Vincotech

10-PY07NIB150SG-M136F38Y
datasheet

***flow*NPC 1** | **1200 V / 150 A**

Features

- Neutral-point-Clamped inverter
- Compact *flow* 1 housing
- Low Inductance Layout

Target applications

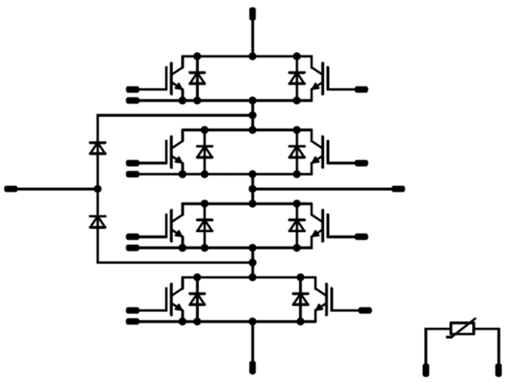
- UPS
- Motor drive
- Solar inverters

Types

- 10-PY07NIB150SG-M136F38Y

flow 1 17 mm housing

Schematic



Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition	Value	Unit
Buck Switch				
Collector-emitter voltage	V_{CES}		650	V
Collector current	I_C	$T_j = T_{jmax}$ T_s = 80 °C	128	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}	450	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$ T_s = 80 °C	279	W
Gate-emitter voltage	V_{GES}		±20	V
Short circuit ratings	t_{SC}	V_{GE} = 15 V V_{cc} = 400 V T_j ≤ 150 °C	5	µs
Maximum junction temperature	T_{jmax}		175	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition			Value	Unit
Buck Diode						
Peak repetitive reverse voltage	V_{RRM}				650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$		T_s = 80 °C	125	A
Surge (non-repetitive) forward current	I_{FSM}	t_p = 10 ms sine Wave		T_j = 100 °C	1280	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$		T_s = 80 °C	241	W
Maximum junction temperature	T_{jmax}				175	°C
Boost Switch						
Collector-emitter voltage	V_{CES}				600	V
Collector current	I_C	$T_j = T_{jmax}$		T_s = 80 °C	173	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}			450	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$		T_s = 80 °C	324	W
Gate-emitter voltage	V_{GES}				±20	V
Short circuit ratings	t_{SC}	V_{GE} = 15 V	V_{cc} = 360 V	T_j = 150 °C	6	µs
Maximum junction temperature	T_{jmax}				175	°C
Boost Diode						
Peak repetitive reverse voltage	V_{RRM}				650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$		T_s = 80 °C	120	A
Repetitive peak forward current	I_{FRM}				200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$		T_s = 80 °C	203	W
Maximum junction temperature	T_{jmax}				175	°C
Boost Sw.Inv.Diode						
Peak repetitive reverse voltage	V_{RRM}				600	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$		T_s = 80 °C	124	A
Repetitive peak forward current	I_{FRM}				200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$		T_s = 80 °C	204	W
Maximum junction temperature	T_{jmax}				175	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Condition		Value	Unit
Module Properties					
Thermal Properties					
Storage temperature	T_{stg}			-40…+125	°C
Operation temperature under switching condition	T_{jop}			-40…(T_{jmax} - 25)	°C
Isolation Properties					
Isolation voltage	V_{isol}	DC Test Voltage*	t_p = 2 s	6000	V
		AC Voltage	t_p = 1 min	2500	V
Creepage distance				min. 12,7	mm
Clearance				11,83	mm
Comparative Tracking Index	CTI			> 200	

*100 % tested in production

Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_{F} [V]	I_{C} [A] I_{D} [A] I_{F} [A]	T_{j} [°C]	Min	Typ	Max	
Buck Switch										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,0024	25	4,2	5,1	5,6	V
Collector-emitter saturation voltage	V_{CEsat}		15		150	25 150	1,38	1,89 2,25	2,22	V
Collector-emitter cut-off current	I_{CES}		0	650		25			7,6	µA
Gate-emitter leakage current	I_{GES}		20	0		25			300	nA
Internal gate resistance	r_{g}							none		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	25		25		9240		pF
Output capacitance	C_{oes}							480		
Reverse transfer capacitance	C_{res}							274		
Gate charge	Q_{g}		15	480	150	25		940		nC
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,34		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	350	150	25 125 150		149 150 151		ns
Rise time	t_{r}					25 125 150		30 32 33		
Turn-off delay time	$t_{d(off)}$					25 125 150		192 188 212		
Fall time	t_{f}					25 125 150		12 15 17		
Turn-on energy (per pulse)	E_{on}	Q_{rFWD} = 4,8 µC Q_{rFWD} = 9,1 µC Q_{rFWD} = 10,3 µC				25 125 150		1,815 2,442 2,616		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		2,084 2,747 2,964		

Characteristic Values

Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Buck Diode										
Static										
Forward voltage	V_F				160	25 125 150		1,52 1,47 1,45	1,92	V
Reverse leakage current	I_R			650		25			8,4	µA
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,39		K/W
Dynamic										
Peak recovery current	I_{RRM}	di/dt = 5294 A/µs di/dt = 5307 A/µs di/dt = 4893 A/µs	±15	350	150	25 125 150		100 143 152		A
Reverse recovery time	t_{rr}					25 125 150		66 95 105		ns
Recovered charge	Q_r					25 125 150		4,759 9,056 10,295		µC
Reverse recovered energy	E_{rec}					25 125 150		1,035 2,055 2,344		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		2725 2076 1787		A/µs

Characteristic Values

Parameter	Symbol	Conditions	V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Value Min	Value Typ	Value Max	Unit
Boost Switch										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{GE} = V_{CE}$			0,0024	25	5	5,8	6,5	V
Collector-emitter saturation voltage	V_{CEsat}		15		150	25 150	1,05	1,46 1,64	1,85	V
Collector-emitter cut-off current	I_{CES}		0	600		25			7,6	µA
Gate-emitter leakage current	I_{GES}		20	0		25			1200	nA
Internal gate resistance	r_g							none		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	25		25		9240		pF
Output capacitance	C_{oes}	f = 1 Mhz	0	25		25		576		pF
Reverse transfer capacitance	C_{res}	f = 1 Mhz	0	25		25		274		pF
Gate charge	Q_g		15	480	150	25		940		nC
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,29		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	350	150	25 150		149 151		ns
Rise time	t_r	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	350	150	25 150		31 36		ns
Turn-off delay time	$t_{d(off)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	350	150	25 150		220 245		ns
Fall time	t_f	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	350	150	25 150		58 78		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD} = 5,9 µC Q_{rFWD} = 12,9 µC	±15	350	150	25 150		1,77 2,38		mWs
Turn-off energy (per pulse)	E_{off}		±15	350	150	25 150		4,26 5,95		mWs

Characteristic Values

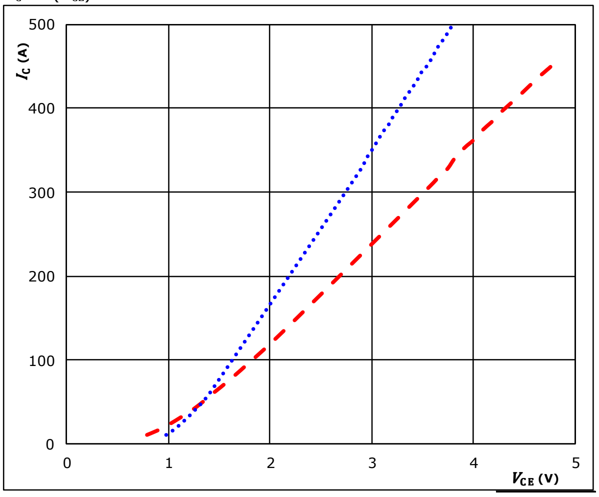
Parameter	Symbol	Conditions					Value			Unit
			V_{GE} [V] V_{GS} [V]	V_{CE} [V] V_{DS} [V] V_F [V]	I_C [A] I_D [A] I_F [A]	T_j [°C]	Min	Typ	Max	
Boost Diode										
Static										
Forward voltage	V_F				100	25 150	1,20	1,77 1,57	1,9	V
Reverse leakage current	I_R			650		25			48	µA
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,47		K/W
Dynamic										
Peak recovery current	I_{RRM}	di/dt = 7150 A/µs di/dt = 5023 A/µs	±15	350	150	25 150		82 114		A
Reverse recovery time	t_{rr}					25 150		133 290		ns
Recovered charge	Q_r					25 150		5,92 12,85		µC
Reverse recovered energy	E_{rec}					25 150		1,65 3,68		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 150		559 676		A/µs
Boost Sw.Inv.Diode										
Static										
Forward voltage	V_F				100	25 150	1,2	1,77 1,54	1,9	V
Thermal										
Thermal resistance junction to sink	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,46		K/W
Thermistor										
Rated resistance	R					25		22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P					25		5		mW
Power dissipation constant						25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %				25		3962		K
B-value	$B_{(25/100)}$	Tol. ±1 %				25		4000		K
Vincotech NTC Reference									I	

Buck Switch Characteristics

figure 1. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

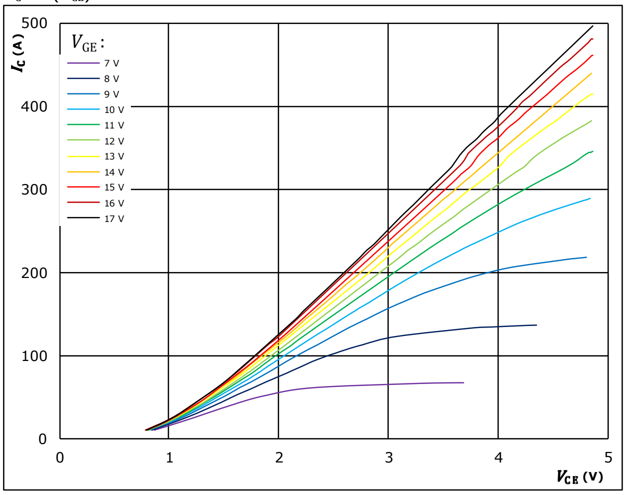


t_p =	250	µs	T_j:	25 °C	··········
V_{GE} =	15	V		150 °C	– – –

figure 2. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

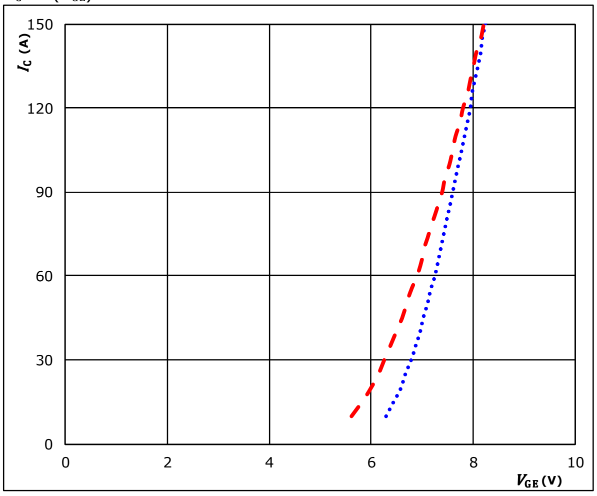


t_p =	250	µs
T_j =	125	°C
V_{GE} from	7 V to 17 V in steps of 1 V	

figure 3. **IGBT**

Typical transfer characteristics

$I_C = f(V_{GE})$

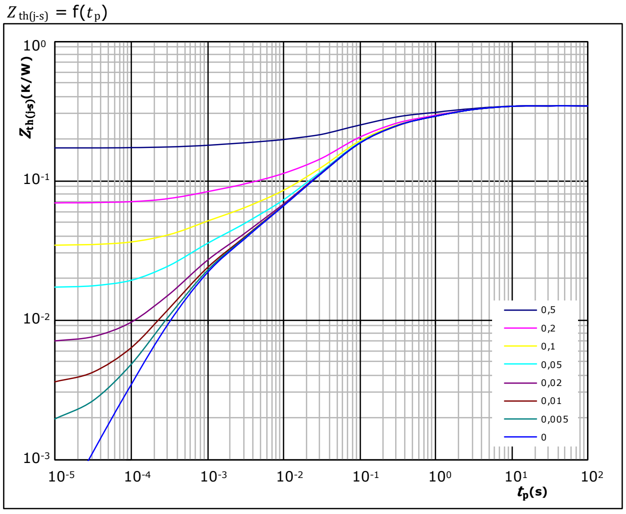


t_p =	100	µs	T_j:	25 °C	··········
V_{CE} =	0	V		150 °C	– – –

figure 4. **IGBT**

Transient thermal impedance as function of pulse duration

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,34 K/W

IGBT thermal model values

R (K/W)	τ (s)
4,43E-02	3,55E+00
6,46E-02	8,58E-01
1,01E-01	1,36E-01
9,03E-02	4,30E-02
2,31E-02	4,39E-03
1,76E-02	6,24E-04

Buck Switch Characteristics

figure 5.	IGBT

Safe operating area

$I_C = f(V_{CE})$

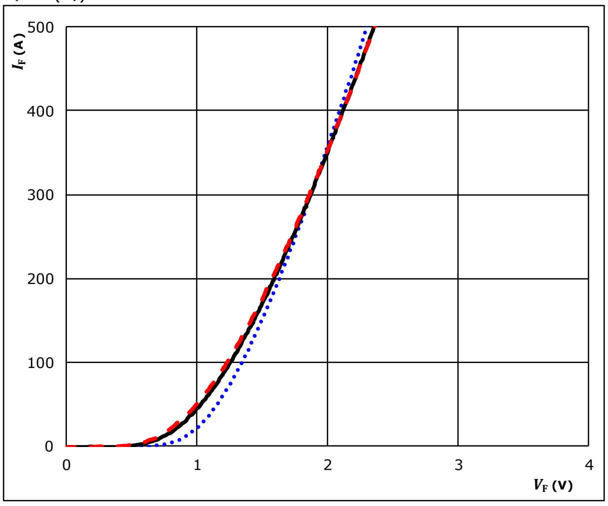
D =	single pulse	
T_s =	80	ºC
V_{GE} =	±15	V
T_j =	T_{jmax}	

Buck Diode Characteristics

figure 1. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



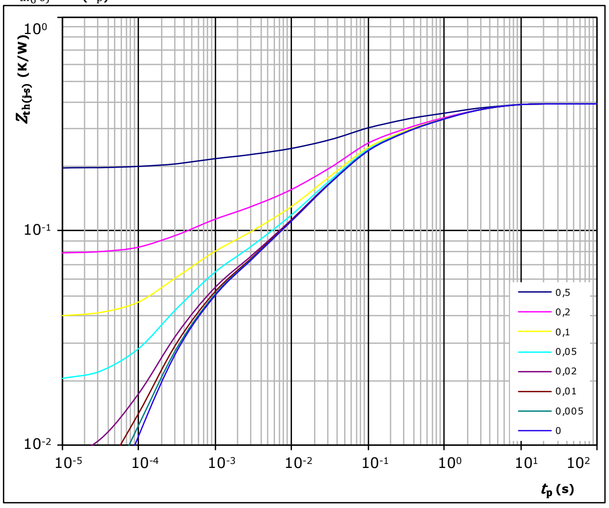
t_p = 250 µs

T_j: 25 °C
125 °C
150 °C

figure 2. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,39 K/W

FWD thermal model values

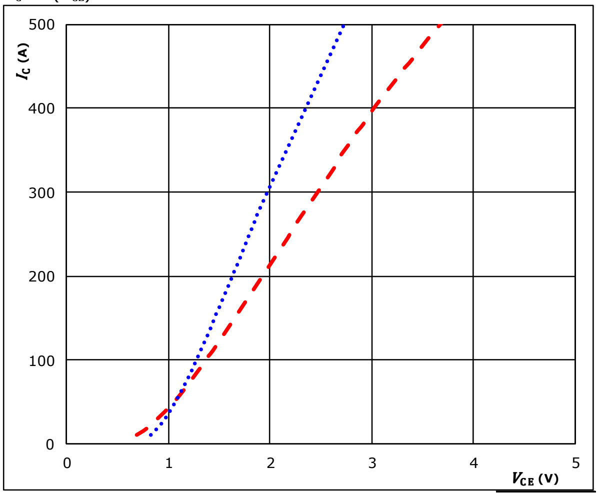
R (K/W)	τ (s)
4,62E-02	3,80E+00
6,71E-02	9,22E-01
5,38E-02	2,23E-01
1,26E-01	5,05E-02
3,49E-02	1,17E-02
3,03E-02	2,42E-03
3,61E-02	3,36E-04

Boost Switch Characteristics

figure 1. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

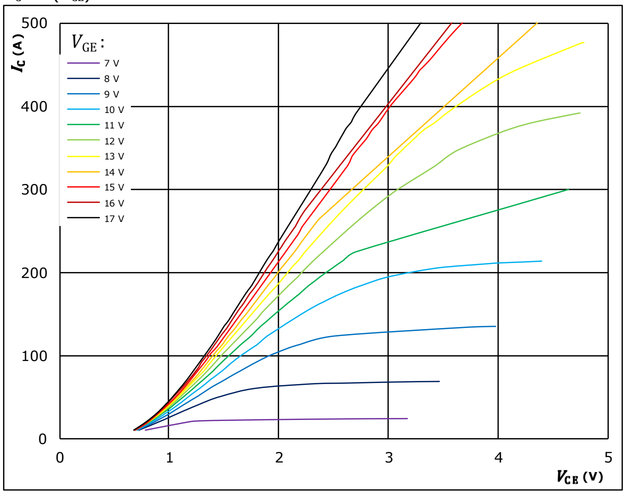


t_p =	250	µs	T_j:	25 °C	··········
V_{GE} =	15	V		150 °C	– – –

figure 2. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$

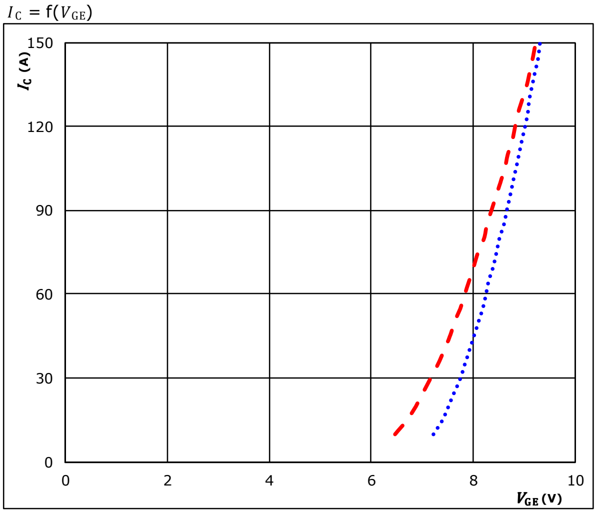


t_p =	250	µs
T_j =	125	°C
V_{GE} from	7 V to 17 V in steps of 1 V	

figure 3. **IGBT**

Typical transfer characteristics

$I_C = f(V_{GE})$

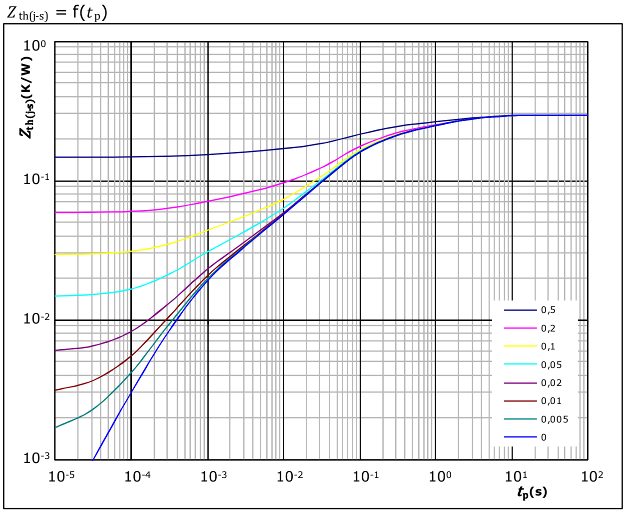


t_p =	100	µs	T_j:	25 °C	··········
V_{CE} =	0	V		150 °C	– – –

figure 4. **IGBT**

Transient thermal impedance as function of pulse duration

$Z_{th(j-s)} = f(t_p)$



D =	t_p / T	
$R_{th(j-s)}$ =	0,29	K/W

IGBT thermal model values

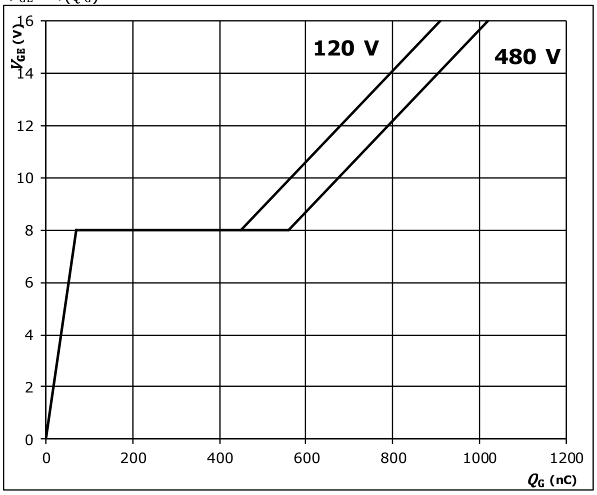
R (K/W)	τ (s)
4,40E-02	2,95E+00
5,08E-02	7,93E-01
7,83E-02	1,41E-01
8,59E-02	4,33E-02
2,00E-02	3,83E-03
1,46E-02	5,99E-04

Boost Switch Characteristics

figure 5. **IGBT**

Gate voltage vs gate charge

$V_{GE} = f(Q_G)$

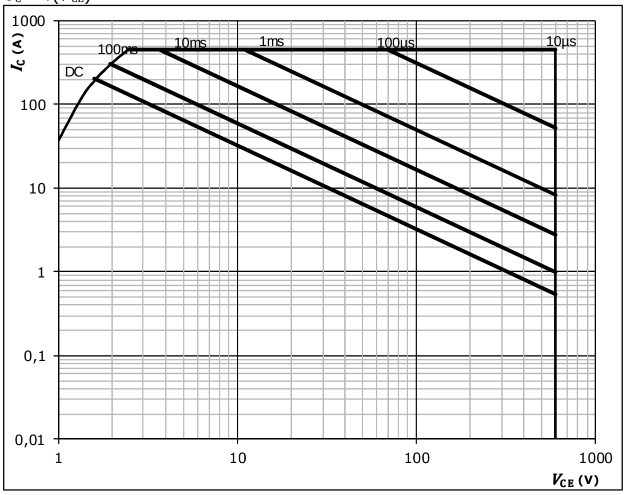


$I_C =$ 150 A

figure 6. **IGBT**

Safe operating area

$I_C = f(V_{CE})$



$D =$ single pulse

$T_s =$ 80 ºC

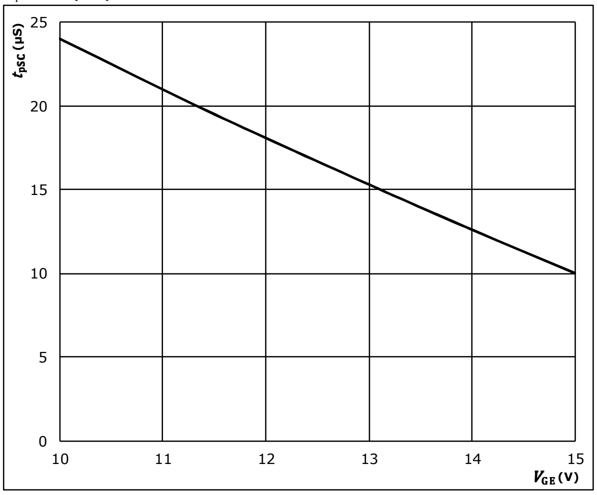
$V_{GE} =$ ±15 V

$T_j = T_{jmax}$

figure 7. **IGBT**

Short circuit duration as a function of V_{GE}

$t_{pSC} = f(V_{GE})$



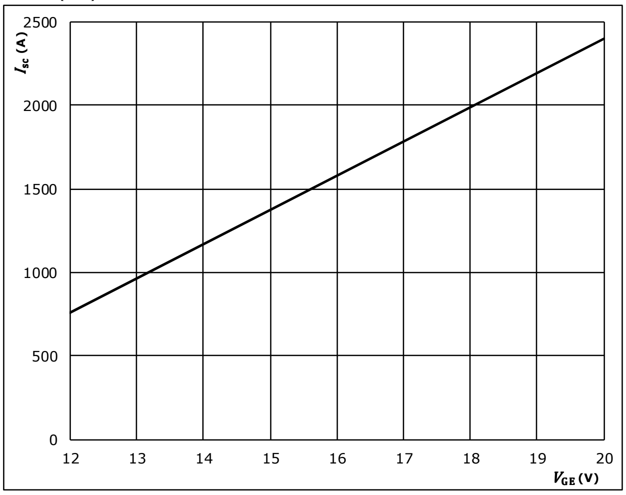
$V_{CE} =$ 400 V

$T_j \leq$ 150 ºC

figure 8. **IGBT**

Typical short circuit current as a function of V_{GE}

$I_{SC} = f(V_{GE})$



$V_{CE} \leq$ 400 V

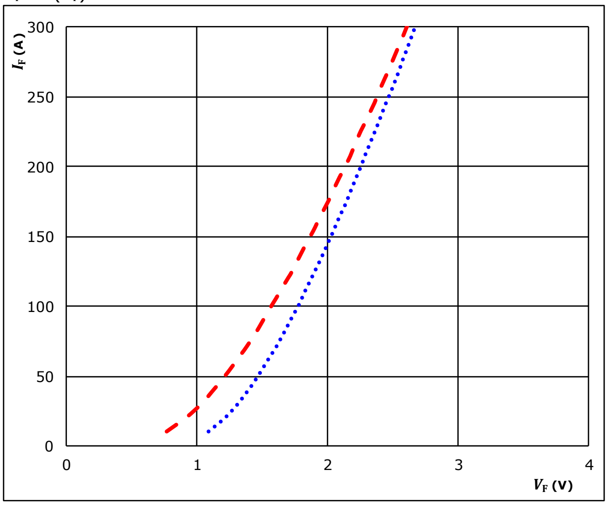
$T_j \leq$ 150 ºC

Boost Diode Characteristics

figure 1. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



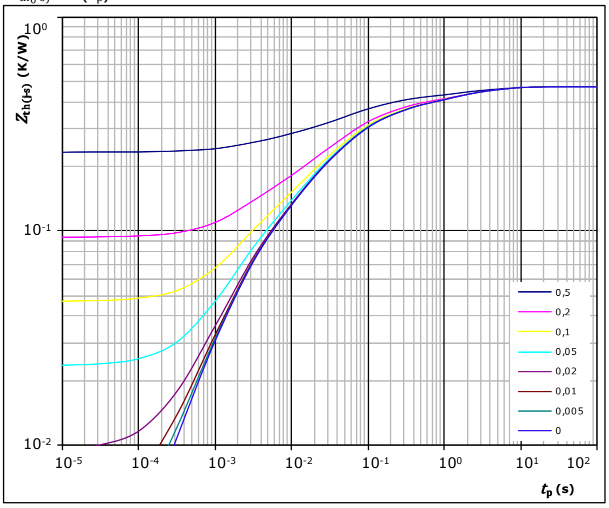
t_p = 250 µs

T_j: 25 °C; 150 °C

figure 2. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



D = t_p / T

$R_{th(j-s)}$ = 0,47 K/W

FWD thermal model values

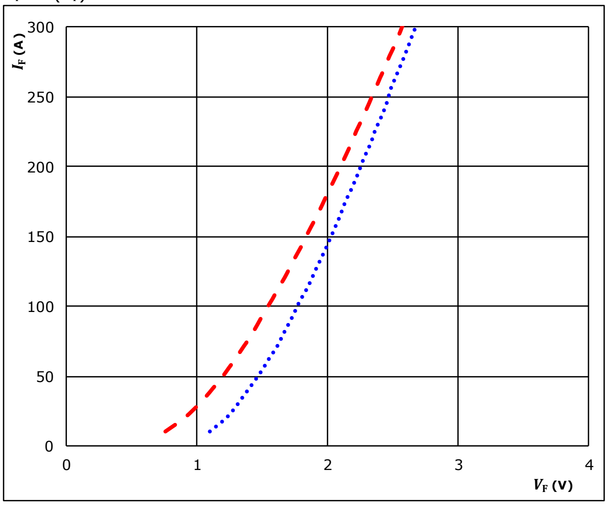
R (K/W)	τ (s)
4,73E-02	4,12E+00
6,76E-02	9,18E-01
1,01E-01	1,37E-01
1,41E-01	3,83E-02
6,28E-02	8,98E-03
4,92E-02	1,99E-03

Boost Sw.Inv.Diode Characteristics

figure 1. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



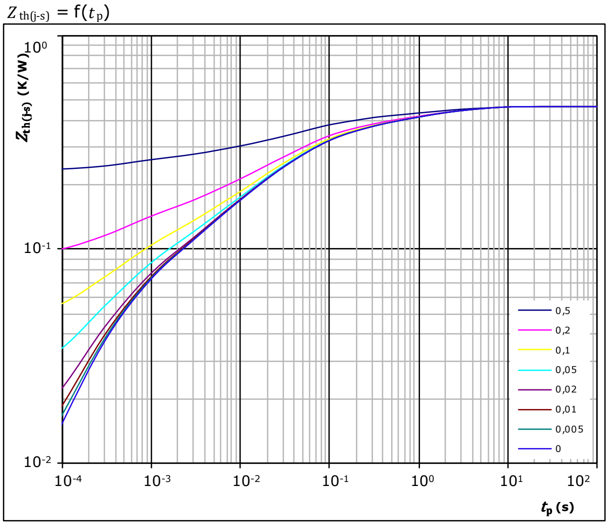
t_p = 250 µs

T_j: 25 °C ············ ; 125 °C ——— ; 150 °C – – – –

figure 2. **FWD**

Transient thermal impedance as a function of pulse width

$Z_{th(j-s)} = f(t_p)$



$D = t_p / T$

$R_{th(j-s)}$ = 0,46 K/W

FWD thermal model values

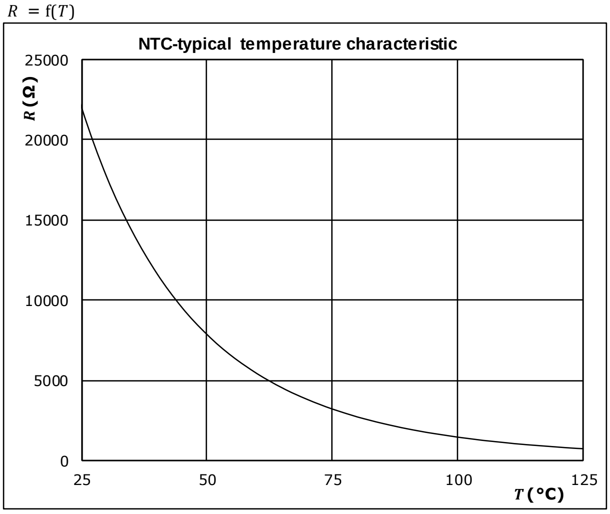
R (K/W)	τ (s)
4,32E-02	3,42E+00
5,82E-02	8,07E-01
7,54E-02	1,51E-01
1,32E-01	3,88E-02
6,30E-02	9,31E-03
4,34E-02	2,22E-03
4,90E-02	3,53E-04

Thermistor Characteristics

figure 1. **Thermistor**

Typical NTC characteristic as a function of temperature

$R = f(T)$

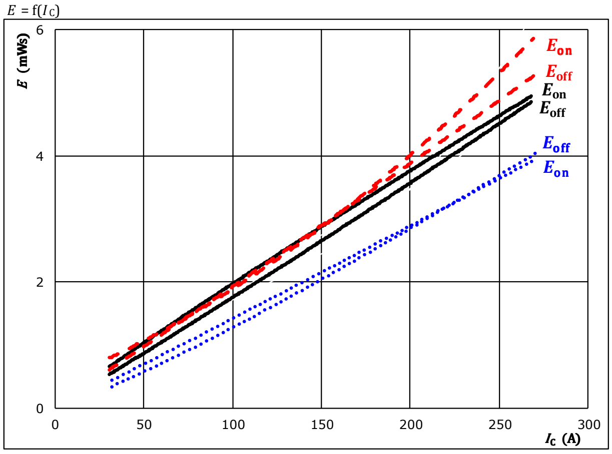


Buck Switching Characteristics

figure 1. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



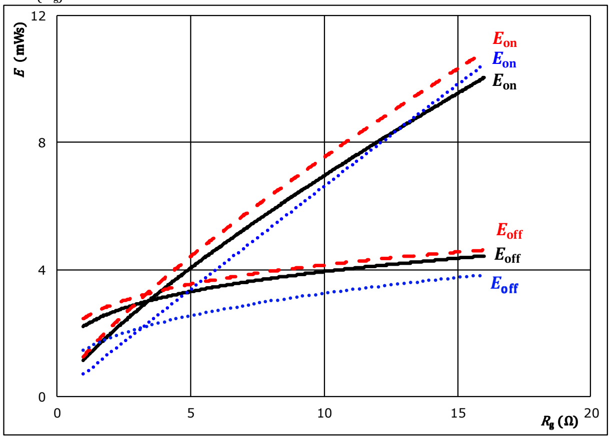
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C	··········
V_{GE} =	±15	V		125 °C	———
R_{gon} =	4	Ω		150 °C	– – –
R_{goff} =	4	Ω			

figure 2. **IGBT**

Typical switching energy losses as a function of gate resistor

$E = f(R_g)$



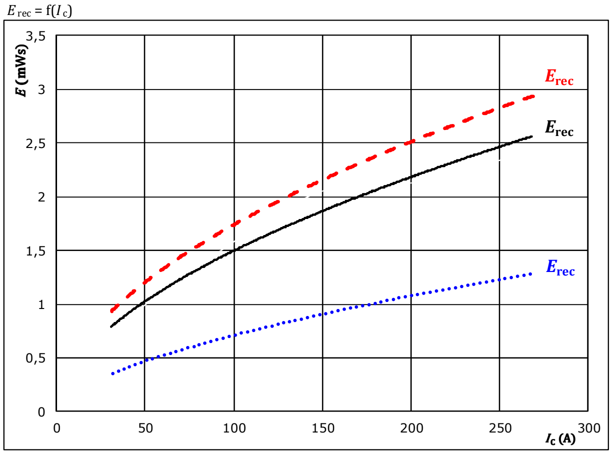
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C	··········
V_{GE} =	±15	V		125 °C	———
I_C =	150	A		150 °C	– – –

figure 3. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



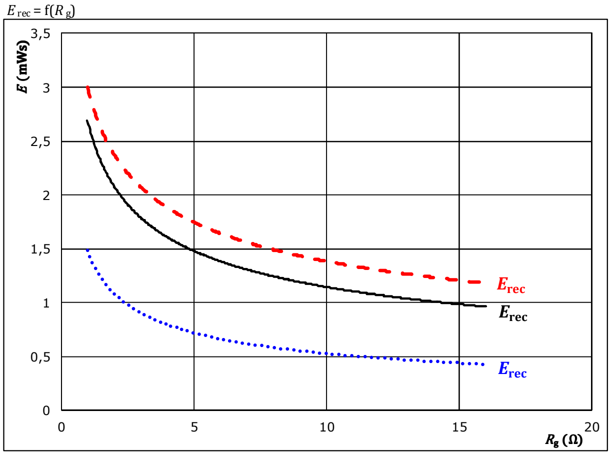
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C	··········
V_{GE} =	±15	V		125 °C	———
R_{gon} =	4	Ω		150 °C	– – –

figure 4. **FWD**

Typical reverse recovered energy loss as a function of gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

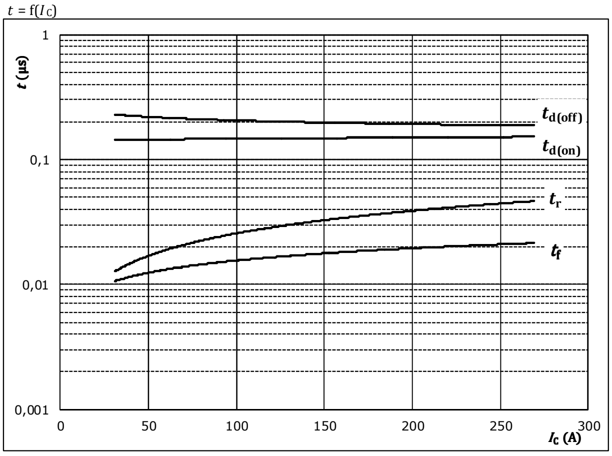
V_{CE} =	350	V	T_j:	25 °C	··········
V_{GE} =	±15	V		125 °C	———
I_C =	150	A		150 °C	– – –

Buck Switching Characteristics

figure 5. **IGBT**

Typical switching times as a function of collector current

$t = f(I_C)$



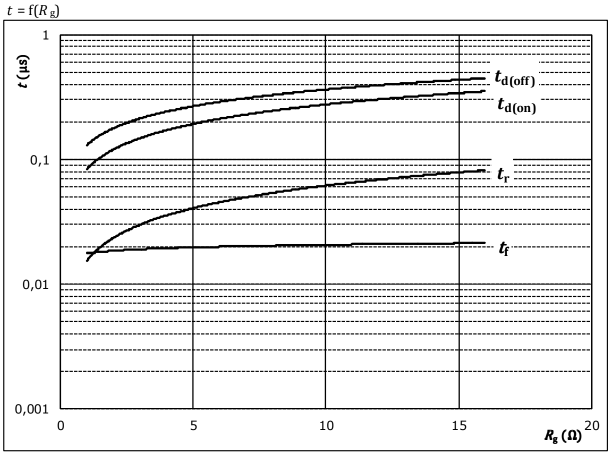
With an inductive load at

T_j =	150	°C
V_{CE} =	350	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 6. **IGBT**

Typical switching times as a function of gate resistor

$t = f(R_g)$



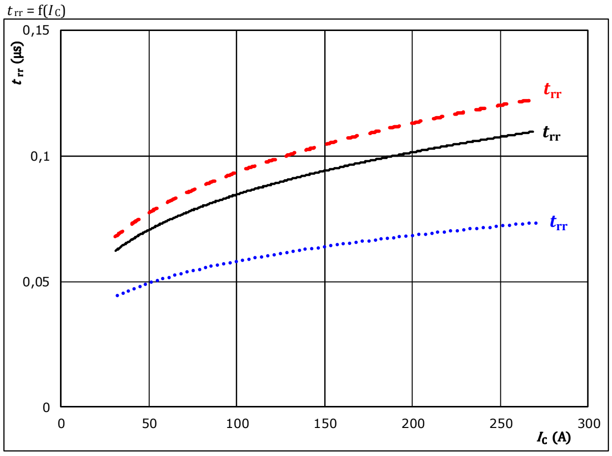
With an inductive load at

T_j =	150	°C
V_{CE} =	350	V
V_{GE} =	±15	V
I_C =	150	A

figure 7. **FWD**

Typical reverse recovery time as a function of collector current

$t_{rr} = f(I_C)$



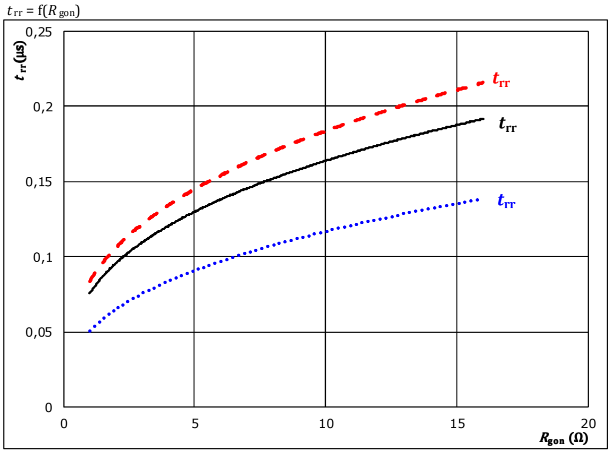
With an inductive load at

V_{CE}=	350	V	T_j:	25 °C (dotted)
V_{GE} =	±15	V		125 °C (solid)
R_{gon} =	4	Ω		150 °C (dashed)

figure 8. **FWD**

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

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



With an inductive load at

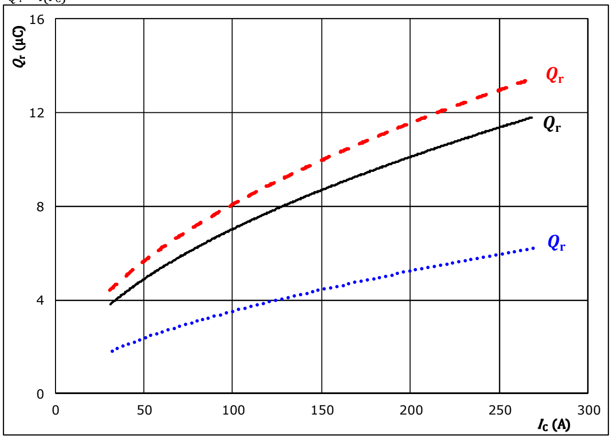
V_{CE} =	350	V	T_j:	25 °C (dotted)
V_{GE} =	±15	V		125 °C (solid)
I_C =	150	A		150 °C (dashed)

Buck Switching Characteristics

figure 9. FWD

Typical recovered charge as a function of collector current

$Q_r = f(I_C)$



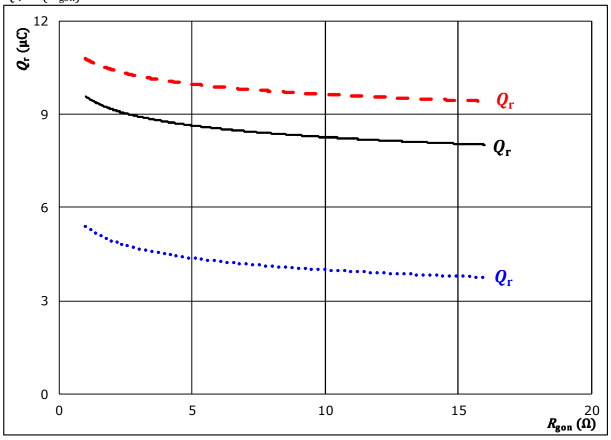
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C	dotted
V_{GE} =	±15	V		125 °C	solid
R_{gon} =	4	Ω		150 °C	dashed

figure 10. FWD

Typical recovered charge as a function of IGBT turn on gate resistor

$Q_r = f(R_{gon})$



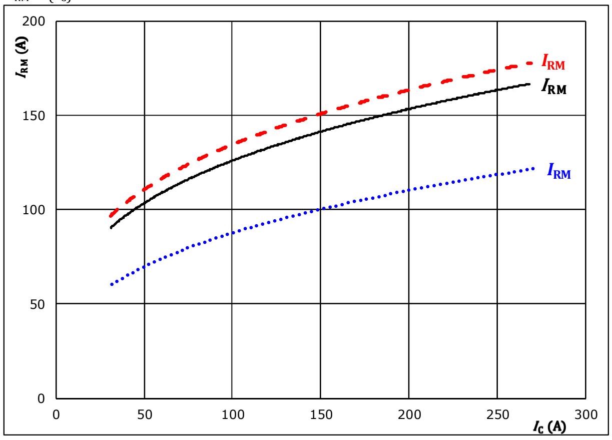
With an inductive load at

V_{CE}=	350	V	T_j:	25 °C	dotted
V_{GE} =	±15	V		125 °C	solid
I_C=	150	A		150 °C	dashed

figure 11. FWD

Typical peak reverse recovery current current as a function of collector current

$I_{RM} = f(I_C)$



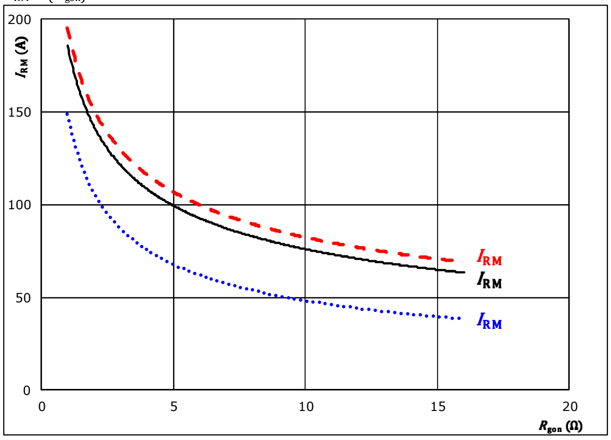
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C	dotted
V_{GE} =	±15	V		125 °C	solid
R_{gon} =	4	Ω		150 °C	dashed

figure 12. FWD

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

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



With an inductive load at

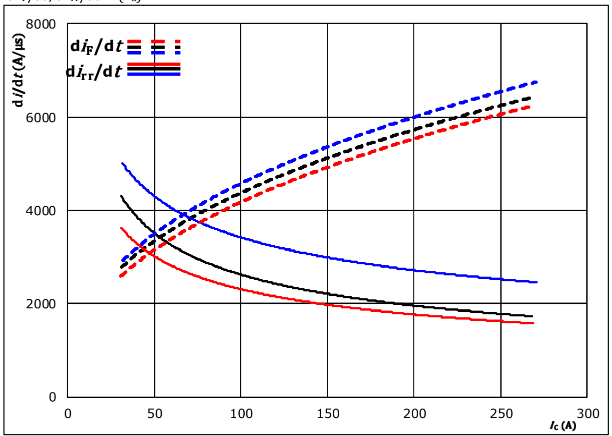
V_{CE} =	350	V	T_j:	25 °C	dotted
V_{GE} =	±15	V		125 °C	solid
I_C =	150	A		150 °C	dashed

Buck Switching Characteristics

figure 13. **FWD**

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

di_F/dt, $di_{rr}/dt = f(I_C)$



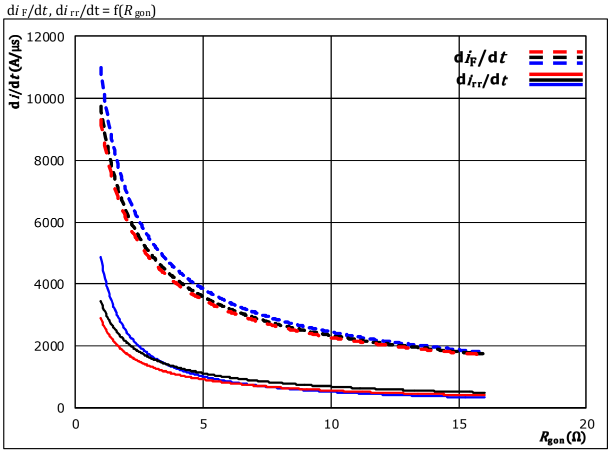
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		150 °C

figure 14. **FWD**

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

di_F/dt, $di_{rr}/dt = f(R_{gon})$



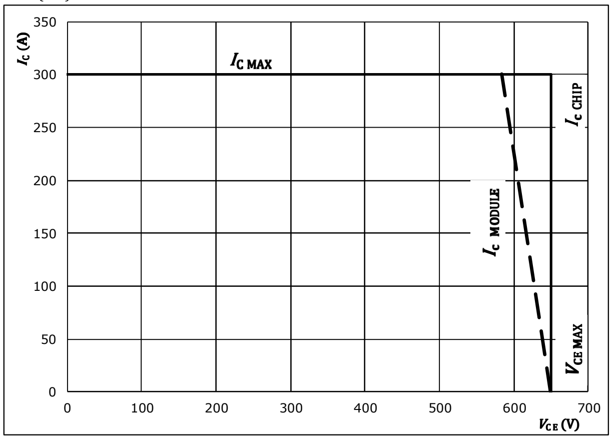
With an inductive load at

V_{CE} =	350	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C=	150	A		150 °C

figure 15. **IGBT**

Reverse bias safe operating area

$I_C = f(V_{CE})$



At

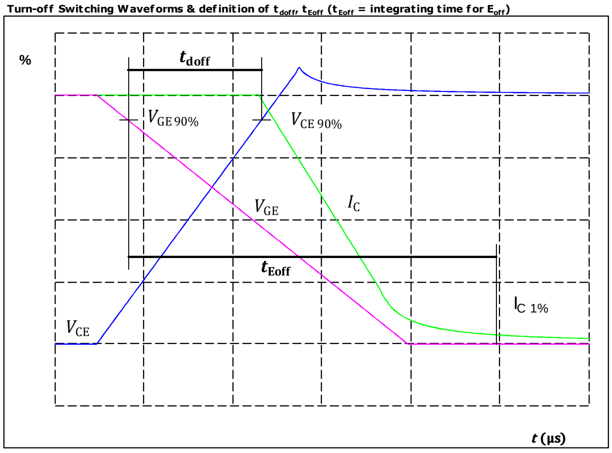
T_j =	125	°C
R_{gon} =	4	Ω
R_{goff} =	4	Ω

Buck Switching Definitions

General conditions		
T_j	=	125 °C
R_{gon}	=	4 Ω
R_{goff}	=	4 Ω

figure 1. IGBT

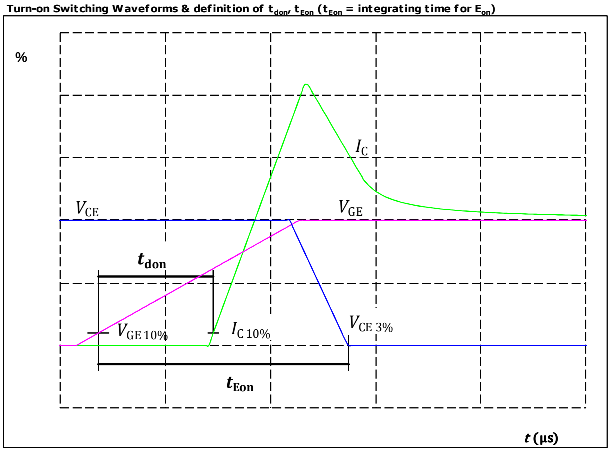
Turn-off Switching Waveforms & definition of t_{doff}, t_{Eoff} (t_{Eoff} = integrating time for E_{off})



$V_{GE}(0\%)$ =	-15	V
$V_{GE}(100\%)$ =	15	V
$V_C(100\%)$ =	350	V
$I_C(100\%)$ =	150	A
t_{doff} =	188	ns

figure 2. IGBT

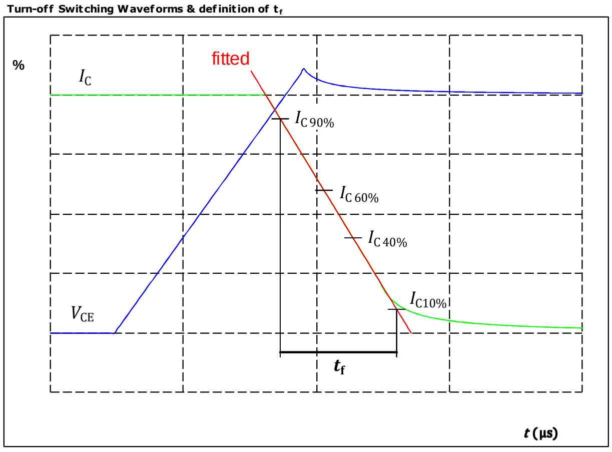
Turn-on Switching Waveforms & definition of t_{don}, t_{Eon} (t_{Eon} = integrating time for E_{on})



$V_{GE}(0\%)$ =	-15	V
$V_{GE}(100\%)$ =	15	V
$V_C(100\%)$ =	350	V
$I_C(100\%)$ =	150	A
t_{don} =	150	ns

figure 3. IGBT

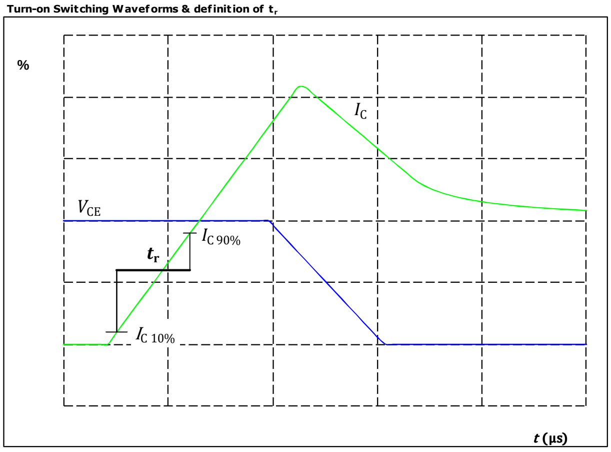
Turn-off Switching Waveforms & definition of t_f



$V_C(100\%)$ =	350	V
$I_C(100\%)$ =	150	A
t_f =	15	ns

figure 4. IGBT

Turn-on Switching Waveforms & definition of t_r

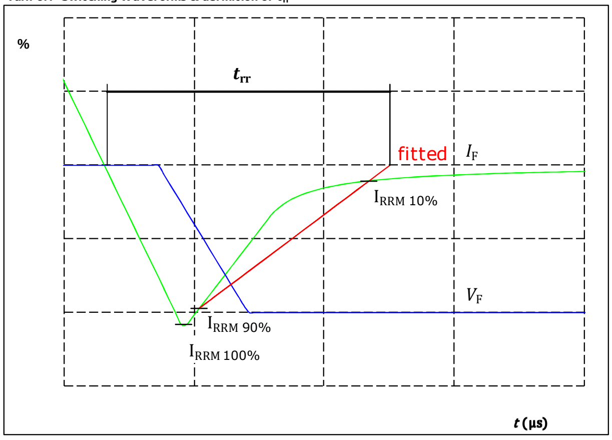


$V_C(100\%)$ =	350	V
$I_C(100\%)$ =	150	A
t_r =	32	ns

Boost Switching Characteristics

figure 5. **FWD**

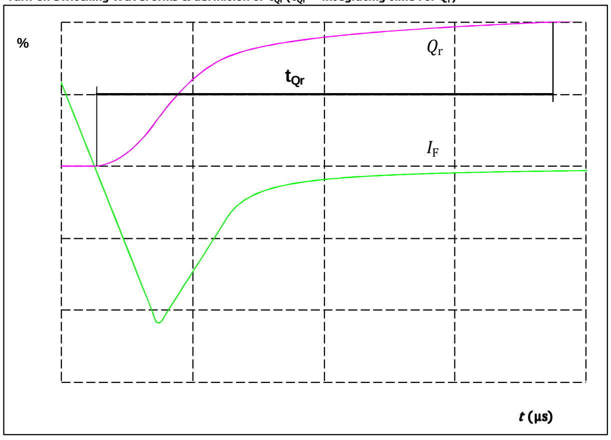
Turn-off Switching Waveforms & definition of t_{rr}



V_F (100%) =	350	V
I_F (100%) =	150	A
I_{RRM} (100%) =	114	A
t_{rr} =	290	ns

figure 6. **FWD**

Turn-on Switching Waveforms & definition of t_{Qr} (t_{Qr} = integrating time for Q_r)



I_F (100%) =	150	A
Q_r (100%) =	13	µC

Ordering Code & Marking

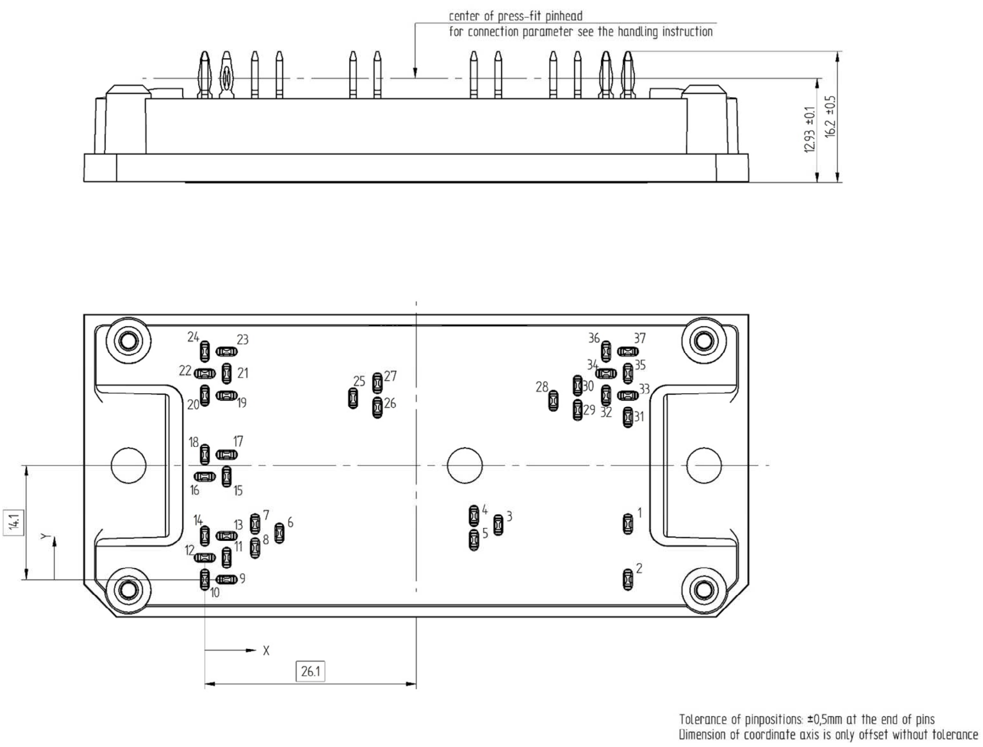
Version	Ordering Code
without thermal paste 12 mm housing sith Press-fit pins	10-PY07NIB150SG-M136F38Y
with thermal paste 12 mm housing with press-fit pins	10-PY07NIB150SG-M136F38Y-/3/

	Name		Date code	UL & VIN	Lot	Serial
Text	NN-NNNNNNNNNNNNNN-TTTTTTVV		WWYY	UL VIN	LLLLL	SSSS
Datamatrix	Type&Ver	Lot number	Serial	Date code		
	TTTTTTTVV	LLLLL	SSSS	WWYY		

Outline

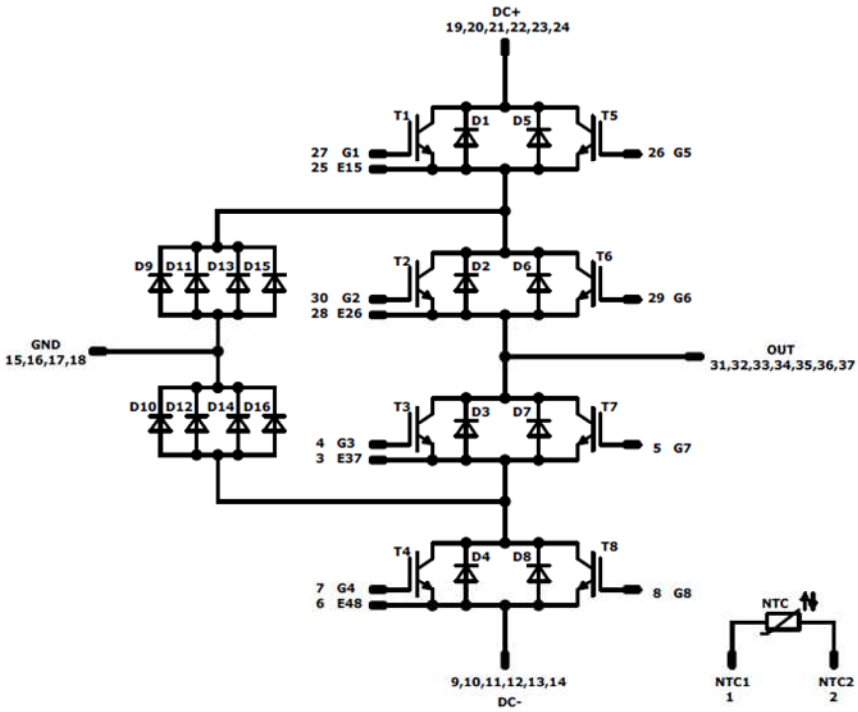
Pin table [mm]

Pin	X	Y	Function
1	52,2	6,9	NTC1
2	52,2	0	NTC2
3	36,2	6,75	E37
4	33,2	7,9	G3
5	33,2	4,9	G7
6	9,2	5,75	E48
7	6,2	6,9	G4
8	6,2	3,9	G8
9	2,7	0	DC-
10	0	0	DC-
11	2,7	2,7	DC-
12	0	2,7	DC-
13	2,7	5,4	DC-
14	0	5,4	DC-
15	2,7	12,75	GND
16	0	12,75	GND
17	2,7	15,45	GND
18	0	15,45	GND
19	2,7	22,8	DC+
20	0	22,8	DC+
21	2,7	25,5	DC+
22	0	25,5	DC+
23	2,7	28,2	DC+
24	0	28,2	DC+
25	18,3	22,45	E15
26	21,3	21,3	G5
27	21,3	24,3	G1
28	43	22,15	E26
29	46	21	G6
30	46	24	G2
31	52,2	20,1	OUT
32	49,5	22,8	OUT
33	52,2	22,8	OUT
34	49,5	25,5	OUT
35	52,2	25,5	OUT
36	49,5	28,2	OUT
37	52,2	28,2	OUT



Vincotech

Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T1, T4, T5, T8	IGBT	650 V	75 A	Buck Switch	
D9, D11, D13, D15, D10, D12, D14, D16	FWD	650 V	40 A	Buck Diode	
T2, T3, T6, T7	IGBT	600 V	75 A	Boost Switch	
D1, D4, D5, D8	FWD	650 V	50 A	Boost Diode	
D2, D3, D6, D7	Diode	600 V	50 A	Boost Sw.Inv.Diode	
NTC	Thermistor			Thermistor	

Packaging instruction		
Standard packaging quantity (SPQ) 100	>SPQ Standard	<SPQ Sample

Handling instruction
Handling instructions for *flow* 1 packages see vincotech.com website.

Package data
Package data for *flow* 1 packages see vincotech.com website.

UL recognition and file number
This device is certified according to UL 1557 standard, UL file number E192116. For more information see vincotech.com website.

Document No.:	Date:	Modification:	Pages
10-PY07NIB150SG-M136F38Y-D3-14	21 Feb. 2019	Update of D9-D16 diodes; DS update	All