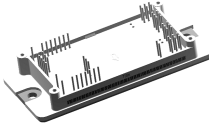
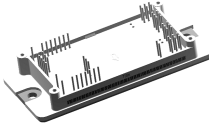
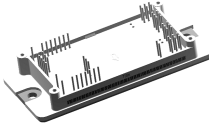
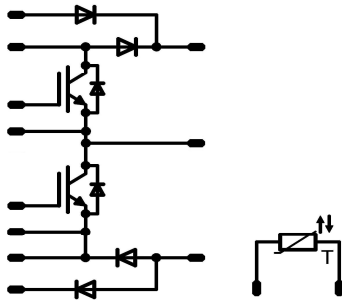
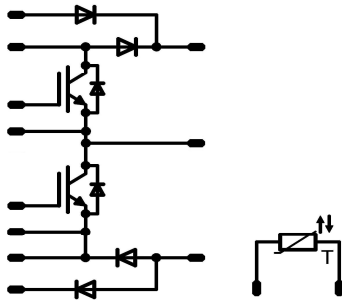
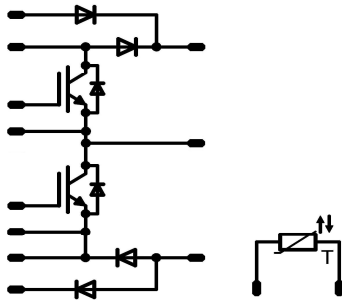


<i>flow</i> BOOST 2	600 V/200 A				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #000080; color: white;"> <th style="padding: 2px;">Features</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> High efficiency symmetric boost Ultra fast switching frequency Low Inductance Layout </td> </tr> </table>	Features	<ul style="list-style-type: none"> High efficiency symmetric boost Ultra fast switching frequency Low Inductance Layout 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #000080; color: white;"> <th style="padding: 2px;">flow 2 12 mm housing</th> </tr> <tr> <td style="text-align: center; padding: 10px;">  </td> </tr> </table>	flow 2 12 mm housing	
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<ul style="list-style-type: none"> High efficiency symmetric boost Ultra fast switching frequency Low Inductance Layout 					
flow 2 12 mm housing					
					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #000080; color: white;"> <th style="padding: 2px;">Target Applications</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> solar inverter </td> </tr> </table>	Target Applications	<ul style="list-style-type: none"> solar inverter 	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #000080; color: white;"> <th style="padding: 2px;">Schematic</th> </tr> <tr> <td style="text-align: center; padding: 10px;">  </td> </tr> </table>	Schematic	
Target Applications					
<ul style="list-style-type: none"> solar inverter 					
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #000080; color: white;"> <th style="padding: 2px;">Types</th> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> 30-F206NBA200SA-M235L33 </td> </tr> </table>	Types	<ul style="list-style-type: none"> 30-F206NBA200SA-M235L33 			
Types					
<ul style="list-style-type: none"> 30-F206NBA200SA-M235L33 					

Maximum Ratings

$T_j=25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
Bypass Diode				
Repetitive peak reverse voltage	V_{RRM}		1600	V
Forward current per diode *	I_{FAV}	DC current	$T_h=80^{\circ}\text{C}$ 245	A
Surge forward current	I_{FSM}	$t_p=10\text{ms, sin } 180^{\circ}$	$T_j=150^{\circ}\text{C}$	1650
I^2t -value	I^2t			13600
Power dissipation per Diode *	P_{tot}	$T_j=T_{jmax}$	$T_h=80^{\circ}\text{C}$ 356	W
Maximum Junction Temperature	T_{jmax}		150	$^{\circ}\text{C}$

* measured with phase-change material

Input Boost IGBT				
Collector-emitter break down voltage	V_{CE}		600	V
DC collector current *	I_C	$T_j=T_{jmax}$	$T_h=80^{\circ}\text{C}$ 241	A
Repetitive peak collector current	I_{Cpulse}	t_p limited by T_{jmax}	600	A
Power dissipation per IGBT *	P_{tot}	$T_j=T_{jmax}$	$T_h=80^{\circ}\text{C}$ 514	W
Gate-emitter peak voltage	V_{GE}		± 20	V
Short circuit ratings	t_{SC} V_{CC}	$T_j \leq 150^{\circ}\text{C}$ $V_{GE}=15\text{V}$	6 360	μs V
Maximum Junction Temperature	T_{jmax}		175	$^{\circ}\text{C}$

* measured with phase-change material

Maximum Ratings

$T_j=25^{\circ}\text{C}$, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
-----------	--------	-----------	-------	------

Input Boost Inverse Diode

Peak Repetitive Reverse Voltage	V_{RRM}		600	V
DC forward current *	I_F	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	99 130	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	200	A
Power dissipation per Diode *	P_{tot}	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	169 257	W
Maximum Junction Temperature	T_{jmax}		175	$^{\circ}\text{C}$

* measured with phase-change material

Input Boost Diode

Peak Repetitive Reverse Voltage	V_{RRM}		600	V
DC forward current *	I_F	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	147 187	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}	400	A
Power dissipation *	P_{tot}	$T_j=T_{jmax}$ $T_h=80^{\circ}\text{C}$ $T_c=80^{\circ}\text{C}$	231 350	W
Maximum Junction Temperature	T_{jmax}		175	$^{\circ}\text{C}$

* measured with phase-change material

Thermal Properties

Storage temperature	T_{slg}		-40...+125	$^{\circ}\text{C}$
Operation temperature under switching condition	T_{op}		-40...+($T_{jmax} - 25$)	$^{\circ}\text{C}$

Insulation Properties

Insulation voltage	V_{is}	$t=2\text{s}$ DC voltage	4000	V
Creepage distance			min 12,7	mm
Clearance			min 12,7	mm

Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
		$V_{GE}[V]$ or $V_{GS}[V]$	$V_r[V]$ or $V_{CE}[V]$ or $V_{DS}[V]$	$I_c[A]$ or $I_F[A]$ or $I_b[A]$	T_j	Min	Typ	Max		
Bypass Diode										
Forward voltage	V_F				135	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$		1,19 1,15	1,4	V
Threshold voltage (for power loss calc. only)	V_{to}				135	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$		0,90 0,78		V
Slope resistance (for power loss calc. only)	r_t				135	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$		0,002 0,003		Ω
Reverse current	I_r			1600		$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$			0,1	mA
Thermal resistance chip to heatsink per chip	R_{thJH}	Phase-Change Material						0,30		K/W
Thermal resistance chip to heatsink per chip	R_{thJH}	Thermal grease thickness \leq 50um $\lambda = 1 \text{ W/mK}$						0,35		K/W
Input Boost IGBT										
Gate emitter threshold voltage	$V_{GE(th)}$				0,0032	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$	5	5,8	6,5	V
Collector-emitter saturation voltage	$V_{CE(sat)}$		15		200	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$	1,05	1,65 1,87	1,85	V
Collector-emitter cut-off	I_{CES}		0	600		$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$			0,010	mA
Gate-emitter leakage current	I_{GES}		20	0		$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$			2400	nA
Integrated Gate resistor	R_{gint}							none		Ω
Turn-on delay time	$t_{d(on)}$	Rgoff=2 Ω Rgon=2 Ω	15	350	200	$T_j=25^\circ\text{C}$		49		ns
Rise time	t_r					$T_j=125^\circ\text{C}$		49		
Turn-off delay time	$t_{d(off)}$					$T_j=25^\circ\text{C}$		35		
Fall time	t_f					$T_j=125^\circ\text{C}$		37		
Turn-on energy loss per pulse	E_{on}					$T_j=25^\circ\text{C}$		422		
Turn-off energy loss per pulse	E_{off}					$T_j=125^\circ\text{C}$		451		
Input capacitance	C_{ies}	f=1MHz	0	25		$T_j=25^\circ\text{C}$		12560		pF
Output capacitance	C_{oes}							800		
Reverse transfer capacitance	C_{res}							372		
Gate charge	Q_{Gate}		15	480	200	$T_j=25^\circ\text{C}$		1240		nC
Thermal resistance chip to heatsink per chip	R_{thJH}	Phase-Change Material						0,28		K/W
Thermal resistance chip to heatsink per chip	R_{thJH}	Thermal grease thickness \leq 50um $\lambda = 1 \text{ W/mK}$						0,33		K/W
Input Boost Inverse Diode										
Diode forward voltage	V_F				100	$T_j=25^\circ\text{C}$ $T_j=125^\circ\text{C}$	1,2	1,78 1,74	1,9	V
Thermal resistance chip to heatsink per chip	R_{thJH}	Phase-Change Material						0,56		K/W
Thermal resistance chip to heatsink per chip	R_{thJH}	Thermal grease thickness \leq 50um $\lambda = 1 \text{ W/mK}$						0,66		K/W

Characteristic Values

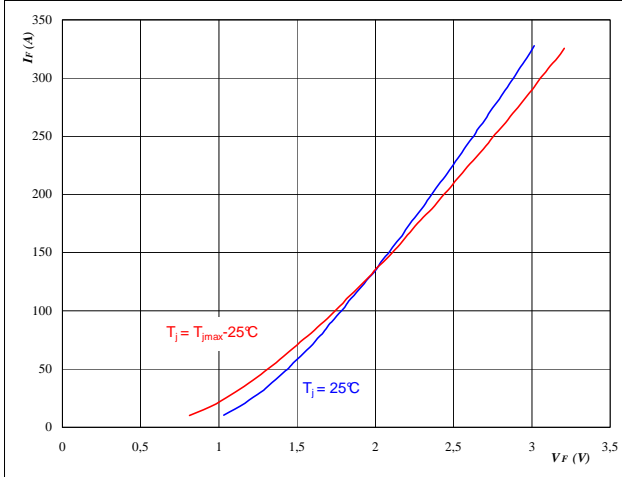
Parameter	Symbol	Conditions					Value			Unit
		$V_{GE}[V]$ or $V_{GS}[V]$	$V_r[V]$ or $V_{CE}[V]$ or $V_{DS}[V]$	$I_c[A]$ or $I_F[A]$ or $I_b[A]$	T_j	Min	Typ	Max		
Input Boost Diode										
Forward voltage	V_F				200	$T_j=25^\circ C$ $T_j=125^\circ C$	1	1,88 1,83	2	V
Reverse leakage current	I_{rm}		15	350	200	$T_j=25^\circ C$ $T_j=125^\circ C$			108	μA
Peak recovery current	I_{RRM}	Rgon=2 Ω	15	350	200	$T_j=25^\circ C$ $T_j=125^\circ C$		118 179		A
Reverse recovery time	t_{rr}					$T_j=25^\circ C$ $T_j=125^\circ C$		120 148		ns
Reverse recovery charge	Q_{rr}					$T_j=25^\circ C$ $T_j=125^\circ C$		8,06 15,59		μC
Reverse recovered energy	E_{rec}					$T_j=25^\circ C$ $T_j=125^\circ C$		2,03 4,00		mWs
Peak rate of fall of recovery current	$di(rec)max/dt$					$T_j=25^\circ C$		1029		$A/\mu s$
						$T_j=125^\circ C$		1886		
Thermal resistance chip to heatsink per chip	R_{thJH}	Phase-Change Material						0,41		K/W
Thermal resistance chip to case per chip	R_{thJC}	Thermal grease thickness $\leq 50\mu m$ $\lambda = 1 W/mK$						0,48		K/W
Thermistor										
Rated resistance	R					$T_j=25^\circ C$		22000		Ω
Deviation of R25	$\Delta R/R$	R100=1486 Ω				$T_c=100^\circ C$	-5		+5	%
Power dissipation	P					$T_j=25^\circ C$		200		mW
Power dissipation constant						$T_j=25^\circ C$		2		mW/K
B-value	$B_{(25/50)}$	Tol. $\pm 3\%$				$T_j=25^\circ C$		3950		K
B-value	$B_{(25/100)}$	Tol. $\pm 3\%$				$T_j=25^\circ C$		3996		K
Vincotech NTC Reference						$T_j=25^\circ C$			B	

Input BOOST Inverse Diode

Figure 25 Boost Inverse Diode

Typical diode forward current as a function of forward voltage

$$I_F = f(V_F)$$

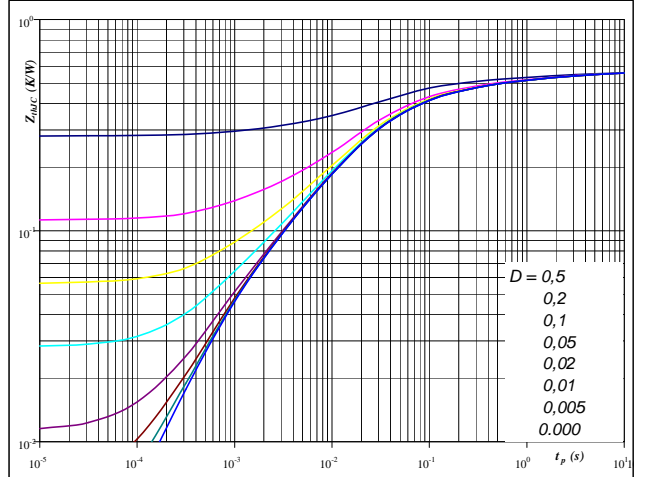


At
 $t_p = 350 \mu s$

Figure 26 Boost Inverse Diode

Diode transient thermal impedance as a function of pulse width

$$Z_{thJH} = f(t_p)$$

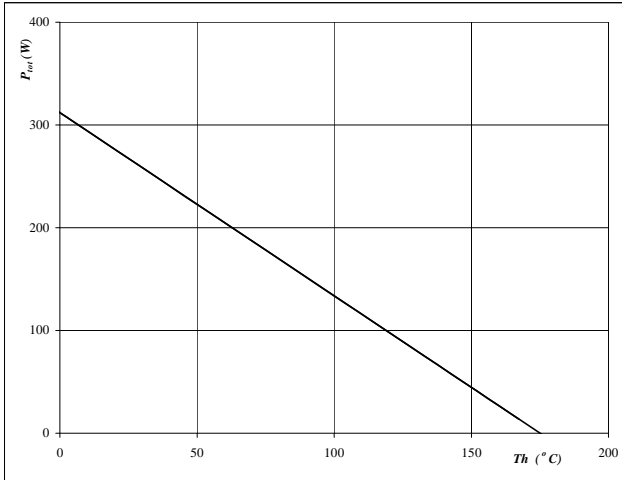


At
 $D = t_p / T$
 $R_{thJH} = 0,56 \text{ K/W}$

Figure 27 Boost Inverse Diode

Power dissipation as a function of heatsink temperature

$$P_{tot} = f(T_h)$$

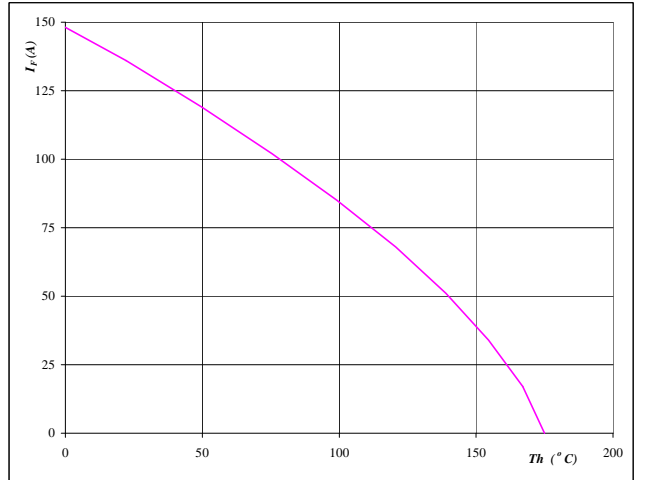


At
 $T_j = 175 \text{ } ^\circ\text{C}$

Figure 28 Boost Inverse Diode

Forward current as a function of heatsink temperature

$$I_F = f(T_h)$$

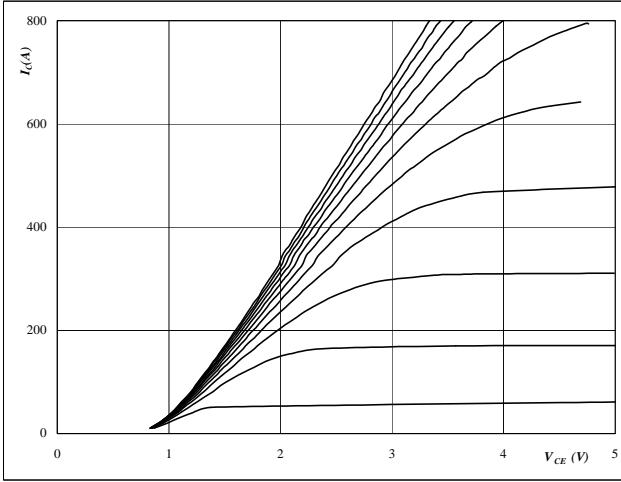


At
 $T_j = 175 \text{ } ^\circ\text{C}$

INPUT BOOST

Figure 1 BOOST IGBT
Typical output characteristics

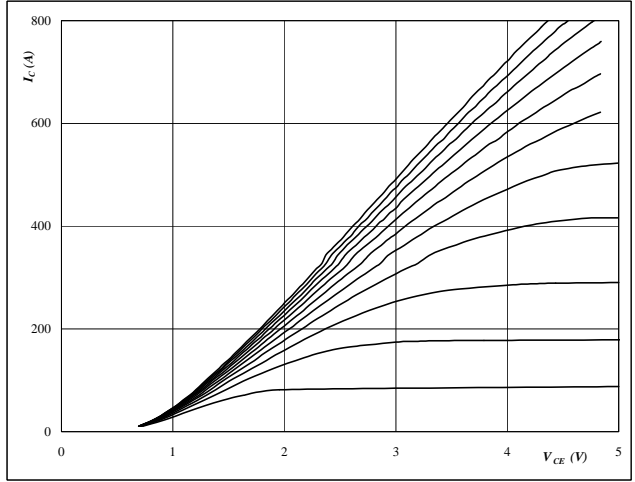
$I_D = f(V_{DS})$



At
 $t_p = 350 \mu s$
 $T_j = 25 \text{ } ^\circ C$
 V_{GS} from 8 V to 18 V in steps of 1 V

Figure 2 BOOST IGBT
Typical output characteristics

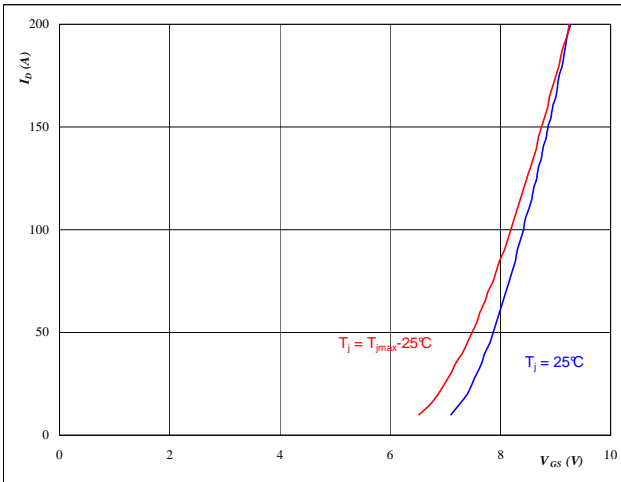
$I_D = f(V_{DS})$



At
 $t_p = 350 \mu s$
 $T_j = 125 \text{ } ^\circ C$
 V_{GS} from 8 V to 18 V in steps of 1 V

Figure 3 BOOST IGBT
Typical transfer characteristics

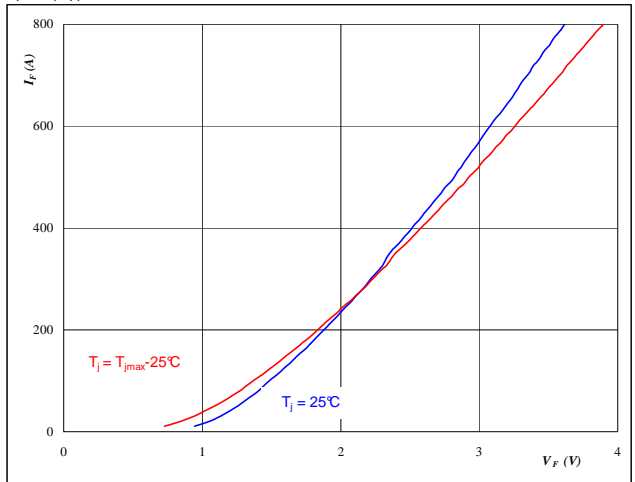
$I_D = f(V_{GS})$



At
 $t_p = 350 \mu s$
 $V_{DS} = 10 V$

Figure 4 BOOST FWD
Typical diode forward current as a function of forward voltage

$I_F = f(V_F)$



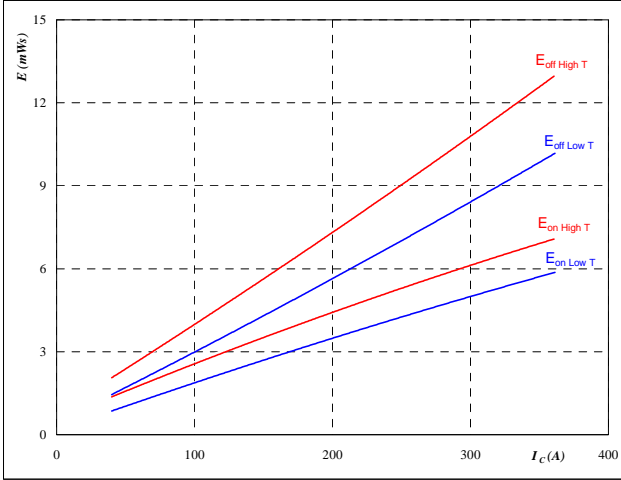
At
 $t_p = 350 \mu s$

INPUT BOOST

Figure 5 BOOST IGBT

**Typical switching energy losses
as a function of collector current**

$$E = f(I_D)$$



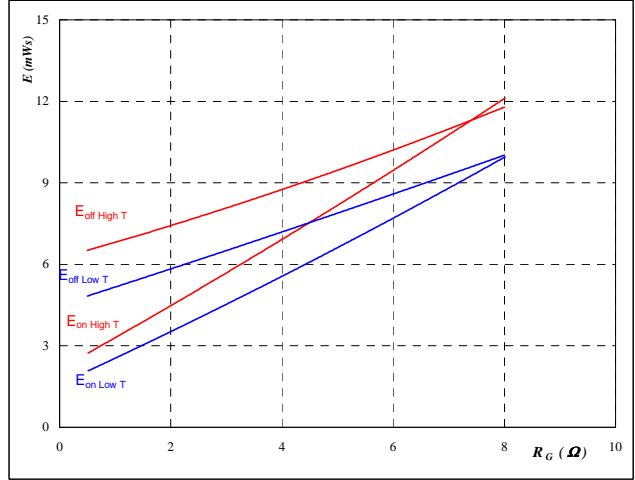
With an inductive load at

$T_J =$	25/125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$R_{gon} =$	2	Ω
$R_{goff} =$	2	Ω

Figure 6 BOOST IGBT

**Typical switching energy losses
as a function of gate resistor**

$$E = f(R_G)$$



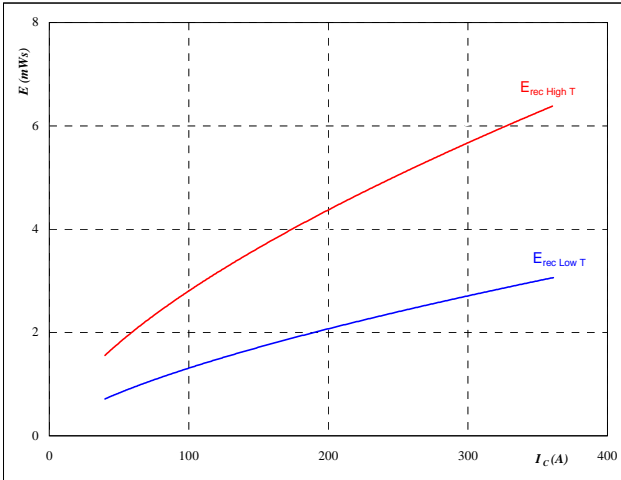
With an inductive load at

$T_J =$	25/125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$I_D =$	200	A

Figure 7 BOOST FWD

**Typical reverse recovery energy loss
as a function of collector (drain) current**

$$E_{rec} = f(I_c)$$



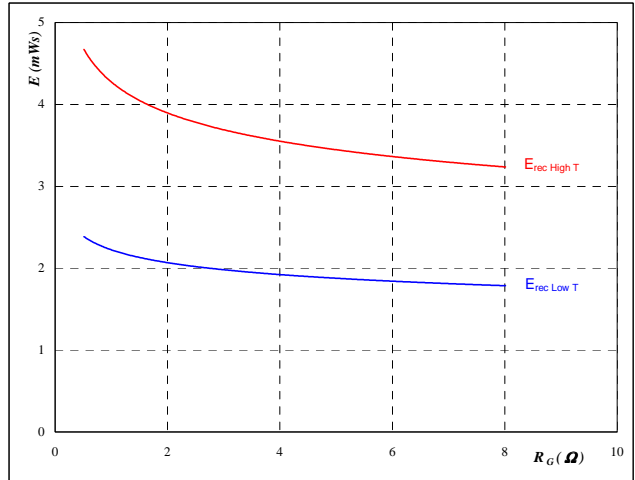
With an inductive load at

$T_J =$	25/125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$R_{gon} =$	2	Ω
$R_{goff} =$	2	Ω

Figure 8 BOOST FWD

**Typical reverse recovery energy loss
as a function of gate resistor**

$$E_{rec} = f(R_G)$$



With an inductive load at

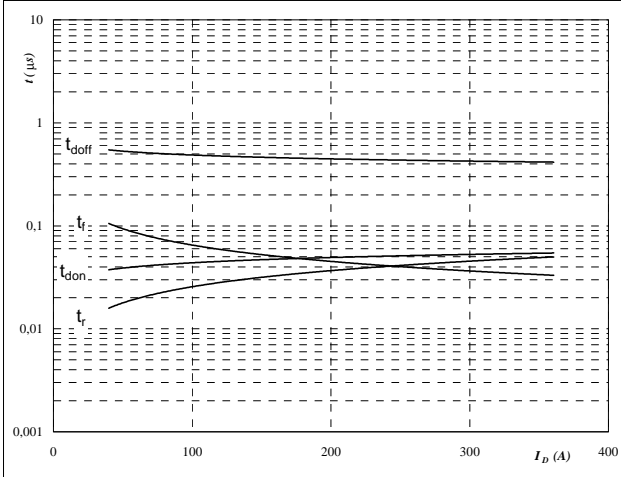
$T_J =$	25/125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$I_D =$	200	A

INPUT BOOST

Figure 9 BOOST IGBT

Typical switching times as a function of collector current

$$t = f(I_C)$$



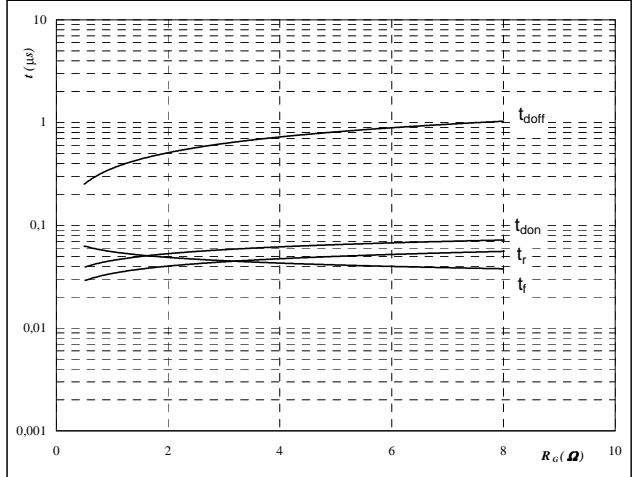
With an inductive load at

$T_J =$	125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$R_{gon} =$	2	Ω
$R_{goff} =$	2	Ω

Figure 10 BOOST IGBT

Typical switching times as a function of gate resistor

$$t = f(R_G)$$



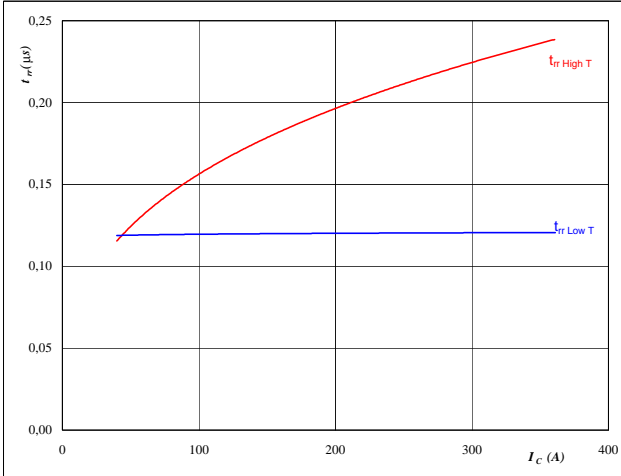
With an inductive load at

$T_J =$	125	°C
$V_{DS} =$	350	V
$V_{GS} =$	15	V
$I_C =$	200	A

Figure 11 BOOST FWD

Typical reverse recovery time as a function of collector current

$$t_{rr} = f(I_C)$$



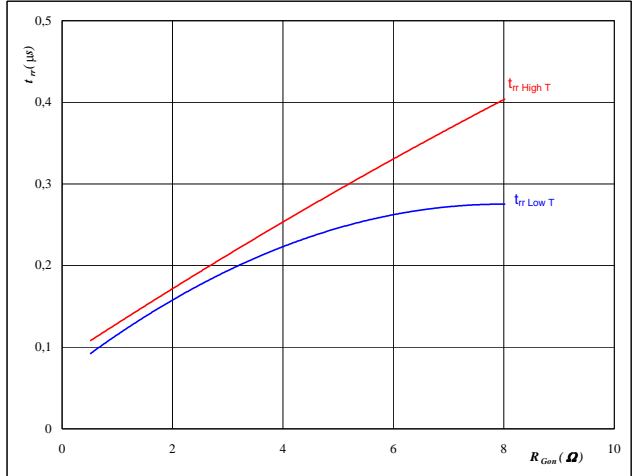
At

$T_J =$	25/125	°C
$V_{CE} =$	350	V
$V_{GE} =$	15	V
$R_{gon} =$	2	Ω

Figure 12 BOOST FWD

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

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



At

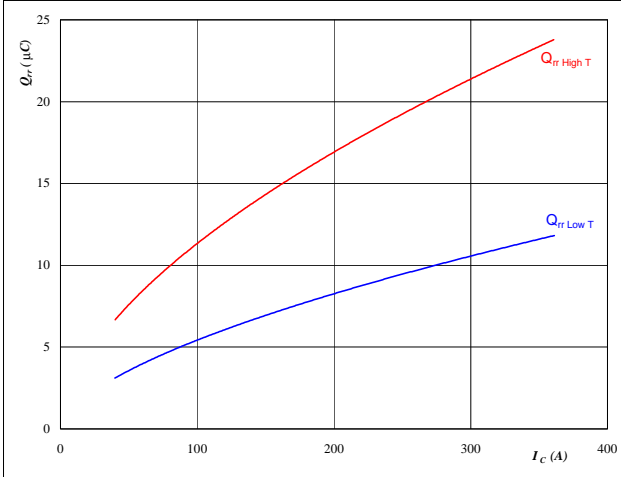
$T_J =$	25/125	°C
$V_R =$	350	V
$I_F =$	200	A
$V_{GS} =$	15	V

INPUT BOOST

Figure 13 BOOST FWD

Typical reverse recovery charge as a function of collector current

$$Q_{rr} = f(I_C)$$

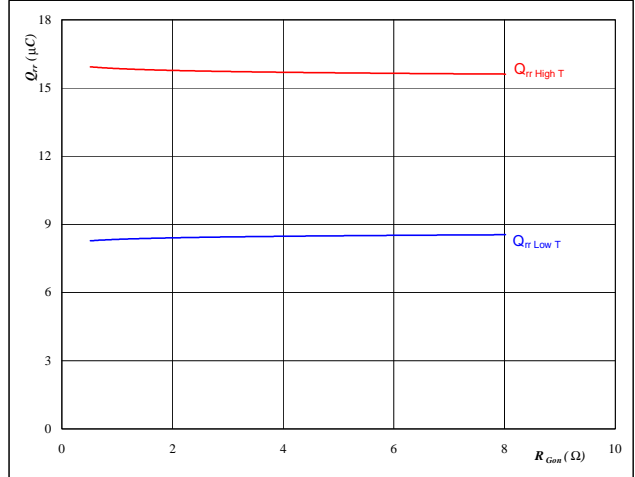


At
 $T_j = 25/125$ °C
 $V_{CE} = 350$ V
 $V_{GE} = 15$ V
 $R_{gon} = 2$ Ω

Figure 14 BOOST FWD

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

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

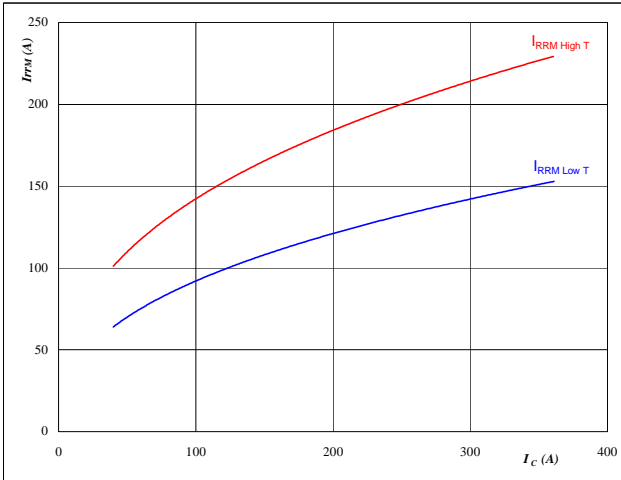


At
 $T_j = 25/125$ °C
 $V_R = 350$ V
 $I_F = 200$ A
 $V_{GS} = 15$ V

Figure 15 BOOST FWD

Typical reverse recovery current as a function of collector current

$$I_{RRM} = f(I_C)$$

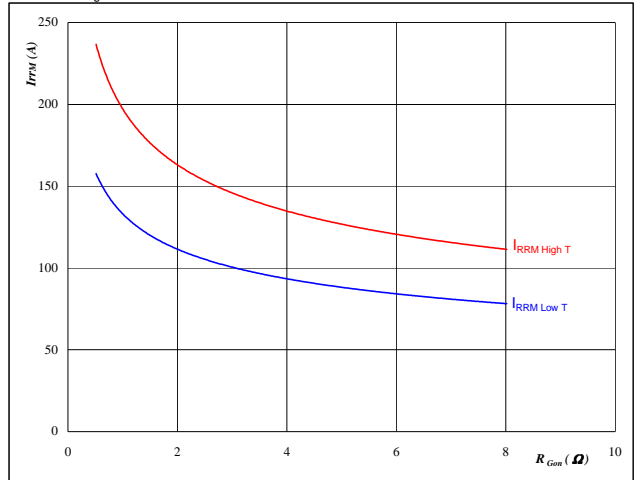


At
 $T_j = 25/125$ °C
 $V_{CE} = 350$ V
 $V_{GE} = 15$ V
 $R_{gon} = 2$ Ω

Figure 16 BOOST FWD

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

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



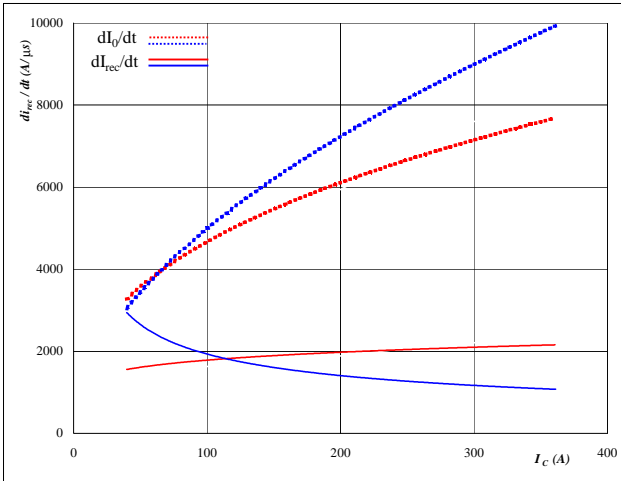
At
 $T_j = 25/125$ °C
 $V_R = 350$ V
 $I_F = 200$ A
 $V_{GS} = 15$ V

INPUT BOOST

Figure 17 BOOST FWD

Typical rate of fall of forward and reverse recovery current as a function of collector current

$$dI_f/dt, dI_{rec}/dt = f(I_c)$$

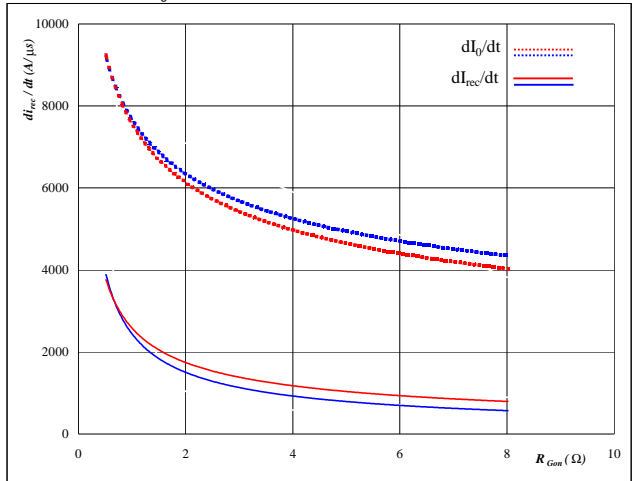


At
 $T_j = 25/125 \text{ } ^\circ\text{C}$
 $V_{CE} = 350 \text{ V}$
 $V_{GE} = 15 \text{ V}$
 $R_{gon} = 2 \text{ } \Omega$

Figure 18 BOOST FWD

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

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

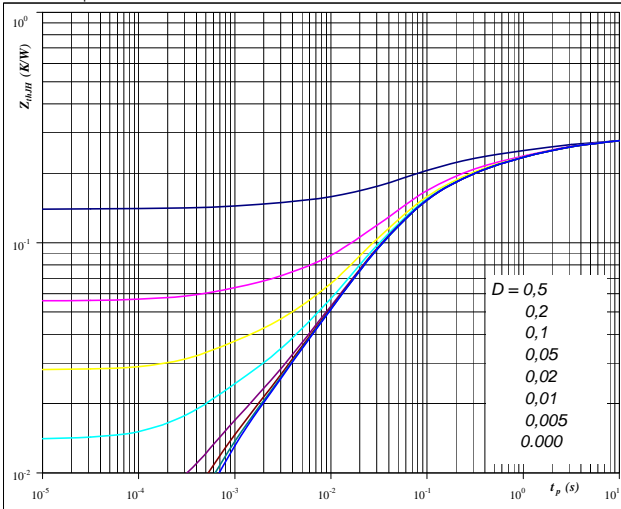


At
 $T_j = 25/125 \text{ } ^\circ\text{C}$
 $V_R = 350 \text{ V}$
 $I_F = 200 \text{ A}$
 $V_{GS} = 15 \text{ V}$

Figure 19 BOOST IGBT

IGBT/MOSFET transient thermal impedance as a function of pulse width

$$Z_{thJH} = f(t_p)$$



At
 $D = t_p / T$
 $R_{thJH} = 0,28 \text{ K/W}$ $R_{thJH} = 0,33 \text{ K/W}$

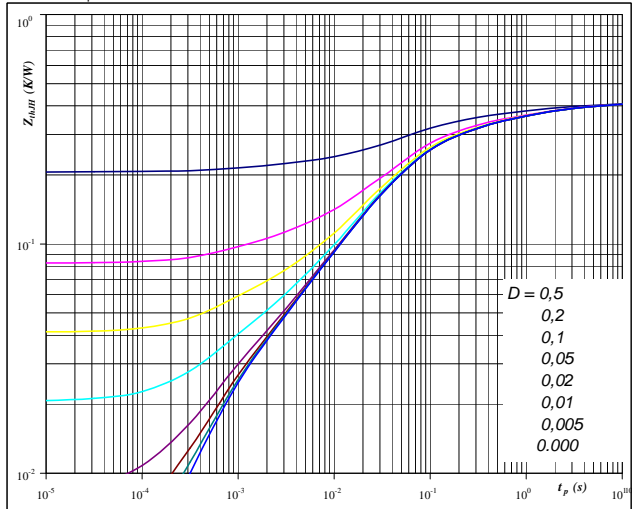
IGBT thermal model values

Phase change interface		Thermal grease	
R (C/W)	Tau (s)	R (C/W)	Tau (s)
0,04	3,79E+00	0,05	3,79E+00
0,05	8,27E-01	0,06	8,27E-01
0,08	1,57E-01	0,09	1,57E-01
0,09	3,54E-02	0,10	3,54E-02
0,02	6,25E-03	0,02	6,25E-03
0,01	7,79E-04	0,01	7,79E-04

Figure 20 BOOST FWD

FWD transient thermal impedance as a function of pulse width

$$Z_{thJH} = f(t_p)$$



At
 $D = t_p / T$
 $R_{thJH} = 0,41 \text{ K/W}$ $R_{thJH} = 0,48 \text{ K/W}$

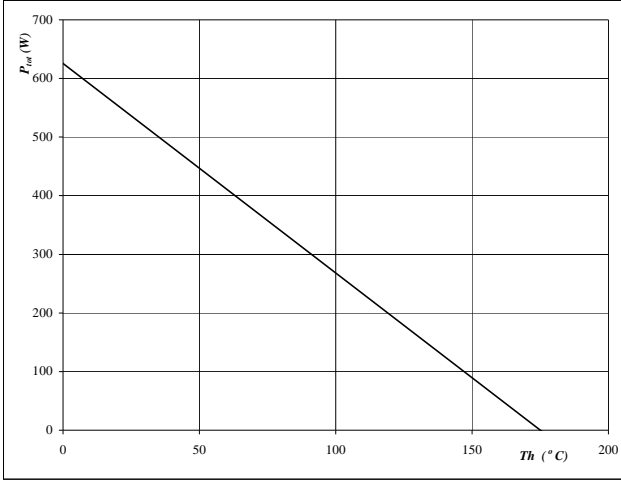
FWD thermal model values

Phase change interface		Thermal grease	
R (C/W)	Tau (s)	R (C/W)	Tau (s)
0,03	5,14E+00	0,04	5,14E+00
0,06	1,01E+00	0,07	1,01E+00
0,09	1,84E-01	0,10	1,84E-01
0,16	4,26E-02	0,19	4,26E-02
0,04	8,06E-03	0,05	8,06E-03
0,02	8,50E-04	0,03	8,50E-04

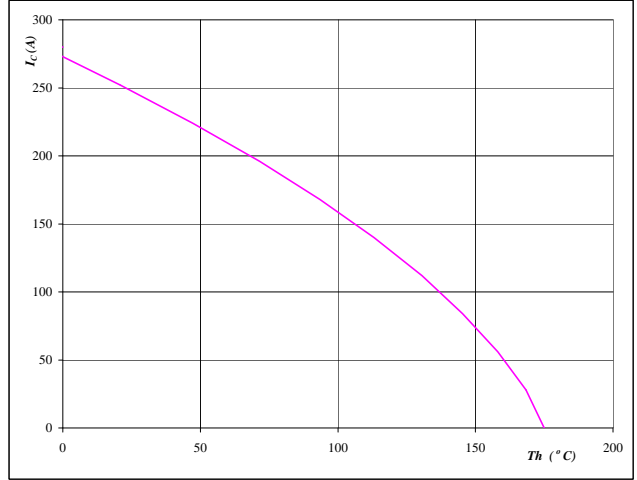
INPUT BOOST

Figure 21 BOOST IGBT
Power dissipation as a function of heatsink temperature

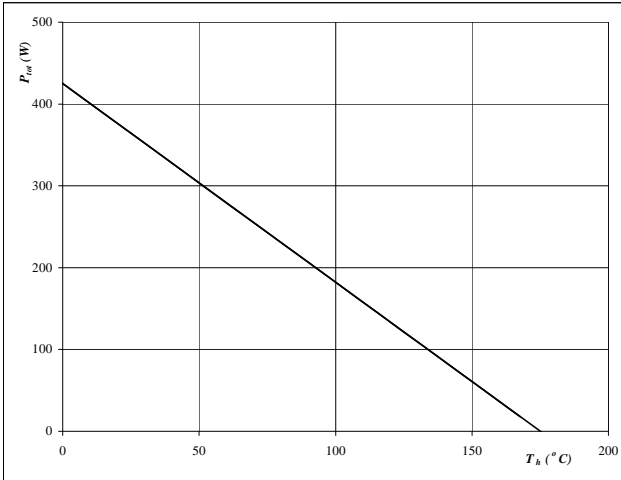
$$P_{tot} = f(T_h)$$


At
 $T_j = 175 \text{ } ^\circ\text{C}$
Figure 22 BOOST IGBT
Collector/Drain current as a function of heatsink temperature

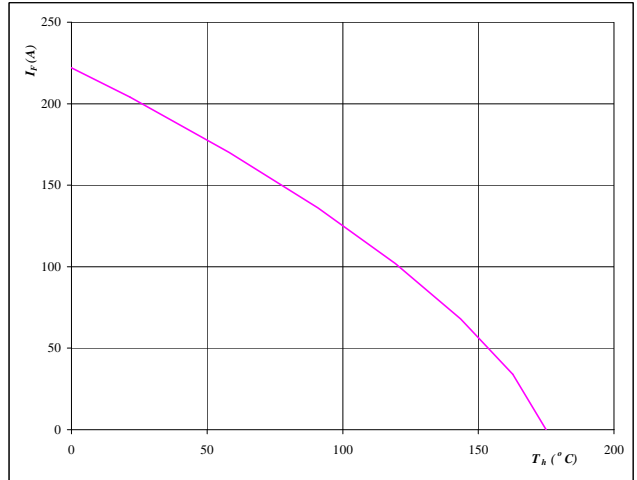
$$I_C = f(T_h)$$


At
 $T_j = 175 \text{ } ^\circ\text{C}$
 $V_{GS} = 15 \text{ V}$
Figure 23 BOOST FWD
Power dissipation as a function of heatsink temperature

$$P_{tot} = f(T_h)$$


At
 $T_j = 175 \text{ } ^\circ\text{C}$
Figure 24 BOOST FWD
Forward current as a function of heatsink temperature

$$I_F = f(T_h)$$

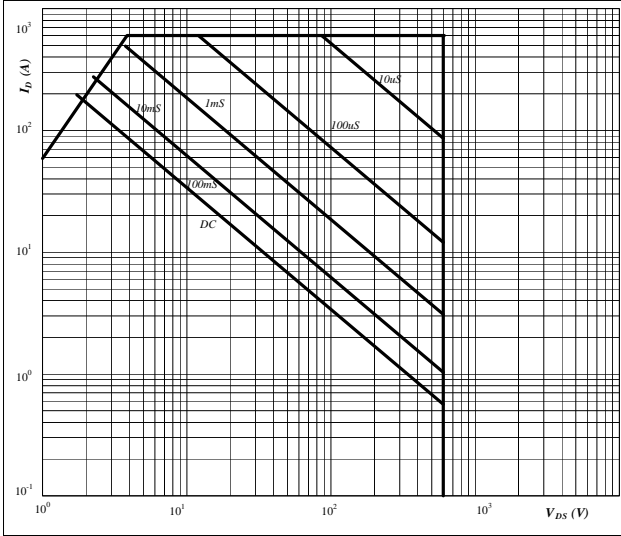

At
 $T_j = 175 \text{ } ^\circ\text{C}$

INPUT BOOST

Figure 25 BOOST IGBT

Safe operating area as a function of drain-source voltage

$$I_D = f(V_{DS})$$

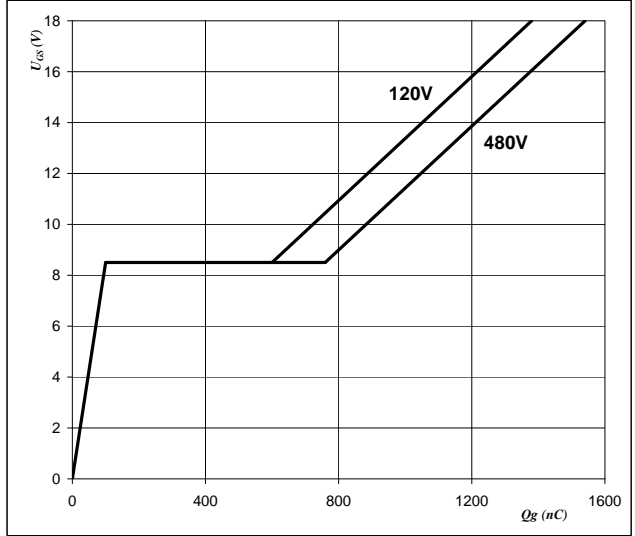


At
 D = single pulse
 $T_n = 80 \text{ } ^\circ\text{C}$
 $V_{GS} = 15 \text{ V}$
 $T_j = T_{jmax} \text{ } ^\circ\text{C}$

Figure 26 BOOST IGBT

Gate voltage vs Gate charge

$$V_{GS} = f(Q_g)$$



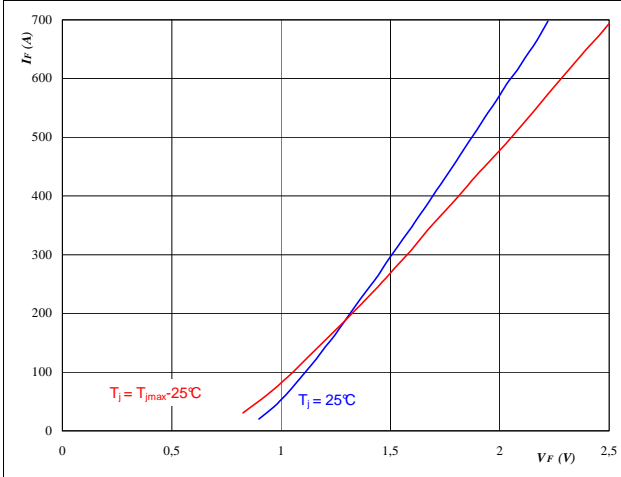
At
 $I_D = 200 \text{ A}$

Bypass Diode

Figure 1 Bypass diode

Typical diode forward current as a function of forward voltage

$$I_F = f(V_F)$$

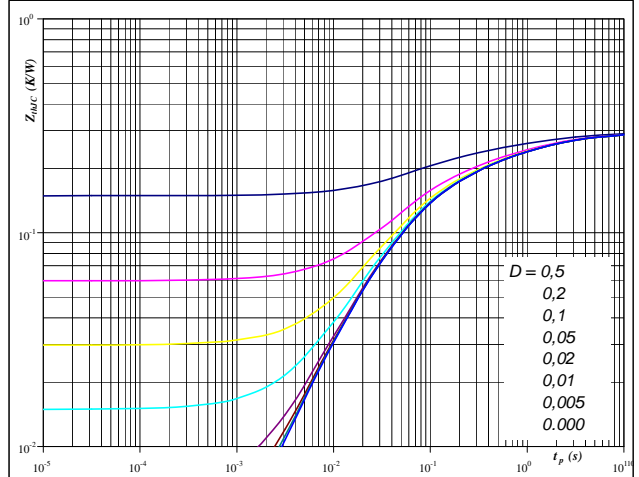


At
 $t_p = 350 \mu s$

Figure 2 Bypass diode

Diode transient thermal impedance as a function of pulse width

$$Z_{thJH} = f(t_p)$$

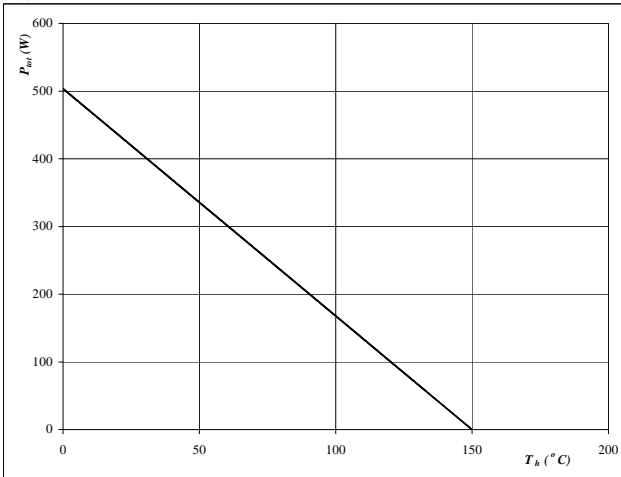


At
 $D = t_p / T$
 $R_{thJH} = 0,30 \text{ K/W}$

Figure 3 Bypass diode

Power dissipation as a function of heatsink temperature

$$P_{tot} = f(T_h)$$

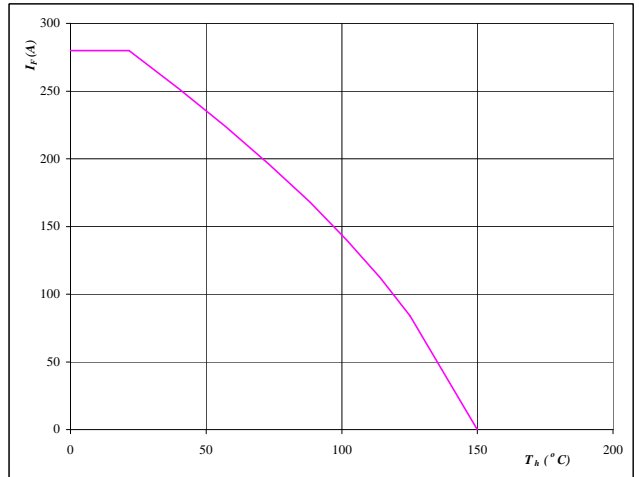


At
 $T_j = 150 \text{ °C}$

Figure 4 Bypass diode

Forward current as a function of heatsink temperature

$$I_F = f(T_h)$$



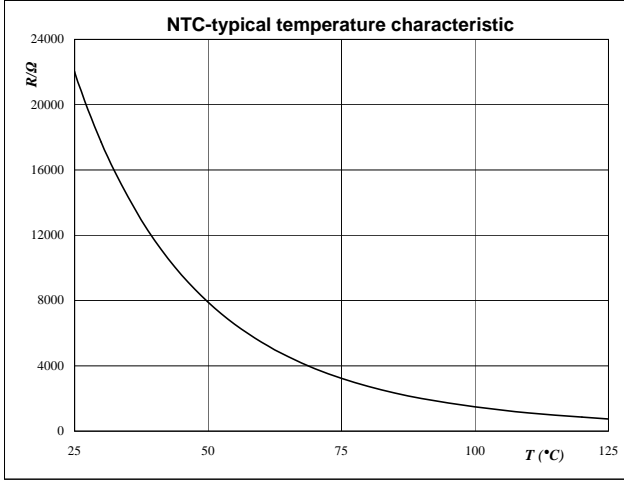
At
 $T_j = 150 \text{ °C}$

Thermistor

Figure 1 Thermistor

Typical NTC characteristic
as a function of temperature

$R_T = f(T)$

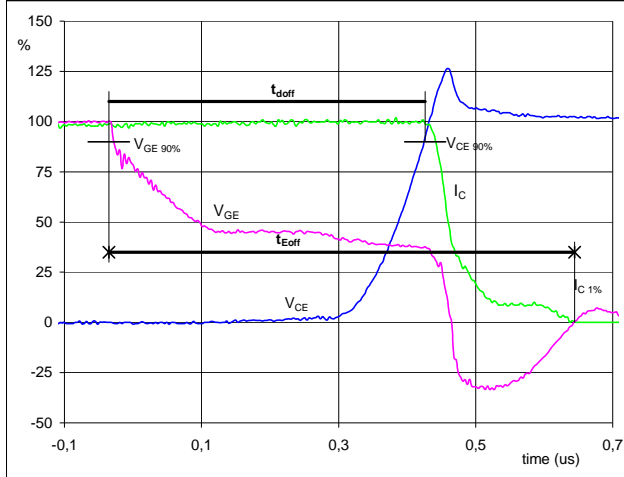


Switching Definitions BOOST IGBT

General conditions

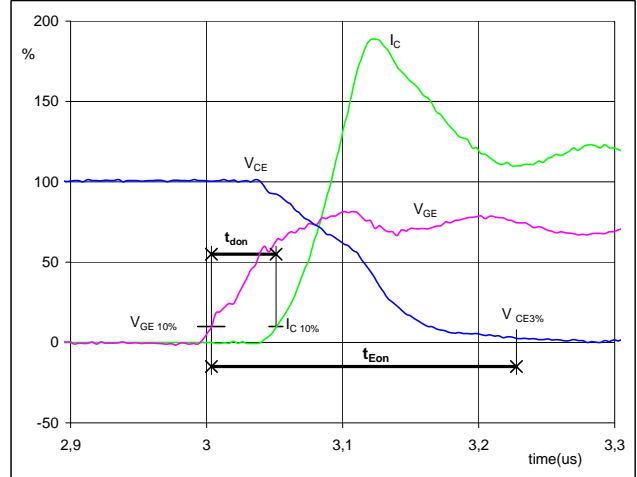
T_j	=	125 °C
R_{gon}	=	2 Ω
R_{goff}	=	2 Ω

Figure 1 Input Boost IGBT

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


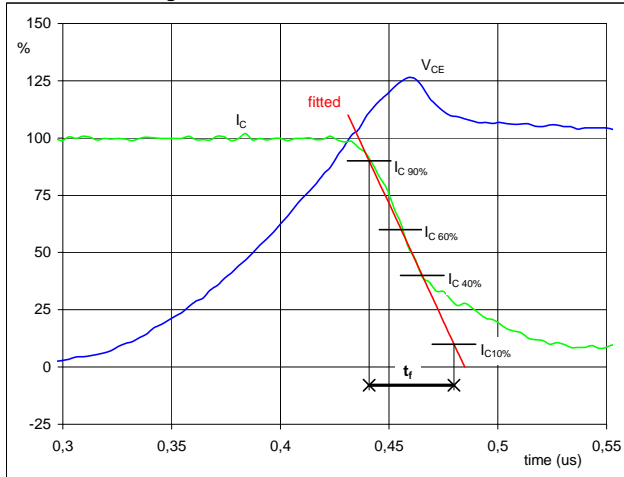
$V_{GE}(0\%) =$	0	V
$V_{GE}(100\%) =$	15	V
$V_C(100\%) =$	350	V
$I_C(100\%) =$	199	A
$t_{doff} =$	0,45	μs
$t_{Eoff} =$	0,68	μs

Figure 2 Input Boost IGBT

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


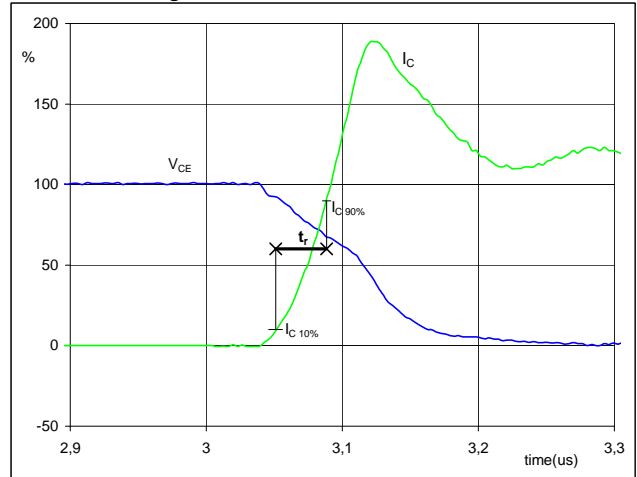
$V_{GE}(0\%) =$	0	V
$V_{GE}(100\%) =$	15	V
$V_C(100\%) =$	350	V
$I_C(100\%) =$	199	A
$t_{don} =$	0,05	μs
$t_{Eon} =$	0,22	μs

Figure 3 Input Boost IGBT

Turn-off Switching Waveforms & definition of t_f


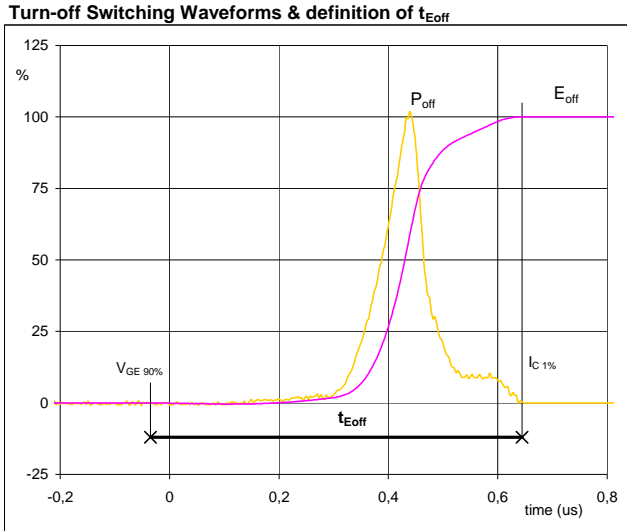
$V_C(100\%) =$	350	V
$I_C(100\%) =$	199	A
$t_f =$	0,04	μs

Figure 4 Input Boost IGBT

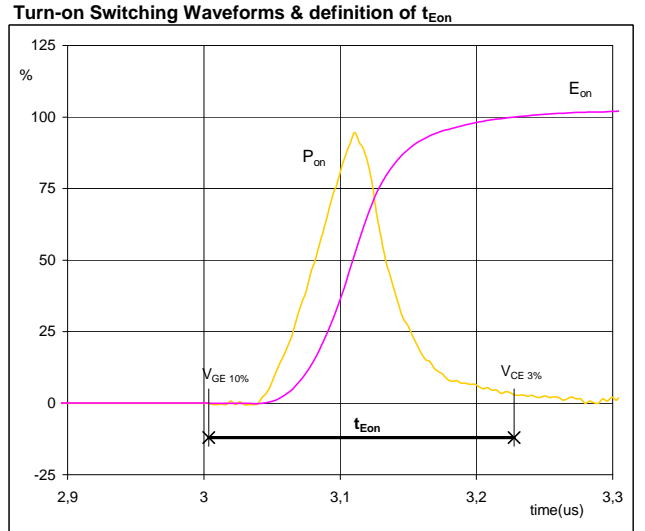
Turn-on Switching Waveforms & definition of t_r


$V_C(100\%) =$	350	V
$I_C(100\%) =$	199	A
$t_r =$	0,04	μs

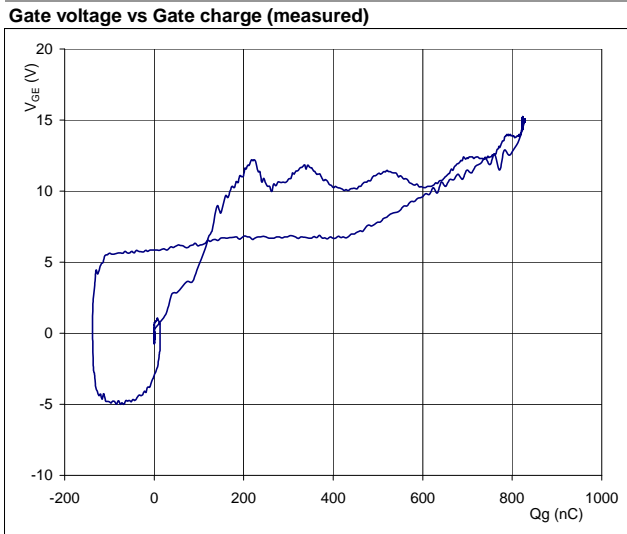
Switching Definitions BOOST IGBT

Figure 5 Input Boost IGBT


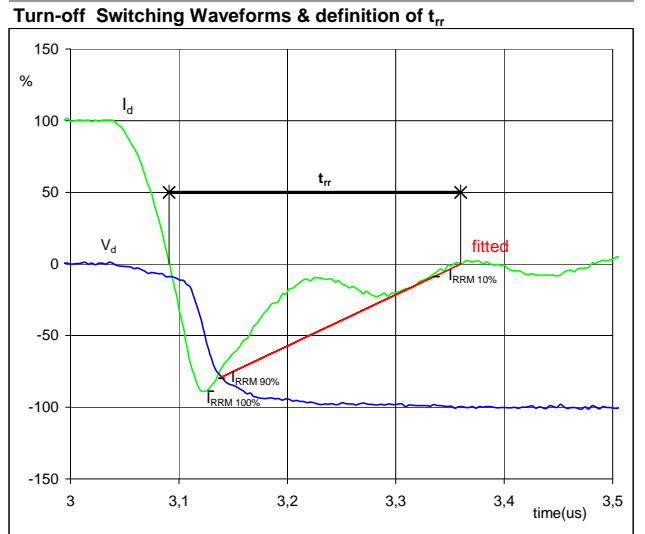
$P_{off} (100\%) =$	69,76	kW
$E_{off} (100\%) =$	7,37	mJ
$t_{Eoff} =$	0,68	μ s

Figure 6 Input Boost IGBT


$P_{on} (100\%) =$	69,76	kW
$E_{on} (100\%) =$	4,37	mJ
$t_{Eon} =$	0,22	μ s

Figure 7 Input Boost IGBT


$V_{GEoff} =$	0	V
$V_{GEon} =$	15	V
$V_C (100\%) =$	350	V
$I_C (100\%) =$	199	A
$Q_g =$	827,78	nC

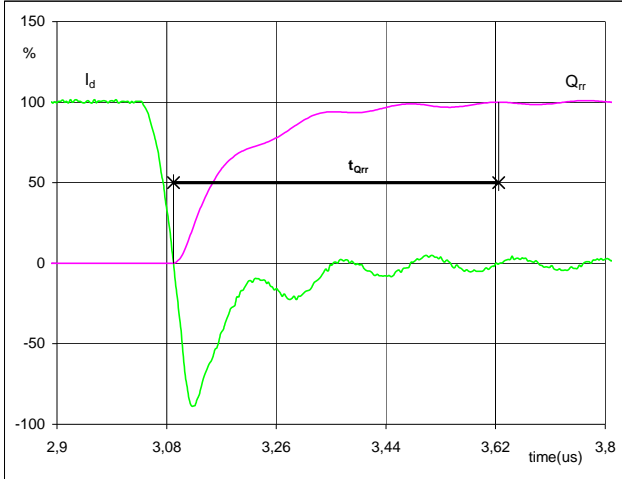
Figure 8 Input Boost FWD


$V_d (100\%) =$	350	V
$I_d (100\%) =$	199	A
$I_{RRM} (100\%) =$	-179	A
$t_{rr} =$	0,15	μ s

Switching Definitions BOOST IGBT

Figure 9 Input Boost FWD

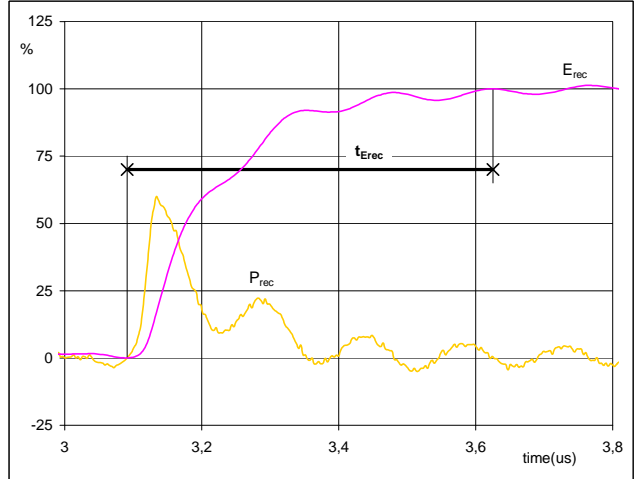
Turn-on Switching Waveforms & definition of t_{Qrr}
 (t_{Qrr} = integrating time for Q_{rr})



I_d (100%) =	199	A
Q_{rr} (100%) =	15,59	μC
t_{Qrr} =	0,53	μs

Figure 10 Input Boost FWD

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



P_{rec} (100%) =	69,76	kW
E_{rec} (100%) =	4,00	mJ
t_{Erec} =	0,53	μs

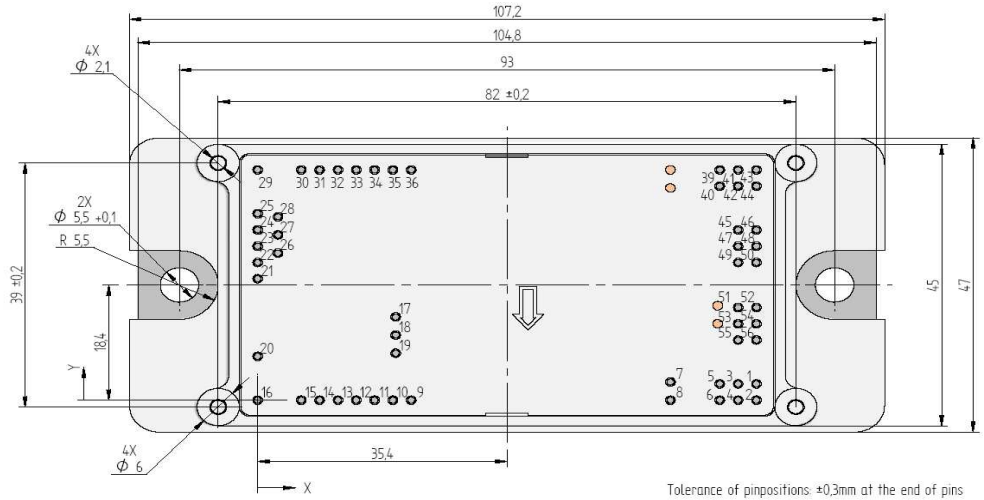
Ordering Code and Marking - Outline - Pinout

Ordering Code & Marking

Version	Ordering Code	in DataMatrix as	in packaging barcode as
without thermal paste 17mm housing	30-F206NBA200SA-M235L33	M235L33	M235L33

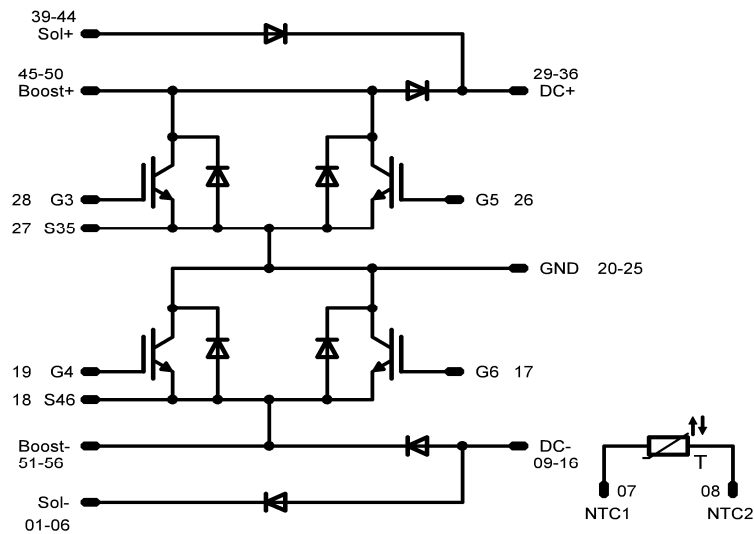
Outline

Pin table			Pin table		
Pin	X	Y	Pin	X	Y
1	70.8	2.6			
2	70.8	0			
3	68.2	2.6	29	0	36.8
4	68.2	0	30	6.2	36.8
5	65.6	2.6	31	8.8	36.8
6	65.6	0	32	11.4	36.8
7	58.6	2.9	33	14	36.8
8	58.6	0	34	16.6	36.8
9	21.8	0	35	19.2	36.8
10	19.2	0	36	21.8	36.8
11	16.6	0	39	65.6	36.78
12	14	0	40	65.6	34.2
13	11.4	0	41	68.2	36.78
14	8.8	0	42	68.2	34.2
15	6.2	0	43	70.8	36.8
16	0	0	44	70.8	34.2
17	19.6	19.3	45	68.2	27.2
18	19.6	10.4	46	70.8	27.2
19	19.6	7.5	47	68.2	24.6
20	0	7	48	70.8	24.6
21	0	19.4	49	68.2	22
22	0	22	50	70.8	22
23	0	24.6	51	68.2	14.8
24	0	27.2	52	70.8	14.8
25	0	29.8	53	68.2	12.2
26	2.9	23.5	54	70.8	12.2
27	2.9	26.4	55	68.2	9.6
28	2.9	29.3	56	70.8	9.6



Tolerance of pinpositions: ±0.3mm at the end of pins

Pinout



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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.