip temperature max. Chiptemperatur		T_{jmax}	150	$^{\circ}\text{C}$
Storage temperature Lagertemperatur		T_{stg}	-40...+125	$^{\circ}\text{C}$
Operation temperature Betriebstemperatur		T_{op}	-40...+125	$^{\circ}\text{C}$

Insulation properties
Modulisation

Insulation voltage Isolationsspannung	$t=1\text{min}$	V_{is}	4000	Vdc
Creepage distance Kriechstrecke			min 12,7	mm
Clearance Luftstrecke			min 12,7	mm

flowPIM® 1, 600V
Characteristic values/ Charakteristische Werte

Description	Symbol	Conditions					Datasheet values			Unit
		T(°C)	Other conditions (Rgon-Rgoff)	V _{GE} (V) V _{GS} (V)	V _R (V) V _{CE} (V) V _{DS} (V)	I _C (A) I _F (A) I _d (A)	Min	Typ	Max	

Input Rectifier Bridge
Gleichrichter

Forward voltage Durchlaßspannung	V _F	T _J =25°C				30	0,8	1,24	1,4	V
Threshold voltage (for power loss calc. only) Schleusenspannung	V _{to}	T _J =25°C				30		0,92		V
Slope resistance (for power loss calc. only) Ersatzwiderstand	r _t	T _J =25°C				30		10		mOhm
Reverse current Sperrstrom	I _r	T _J =25°C			1200				0,01	mA
Thermal resistance chip to heatsink per chip Wärmewiderstand Chip-Kühlkörper pro Chip	R _{thJH}		Thermal grease thickness≤50um					2		K/W
Thermal resistance chip to case per chip Wärmewiderstand Chip-Gehäuse pro Chip	R _{thJC}		Wärmeleitpaste Dicke≤50um λ = 0,61 W/mK					1,3		K/W

Transistor Inverter, inductive load
Transistor Wechselrichter

Gate emitter threshold voltage Gate-Schwellenspannung	V _{GE(th)}	T _J =25°C T _J =125°C	V _{CE} =V _{GE}			0,0002	3	4	5	V
Collector-emitter saturation voltage Kollektor-Emitter Sättigungsspannung	V _{CE(sat)}	T _J =25°C T _J =125°C		15		5	1,5	2,3 2,6	2,8	V
Collector-emitter cut-off incl.FRED Kollektor-Emitter Reststrom inkl.FRED	I _{CES}	T _J =25°C T _J =125°C		0	600				0,06	mA
Gate-emitter leakage current Gate-Emitter Reststrom	I _{GES}	T _J =25°C T _J =150°C		25	0				120	nA
Integrated Gate resistor Integrierter Gate Widerstand	R _{gint}									Ohm
Turn-on delay time Einschaltverzögerungszeit	t _{d(on)}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		11		ns
Rise time Anstiegszeit	t _r	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		10		ns
Turn-off delay time Abschaltverzögerungszeit	t _{d(off)}	T _J =25°C T _J =125°C	Rgoff=32 Ohm	15	300	5		135		ns
Fall time Fallzeit	t _f	T _J =25°C T _J =125°C	Rgoff=32 Ohm	15	300	5		40		ns
Turn-on energy loss per pulse Einschaltverlustenergie pro Puls	E _{on}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		0,102		mWs
Turn-off energy loss per pulse Abschaltverlustenergie pro Puls	E _{off}	T _J =25°C T _J =125°C	Rgoff=32Ohm	15	300	5		0,102		mWs
Input capacitance Eingangskapazität	C _{ies}	T _J =25°C T _J =125°C	f=1MHz	0	25			0,264		nF
Output capacitance Ausgangskapazität	C _{oss}	T _J =25°C T _J =125°C	f=1MHz	0	25			0,029		nF
Reverse transfer capacitance Rückwirkungskapazität	C _{rss}	T _J =25°C T _J =125°C	f=1MHz	0	25			0,017		nF
Gate charge Gate Ladung	Q _{Gate}	T _J =25°C T _J =125°C		15	480	4		24		nC
Thermal resistance chip to heatsink per chip Wärmewiderstand Chip-Kühlkörper pro Chip	R _{thJH}		Thermal grease thickness≤50um					2,7		K/W
Thermal resistance chip to case per chip Wärmewiderstand Chip-Gehäuse pro Chip	R _{thJC}		Wärmeleitpaste Dicke≤50um λ = 0,61 W/mK					1,8		K/W

flowPIM®1, 600V
Characteristic values/ Charakteristische Werte

Description	Symbol	Conditions					Datasheet values			Unit
		T(C°)	Other conditions (Rgon-Rgoff)	VGE(V) VGS(V)	VR(V) VCE(V) VDS(V)	IC(A) IF(A) Id(A)	Min	Typ	Max	

Diode Inverter
Diode Wechselrichter

Diode forward voltage Durchlaßspannung	V_F	Tj=25°C Tj=125°C				5	1	1,54 1,17	2,2	V
Peak reverse recovery current Rückstromspitze	I_{RM}	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		10,6		A
Reverse recovery time Sperrverzögerungszeit	t_{rr}	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		63		ns
Reverse recovered charge Sperrverzögerungsladung	Q_{rr}	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		0,342		uC
Reverse recovered energy Sperrverzögerungsenergie	E_{rec}	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		0,053		mWs
Thermal resistance chip to heatsink per chip Wärmewiderstand Chip-Kühlkörper pro Chip	R_{thJH}		Thermal grease thickness≤50um					3,4		K/W
Thermal resistance chip to case per chip Wärmewiderstand Chip-Gehäuse pro Chip	R_{thJC}		Wärmeleitpaste Dicke≤50um $\lambda = 0,61 \text{ W/mK}$					2,25		K/W

Transistor BRC
Transistor BRC

Gate emitter threshold voltage Gate-Schwellenspannung	$V_{GE(th)}$	Tj=25°C Tj=125°C	VCE=VGE			0,0002	3	4	5	V
Collector-emitter saturation voltage Kollektor-Emitter Sättigungsspannung	$V_{CE(sat)}$	Tj=25°C Tj=125°C		15		5	1,5	2,3 2,6	2,8	V
Collector-emitter cut-off Kollektor-Emitter Reststrom	I_{CES}	Tj=25°C Tj=125°C		0	600				0,02	mA
Gate-emitter leakage current Gate-Emitter Reststrom	I_{GES}	Tj=25°C Tj=150°C		25	0				100	nA
Integrated Gate resistor Integrierter Gate Widerstand	R_{gint}									Ohm
Turn-on delay time Einschaltverzögerungszeit	$t_{d(on)}$	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		11		ns
Rise time Anstiegszeit	t_r	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		13		ns
Turn-off delay time Abschaltverzögerungszeit	$t_{d(off)}$	Tj=25°C Tj=125°C	Rgoff=32 Ohm	15	300	5		132		ns
Fall time Fallzeit	t_f	Tj=25°C Tj=125°C	Rgoff=32 Ohm	15	300	5		38		ns
Turn-on energy loss per pulse Einschaltverlustenergie pro Puls	E_{on}	Tj=25°C Tj=125°C	Rgon=64 Ohm	15	300	5		0,103		mWs
Turn-off energy loss per pulse Abschaltverlustenergie pro Puls	E_{off}	Tj=25°C Tj=125°C	Rgoff=32 Ohm	15	300	5		0,105		mWs
Input capacitance Eingangskapazität	C_{iss}	Tj=25°C Tj=125°C	f=1MHz	0	25			0,264	0,317	nF
Output capacitance Ausgangskapazität	C_{oss}	Tj=25°C Tj=125°C	f=1MHz	0	25			0,029		nF
Reverse transfer capacitance Rückwirkungskapazität	C_{rss}	Tj=25°C Tj=125°C	f=1MHz	0	25			0,017		nF
Gate charge Gate Ladung	Q_{Gate}	Tj=25°C Tj=125°C		15	480	4		24	31	nC
Thermal resistance chip to heatsink per chip Wärmewiderstand Chip-Kühlkörper pro Chip	R_{thJH}		Thermal grease thickness≤50um					2,7		K/W
Thermal resistance chip to case per chip Wärmewiderstand Chip-Gehäuse pro Chip	R_{thJC}		Wärmeleitpaste Dicke≤50um $\lambda = 0,61 \text{ W/mK}$					1,8		K/W

flowPIM® 1, 600V
Characteristic values/ Charakteristische Werte

Description	Symbol	Conditions					Datasheet values			Unit
		T(°C)	Other conditions (Rgon-Rgoff)	V _{GE} (V) V _{GS} (V)	V _R (V) V _{CE} (V) V _{DS} (V)	I _C (A) I _F (A) I _d (A)	Min	Typ	Max	

Diode BRC
Diode BRC

Diode forward voltage Durchlaßspannung	V _F	T _J =25°C T _J =125°C				5	1	1,54 1,17	2,2	V
Reverse current Sperrstrom	I _r	T _J =25°C			600				0,06	µA
Peak reverse recovery current Rückstromspitze	I _{RM}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		10,6		A
Reverse recovery time Sperreverzögerungszeit	t _{rr}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		63		ns
Reverse recovered charge Sperrverzögerungsladung	Q _{rr}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		0,342		µC
Reverse recovered energy Sperrverzögerungsenergie	E _{rec}	T _J =25°C T _J =125°C	Rgon=64 Ohm	15	300	5		0,053		mWs
Thermal resistance chip to heatsink per chip Wärmewiderstand Chip-Kühlkörper pro Chip	R _{thJH}		Thermal grease thickness≤50µm					3,4		K/W
Thermal resistance chip to case per chip Wärmewiderstand Chip-Gehäuse pro Chip	R _{thJC}		Wärmeleitpaste Dicke≤50µm λ = 0,61 W/mK					2,25		K/W

NTC-Thermistor
NTC-Widerstand

Rated resistance Nennwiderstand	R ₂₅	TC=25°C	Tol. ±5%				4,2	4,7	5,3	kOhm
Deviation of R100 Abweichung von R100	D _{R/R}	TC=100°C						2,56		%/K
Power dissipation given Epcos-Typ Verlustleistung Epcos-Typ angeben	P	TC=25°C						210		mW
B-value B-Wert	B _(25/100)		Tol. ±3%					3530		K

flowPIM®1, 600V

Output inverter

Figure 1. Typical output characteristics

Output inverter IGBT

$I_c = f(V_{CE})$

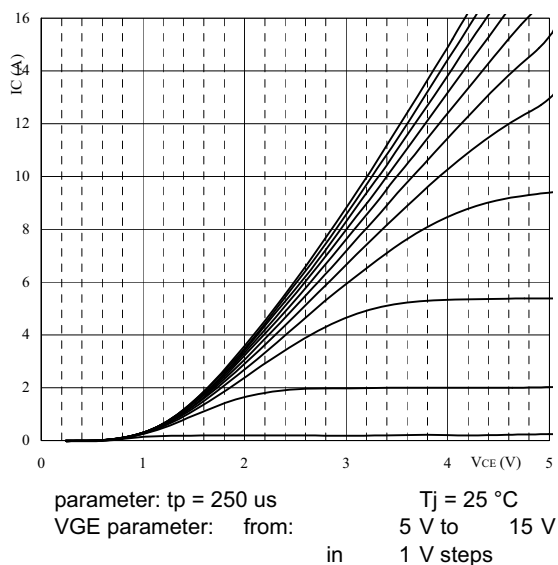


Figure 2. Typical output characteristics

Output inverter IGBT

$I_c = f(V_{CE})$

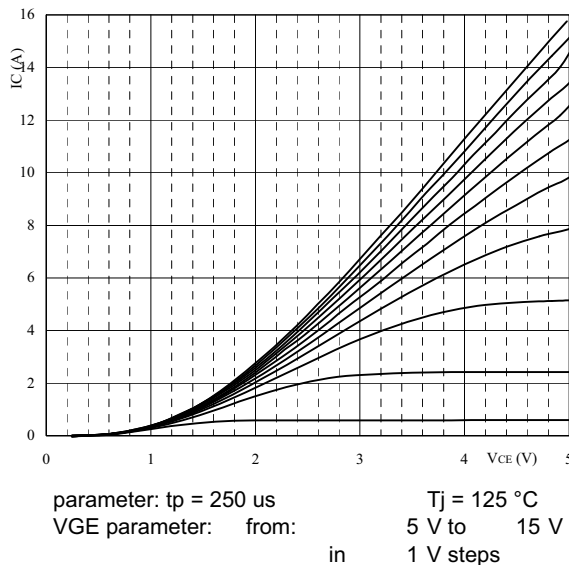


Figure 3. Typical transfer characteristics

Output inverter IGBT

$I_c = f(V_{GE})$

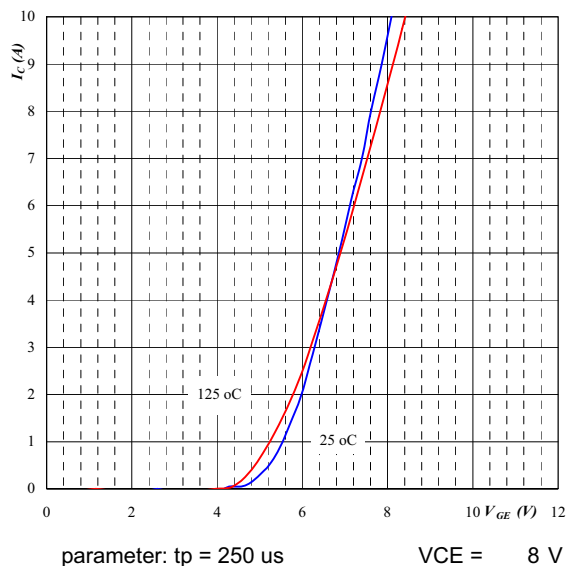
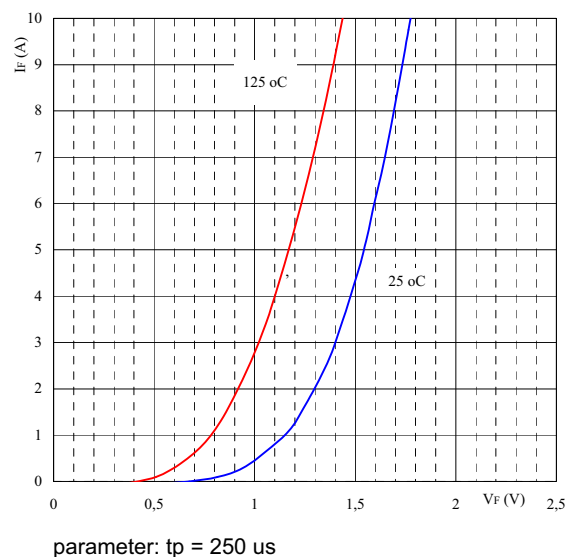


Figure 4. Typical diode forward current as a function of forward voltage

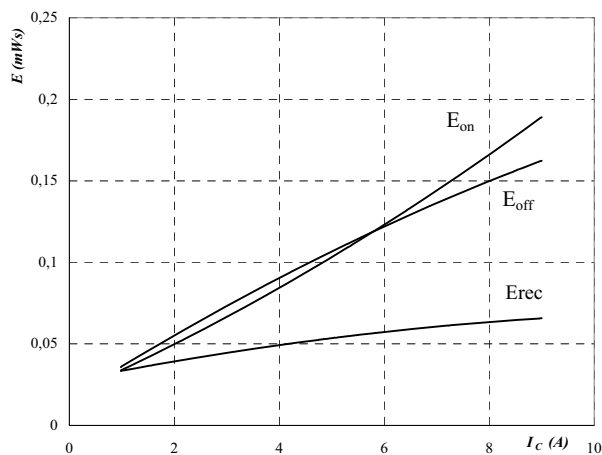
Output inverter FRED $I_F = f(V_F)$



flowPIM[®]1, 600V

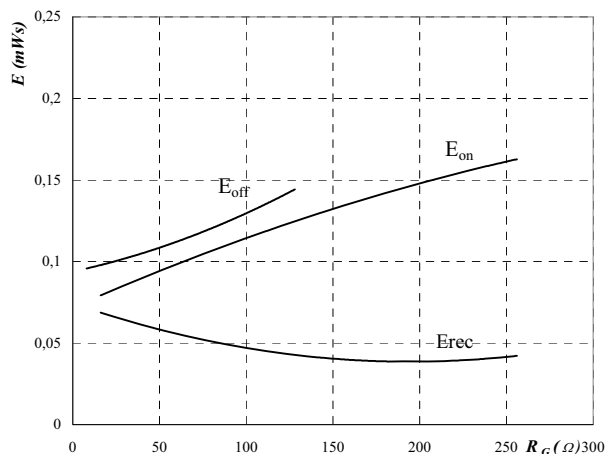
Output inverter

Figure 5. Typical switching energy losses as a function of collector current
Output inverter IGBT
 $E = f(I_c)$



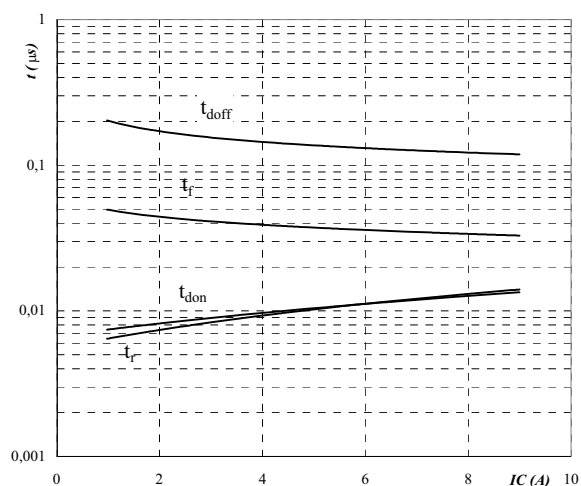
inductive load, $T_j = 125^\circ\text{C}$
VCE = 300 V
VGE = 15 V
 $R_{Gon} = 2 \cdot R_{Goff} = 64 \text{ W}$

Figure 6. Typical switching energy losses as a function of gate resistor
Output inverter IGBT
 $E = f(R_G)$



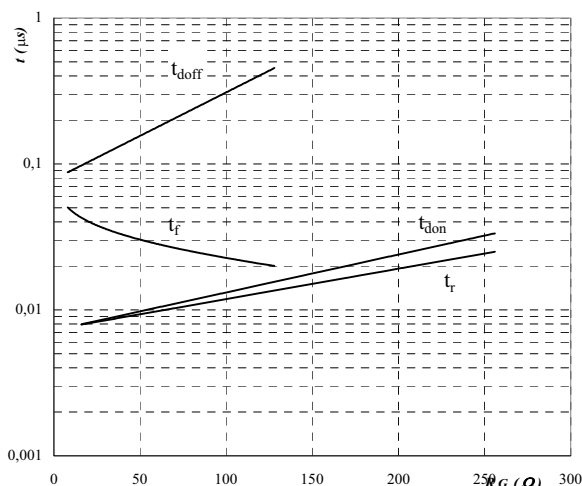
inductive load, $T_j = 125^\circ\text{C}$
VCE = 300 V
VGE = 15 V
 $I_c = 5 \text{ A}$

Figure 7. Typical switching times as a function of collector current
Output inverter IGBT
 $t = f(I_c)$



inductive load, $T_j = 125^\circ\text{C}$
VCE = 300 V
VGE = 15 V
 $R_{Gon} = 2 \cdot R_{Goff} = 64 \text{ W}$

Figure 8. Typical switching times as a function of gate resistor
Output inverter IGBT
 $t = f(R_G)$



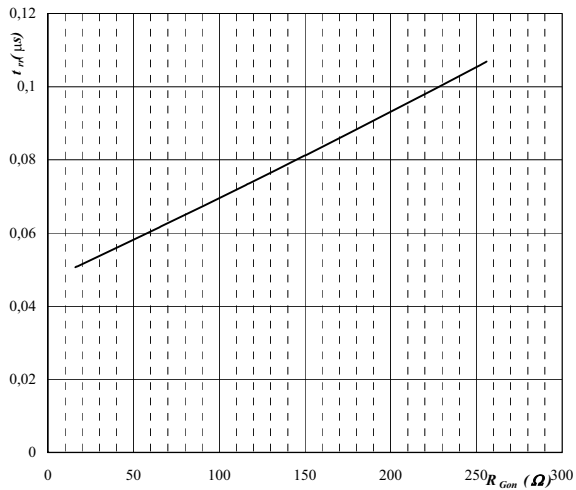
inductive load, $T_j = 125^\circ\text{C}$
VCE = 300 V
VGE = 15 V
 $I_c = 5 \text{ A}$

Output inverter

Figure 9. Typical reverse recovery time as a function of IGBT turn on gate resistor

Output inverter FRED diode

$t_{rr} = f(R_{gon})$

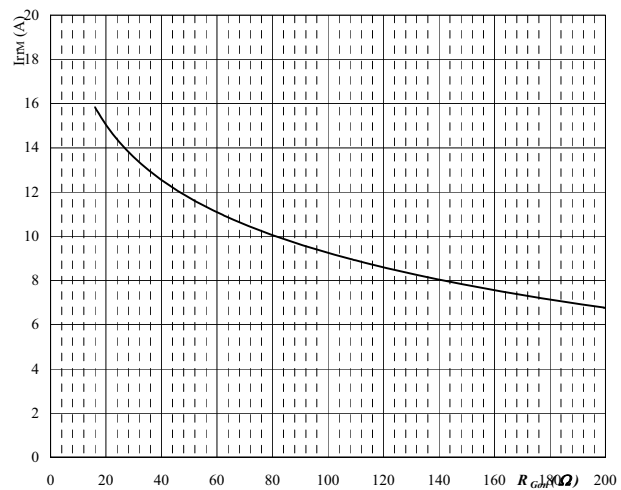


$T_j = 125\text{ }^{\circ}\text{C}$
 $V_R = 300\text{ V}$
 $I_F = 5\text{ A}$

Figure 10. Typical reverse recovery current as a function of IGBT turn on gate resistor

Output inverter FRED diode

$I_{RRM} = f(R_{gon})$

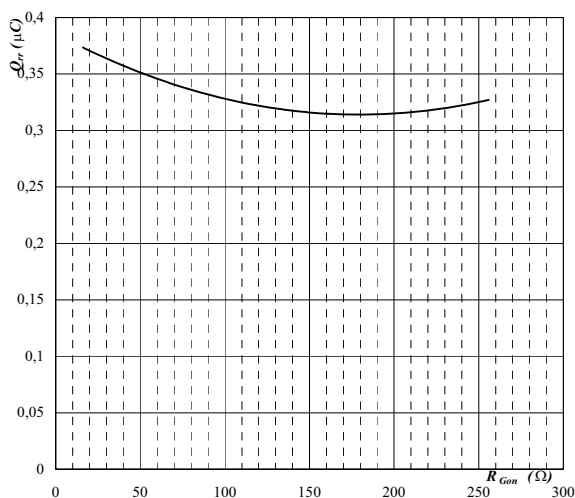


$T_j = 125\text{ }^{\circ}\text{C}$
 $V_R = 300\text{ V}$
 $I_F = 5\text{ A}$

Figure 11. Typical reverse recovery charge as a function of IGBT turn on gate resistor

Output inverter FRED diode

$Q_{rr} = f(R_{gon})$

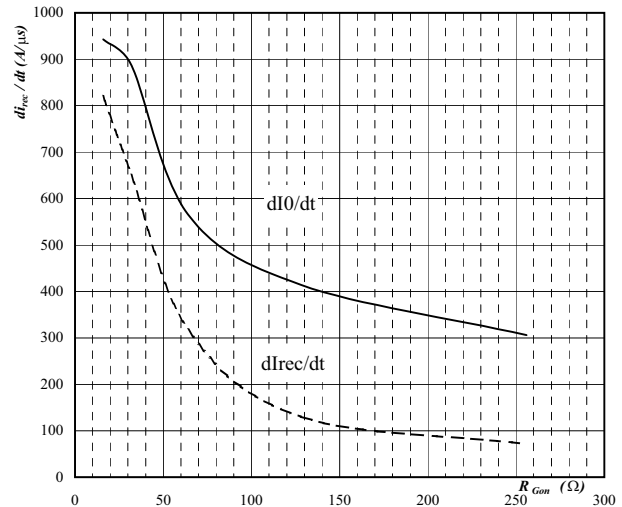


$T_j = 125\text{ }^{\circ}\text{C}$
 $V_R = 300\text{ V}$
 $I_F = 5\text{ A}$

Figure 12. Typical rate of fall of forward and reverse recovery current as a function of IGBT turn on gate resistor

Output inverter FRED diode

$dI_0/dt, dI_{rec}/dt = f(R_{gon})$

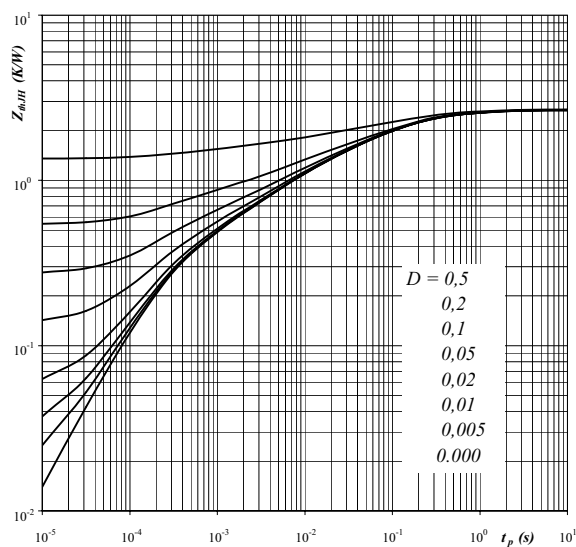


$T_j = 125\text{ }^{\circ}\text{C}$
 $V_R = 300\text{ V}$
 $I_F = 5\text{ A}$

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Output inverter

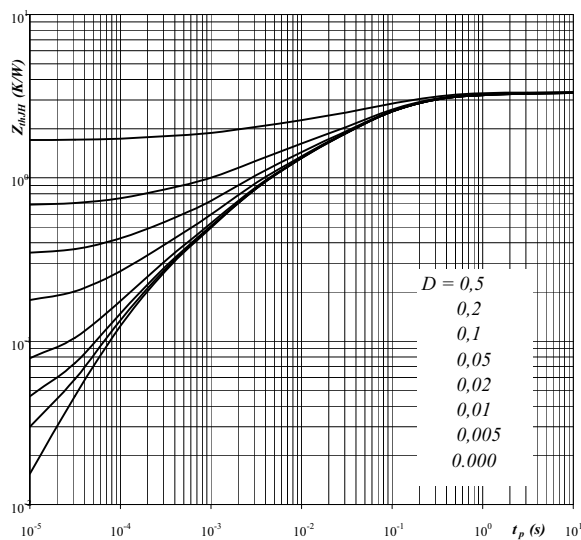
Figure 13. IGBT transient thermal impedance as a function of pulse width
 $Z_{thJH} = f(t_p)$


Parameter: $D = t_p / T$
 $R_{thJH} = 2,7 \text{ K/W}$

IGBT thermal model values

R (C/W)	Tau (s)
0,05	5,3E+01
0,19	1,3E+00
0,80	1,7E-01
0,61	3,9E-02
0,55	7,2E-03
0,26	1,1E-03
0,25	2,2E-04

Figure 14. FRED transient thermal impedance as a function of pulse width
 $Z_{thJH} = f(t_p)$


Parameter: $D = t_p / T$
 $R_{thJH} = 3,4 \text{ K/W}$

FRED thermal model values

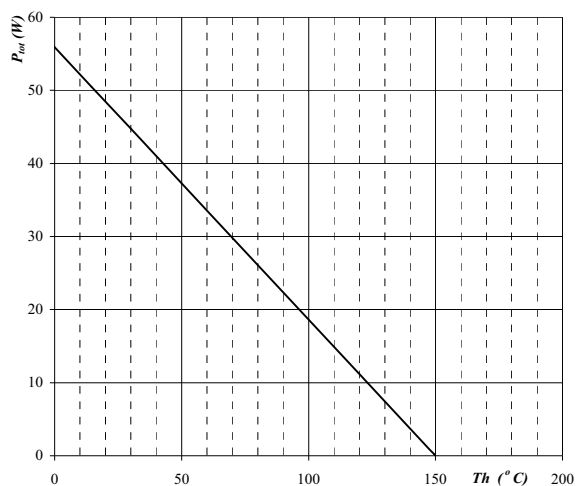
R (C/W)	Tau (s)
0,10	1,2E+02
0,16	1,6E+00
0,84	1,8E-01
1,09	4,6E-02
0,64	6,9E-03
0,42	1,3E-03
0,16	1,4E-04

flowPIM®1, 600V

Output inverter

Figure 15. Power dissipation as a function of heatsink temperature

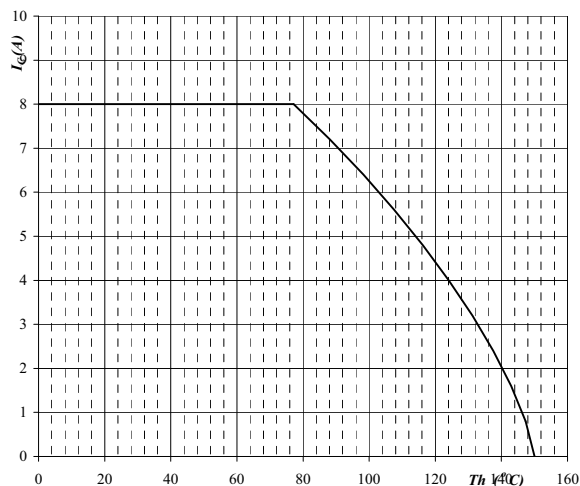
Output inverter IGBT
 $P_{tot} = f(T_h)$



parameter: $T_j = 150^{\circ}C$

Figure 16. Collector current as a function of heatsink temperature

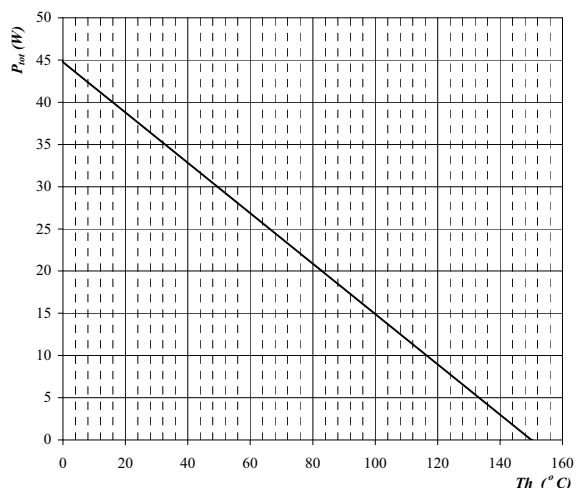
Output inverter IGBT
 $I_c = f(T_h)$



parameter: $T_j = 150^{\circ}C$
 $V_{GE} = 15 V$

Figure 17. Power dissipation as a function of heatsink temperature

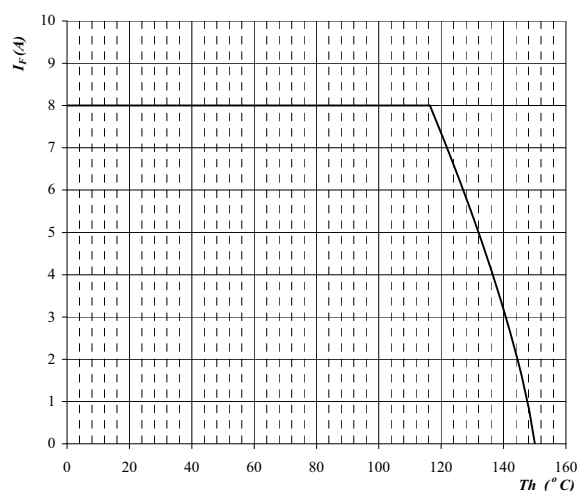
Output inverter FRED
 $P_{tot} = f(T_h)$



parameter: $T_j = 150^{\circ}C$

Figure 18. Forward current as a function of heatsink temperature

Output inverter FRED
 $I_F = f(T_h)$



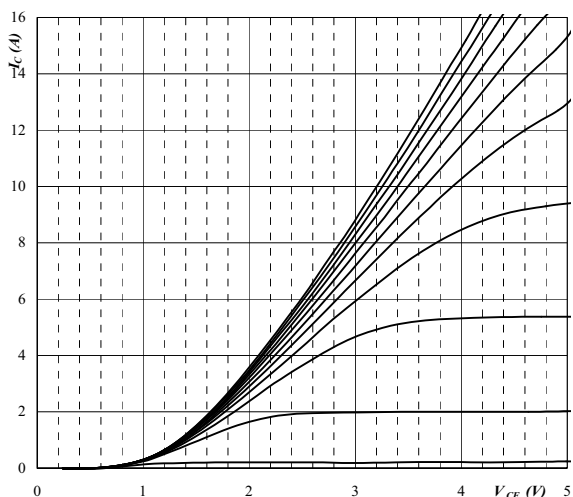
parameter: $T_j = 150^{\circ}C$

Brake

Figure 19. Typical output characteristics

Brake IGBT

$I_c = f(V_{CE})$



parameter: $t_p = 250 \text{ us}$

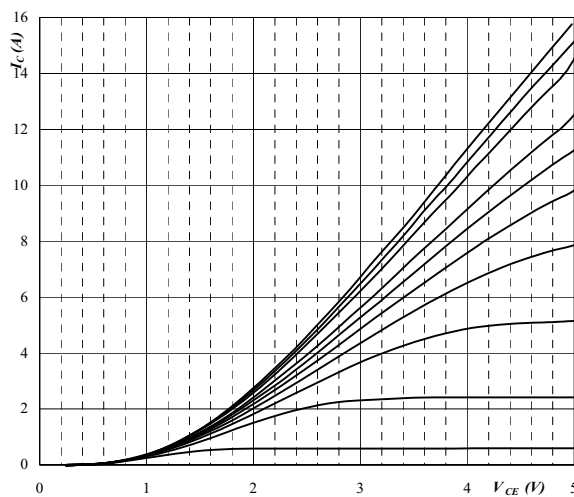
$T_j = 25 \text{ °C}$

VGE parameter: from: 5 V to 15 V
in 1 V steps

Figure 20. Typical output characteristics

Brake IGBT

$I_c = f(V_{CE})$



parameter: $t_p = 250 \text{ us}$

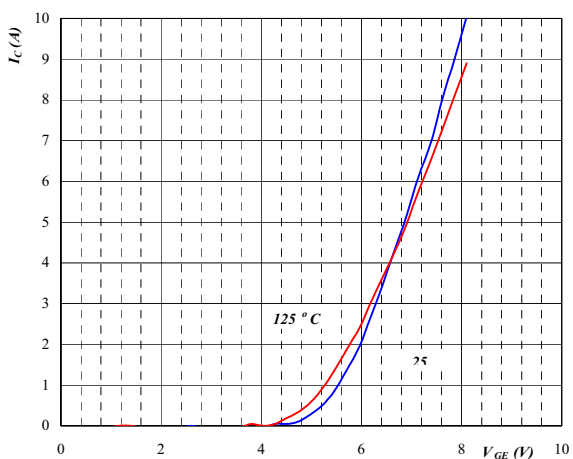
$T_j = 125 \text{ °C}$

VGE parameter: from: 5 V to 15 V
in 1 V steps

Figure 21. Typical transfer characteristics

Brake IGBT

$I_c = f(V_{GE})$



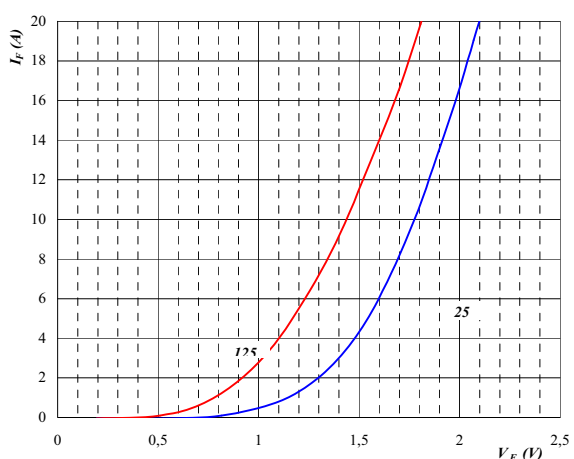
parameter: $t_p = 250 \text{ us}$

$V_{CE} = 10 \text{ V}$

Figure 22. Typical diode forward current as a function of forward voltage

Brake FRED

$I_F = f(V_F)$



parameter: $t_p = 250 \text{ us}$

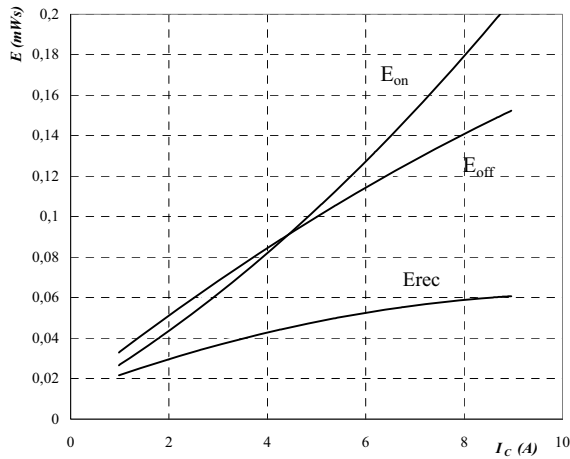
flowPIM®1, 600V

Brake

Figure 23. Typical switching energy losses as a function of collector current

Brake IGBT

$$E = f(I_c)$$



inductive load, $T_j = 125^\circ\text{C}$

VCE = 300 V

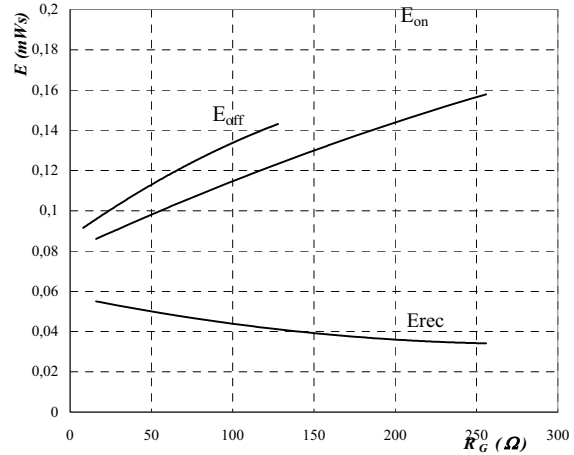
VGE = 15 V

$$R_{Gon} = 2 \cdot R_{Goff} = 64$$

Figure 24. Typical switching energy losses as a function of gate resistor

Brake IGBT

$$E = f(R_G)$$



inductive load, $T_j = 125^\circ\text{C}$

VCE = 300 V

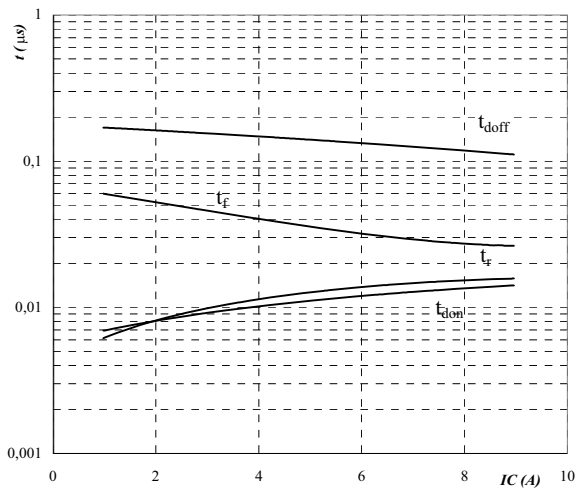
VGE = 15 V

$$I_c = 5 \text{ A}$$

Figure 25. Typical switching times as a function of collector current

Brake IGBT

$$t = f(I_c)$$



inductive load, $T_j = 125^\circ\text{C}$

VCE = 300 V

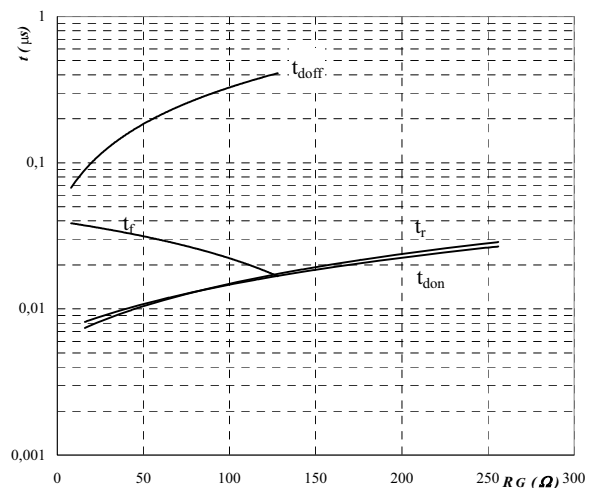
VGE = 15 V

$$R_{Gon} = 2 \cdot R_{Goff} = 64 \text{ W}$$

Figure 26. Typical switching times as a function of gate resistor

Brake IGBT

$$t = f(R_G)$$



inductive load, $T_j = 125^\circ\text{C}$

VCE = 300 V

VGE = 15 V

$$I_c = 5 \text{ A}$$

flowPIM®1, 600V

Brake

Figure 27. IGBT transient thermal impedance as a function of pulse width
 $Z_{thJH} = f(t_p)$

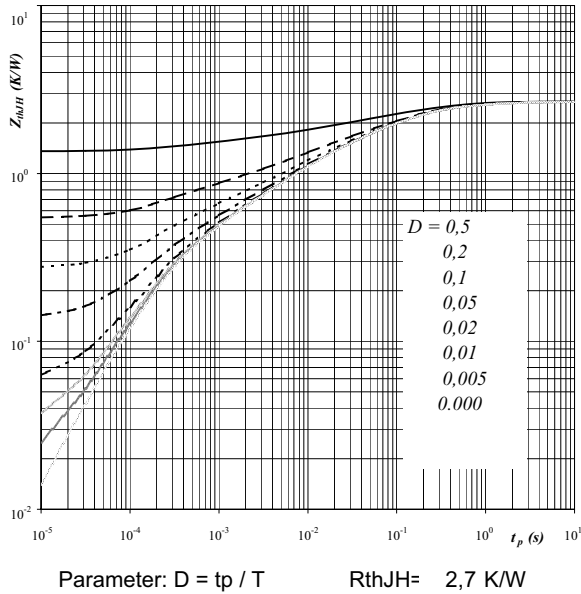


Figure 28. FRED transient thermal impedance as a function of pulse width
 $Z_{thJH} = f(t_p)$

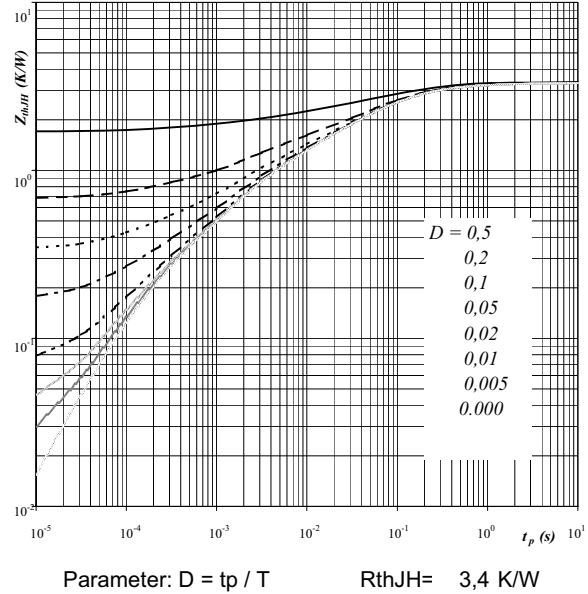


Figure 29. Power dissipation as a function of heatsink temperature
Brake IGBT
 $P_{tot} = f(T_h)$

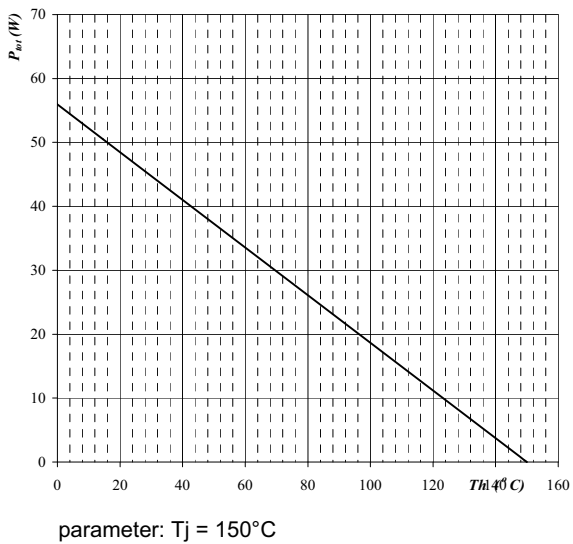
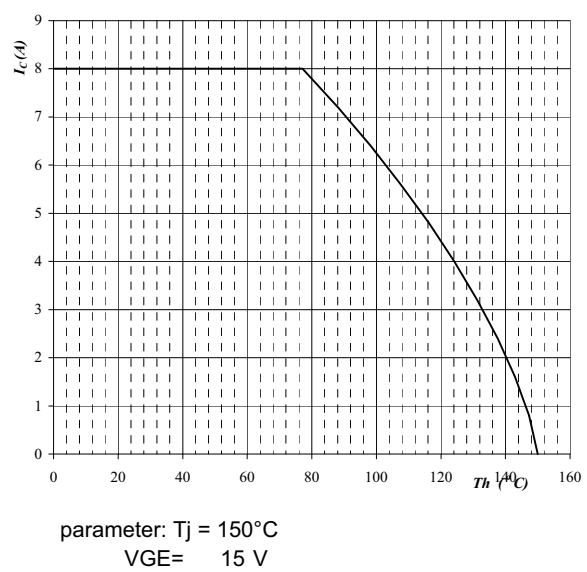


Figure 30. Collector current as a function of heatsink temperature
Brake IGBT
 $I_c = f(T_h)$



flowPIM®1, 600V

Brake

Figure 31. Power dissipation as a function of heatsink temperature
Brake FRED
 $P_{tot} = f(T_h)$

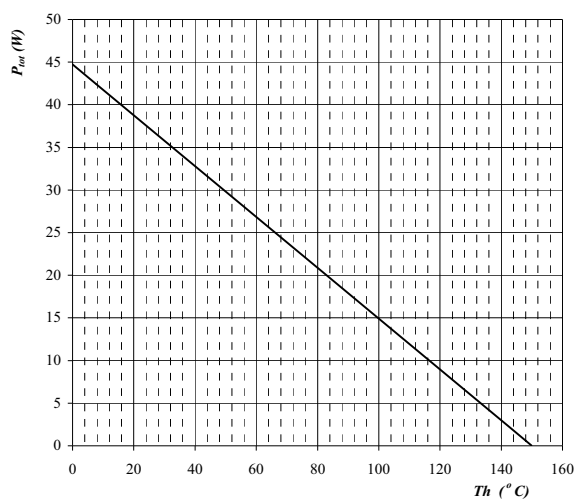
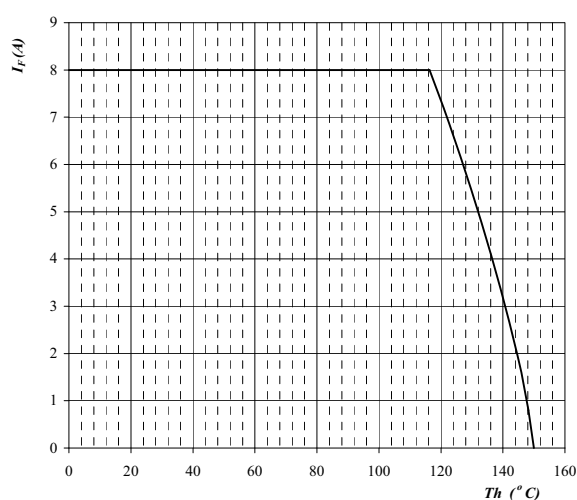

parameter: $T_j = 150^{\circ}\text{C}$

Figure 32. Forward current as a function of heatsink temperature
Brake FRED
 $I_F = f(T_h)$

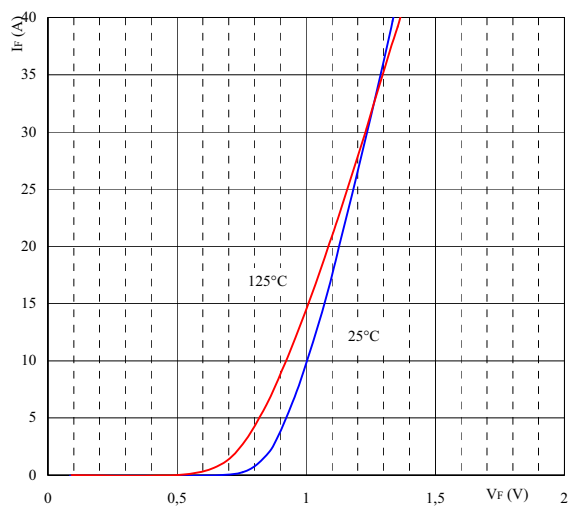

parameter: $T_j = 150^{\circ}\text{C}$

flowPIM®1, 600V

Input rectifier bridge

Figure 33. Typical diode forward current as a function of forward voltage

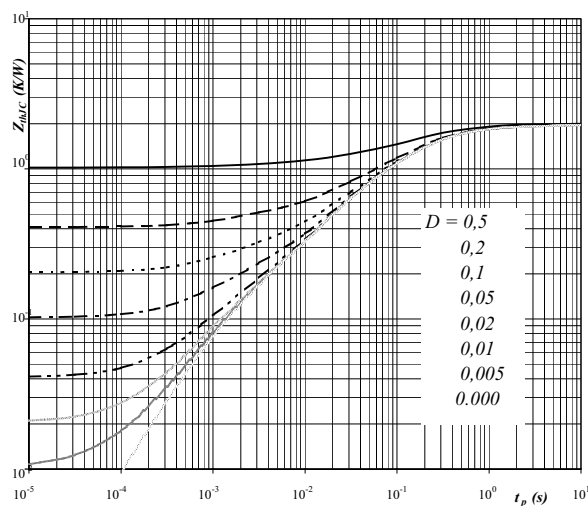
Rectifier diode $I_F = f(V_F)$



parameter: $t_p = 250 \text{ us}$

Figure 34. Diode transient thermal impedance as a function of pulse width

$Z_{thJH} = f(t_p)$



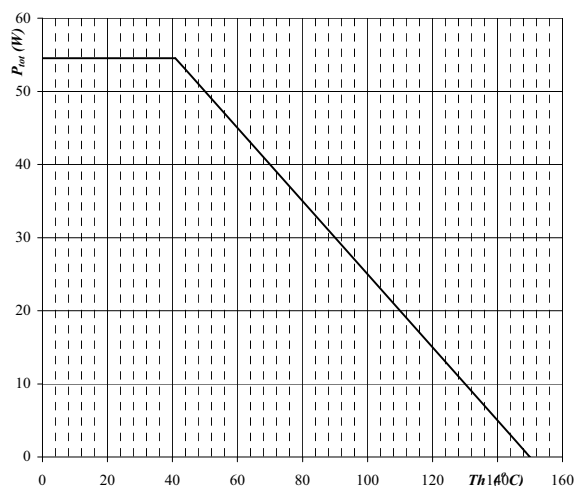
Parameter: $D = t_p / T$

$R_{thJH} = 2,0 \text{ K/W}$

Figure 35. Power dissipation as a function of heatsink temperature

Rectifier diode

$P_{tot} = f(T_h)$

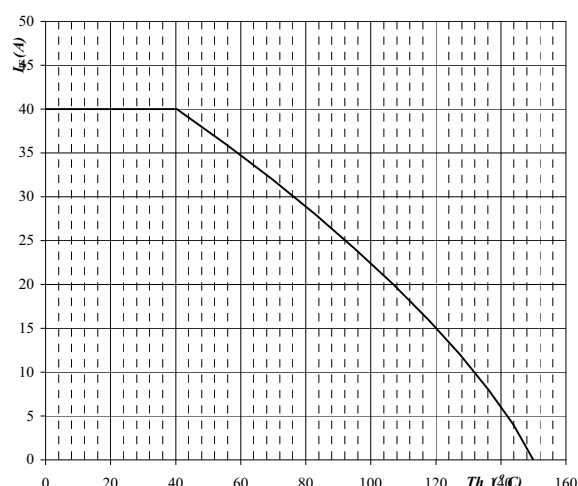


parameter: $T_j = 150^\circ\text{C}$

Figure 36. Forward current as a function of heatsink temperature

Rectifier diode

$I_F = f(T_h)$



parameter: $T_j = 150^\circ\text{C}$

flowPIM[®]1, 600V

Thermistor

**Figure 37. Typical NTC characteristic
as a function of temperature**

$$R_T = f(T)$$

