Vincotech

B0-SP10F3A100S7-LU49F08T

datasheet

3x*flow*Buck-Boost S3	950 V / 200 A

Topology features

- Kelvin Emitter for improved switching performance
- Temperature sensor
- 3ph Flying Cap inverter
- Triple Flying Cap Buck/Boost

Component features

- Low collector emitter saturation voltage
- High speed and smooth switching

Housing features

- Base isolation: Al_2O_3
- CTI600 housing material
- Compact, baseplate-less housing
- VINcoPress Technology
- Thermo-mechanical push-and-pull force relief
- Press-fit pin
- Reliable cold welding connection

Target applications

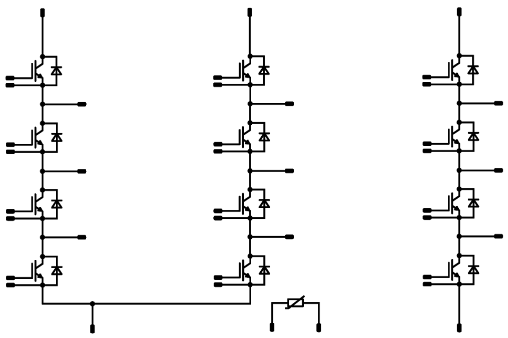
- Energy Storage Systems
- Power Supply

Types

- B0-SP10F3A100S7-LU49F08T

flow S3 12 mm housing

Schematic



Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
AC 1 Switch L					
Collector-emitter voltage	V_{CES}			950	V
Collector current (DC current)	I_C	$T_j = T_{jmax}$	T_s = 80 °C	77	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	145	W
Gate-emitter voltage	V_{GES}			±20	V
Maximum junction temperature	T_{jmax}			175	°C
AC 1 Diode L					
Peak repetitive reverse voltage	V_{RRM}			950	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	58	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	106	W
Maximum junction temperature	T_{jmax}			175	°C
AC 1 Switch H					
Collector-emitter voltage	V_{CES}			950	V
Collector current (DC current)	I_C	$T_j = T_{jmax}$	T_s = 80 °C	77	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	145	W
Gate-emitter voltage	V_{GES}			±20	V
Maximum junction temperature	T_{jmax}			175	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
AC 1 Diode H					
Peak repetitive reverse voltage	V_{RRM}			950	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	58	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	106	W
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Switch L					
Collector-emitter voltage	V_{CES}			950	V
Collector current (DC current)	I_C	$T_j = T_{jmax}$	T_s = 80 °C	77	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	145	W
Gate-emitter voltage	V_{GES}			±20	V
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Diode L					
Peak repetitive reverse voltage	V_{RRM}			950	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	58	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	106	W
Maximum junction temperature	T_{jmax}			175	°C

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
AC 2 Switch H					
Collector-emitter voltage	V_{CES}			950	V
Collector current (DC current)	I_C	$T_j = T_{jmax}$	T_s = 80 °C	77	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	145	W
Gate-emitter voltage	V_{GES}			±20	V
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Diode H					
Peak repetitive reverse voltage	V_{RRM}			950	V
Forward current (DC current)	I_F	$T_j = T_{jmax}$	T_s = 80 °C	58	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		200	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	106	W
Maximum junction temperature	T_{jmax}			175	°C
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
Creepage distance				9,32	mm
Clearance				8,03	mm
Comparative Tracking Index	CTI			≥ 600	

*100 % tested in production

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]	Min	Typ	Max	Unit
AC 1 Switch L										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = V_{GE}$			0,00167	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125 150		1,67 1,94 2,01	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			2	µA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							1,5		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		6500		pF
Output capacitance	C_{oes}	f = 100 kHz	0	25		25		139		pF
Reverse transfer capacitance	C_{res}	f = 100 kHz	0	25		25		20		pF
Gate charge	Q_g		±15		0	25		230		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,66		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		93,12 95,36		ns
Rise time	t_r	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		15,36 16,96		ns
Turn-off delay time	$t_{d(off)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		97,92 121,92		ns
Fall time	t_f	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		27,42 52,24		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=3,3 µC Q_{rFWD}=7 µC	±15	600	100	25 125		2,41 3,13		mWs
Turn-off energy (per pulse)	E_{off}		±15	600	100	25 125		2,55 4,12		mWs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
AC 1 Diode L										
Static										
Forward voltage	V_F				100	25 125 150	2,1	2,64 2,44 2,36	2,8(1)	V
Reverse leakage current	I_R	V_r = 950 V				25			4	µA
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,89		K/W
Dynamic										
Peak recovery current	I_{RM}	d*i*/d*t*=5764 A/µs d*i*/d*t*=5806 A/µs	±15	600	100	25 125		94,87 141,87		A
Reverse recovery time	t_{rr}					25 125		97,59 131,97		ns
Recovered charge	Q_r					25 125		3,3 7		µC
Reverse recovered energy	E_{rec}					25 125		1,33 3,02		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125		5053 4935		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]	Min	Typ	Max	Unit
AC 1 Switch H										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = V_{GE}$			0,00167	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125 150		1,67 1,94 2,01	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			2	µA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							1,5		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		6500		pF
Output capacitance	C_{oes}							139		pF
Reverse transfer capacitance	C_{res}							20		pF
Gate charge	Q_g		±15		0	25		230		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,66		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		93,12 95,36		ns
Rise time	t_r					25 125		15,36 16,96		ns
Turn-off delay time	$t_{d(off)}$					25 125		97,92 121,92		ns
Fall time	t_f					25 125		27,42 52,24		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=3,3 µC Q_{rFWD}=7 µC				25 125		2,41 3,13		mWs
Turn-off energy (per pulse)	E_{off}					25 125		2,55 4,12		mWs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
AC 1 Diode H										
Static										
Forward voltage	V_F				100	25 125 150	2,1	2,64 2,44 2,36	2,8[1]	V
Reverse leakage current	I_R	V_r = 950 V				25			4	µA
Thermal										
Thermal resistance junction to sink[2]	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,89		K/W
Dynamic										
Peak recovery current	I_{RM}	di/dt=5764 A/µs di/dt=5806 A/µs	±15	600	100	25 125		94,87 141,87		A
Reverse recovery time	t_{rr}					25 125		97,59 131,97		ns
Recovered charge	Q_r					25 125		3,3 7		µC
Reverse recovered energy	E_{rec}					25 125		1,33 3,02		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125		5053 4935		A/µs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
AC 2 Switch L										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	V_{CE} = V_{GE}			0,00167	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125 150		1,67 1,94 2,01	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			2	µA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							1,5		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		6500		pF
Output capacitance	C_{oes}							139		pF
Reverse transfer capacitance	C_{res}							20		pF
Gate charge	Q_g		±15		0	25		230		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,66		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		93,76 95,36		ns
Rise time	t_r					25 125		14,08 15,04		ns
Turn-off delay time	$t_{d(off)}$					25 125		97,6 120,96		ns
Fall time	t_f					25 125		26,9 51,45		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=3,27 µC Q_{rFWD}=7,04 µC				25 125		2,32 2,92		mWs
Turn-off energy (per pulse)	E_{off}					25 125		2,63 4,12		mWs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
AC 2 Diode L										
Static										
Forward voltage	V_F				100	25 125 150	2,1	2,64 2,44 2,36	2,8(1)	V
Reverse leakage current	I_R	V_r = 950 V				25			4	µA
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,89		K/W
Dynamic										
Peak recovery current	I_{RM}	d*i*/d*t*=6069 A/µs d*i*/d*t*=6151 A/µs	±15	600	100	25 125		101,3 150,65		A
Reverse recovery time	t_{rr}					25 125		88,39 125,56		ns
Recovered charge	Q_r					25 125		3,27 7,04		µC
Reverse recovered energy	E_{rec}					25 125		1,33 3,1		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125		5700 5434		A/µs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
AC 2 Switch H										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$	$V_{CE} = V_{GE}$			0,00167	25	4,35	5,1	5,85	V
Collector-emitter saturation voltage	V_{CEsat}		15		100	25 125 150		1,67 1,94 2,01	2,35(1)	V
Collector-emitter cut-off current	I_{CES}		0	950		25			2	µA
Gate-emitter leakage current	I_{GES}		20	0		25			100	nA
Internal gate resistance	r_g							1,5		Ω
Input capacitance	C_{ies}	f = 100 kHz	0	25		25		6500		pF
Output capacitance	C_{oes}							139		pF
Reverse transfer capacitance	C_{res}							20		pF
Gate charge	Q_g		±15		0	25		230		nC
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,66		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 4 Ω R_{goff} = 4 Ω	±15	600	100	25 125		93,76 95,36		ns
Rise time	t_r					25 125		14,08 15,04		ns
Turn-off delay time	$t_{d(off)}$					25 125		97,6 120,96		ns
Fall time	t_f					25 125		26,9 51,45		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=3,27 µC Q_{rFWD}=7,04 µC				25 125		2,32 2,92		mWs
Turn-off energy (per pulse)	E_{off}					25 125		2,63 4,12		mWs

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]	Min	Typ	Max	Unit
AC 2 Diode H										
Static										
Forward voltage	V_F				100	25 125 150	2,1	2,64 2,44 2,36	2,8(1)	V
Reverse leakage current	I_R	V_r = 950 V				25			4	µA
Thermal										
Thermal resistance junction to sink(2)	$R_{th(j-s)}$	λ_{paste} = 5,2 W/mK (PTM)						0,89		K/W
Dynamic										
Peak recovery current	I_{RM}	d*i*/d*t*=6069 A/µs d*i*/d*t*=6151 A/µs	±15	600	100	25 125		101,3 150,65		A
Reverse recovery time	t_{rr}					25 125		88,39 125,56		ns
Recovered charge	Q_r					25 125		3,27 7,04		µC
Reverse recovered energy	E_{rec}					25 125		1,33 3,1		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125		5700 5434		A/µs

Characteristic Values

Parameter	Symbol	Conditions					Values			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	
Thermistor										
Static										
Rated resistance	R					25		22		kΩ
Deviation of R100	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P					25		130		mW
Power dissipation constant	d					25		1,5		mW/K
B-value	$B_{(25/50)}$	Tol. ±1 %						3962		K
B-value	$B_{(25/100)}$	Tol. ±1 %						4000		K
Vincotech Thermistor Reference									I	

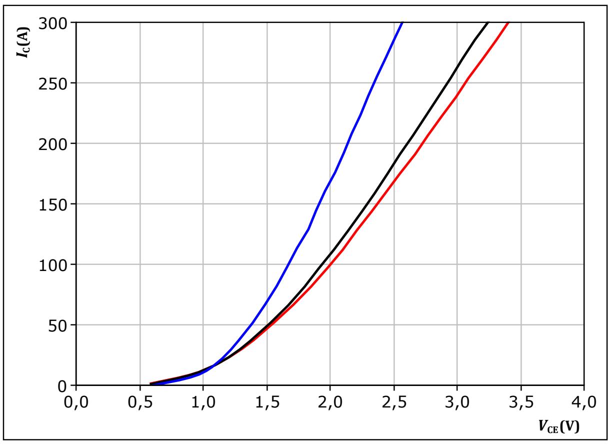
(1) Value at chip level
(2) Only valid with pre-applied Vincotech thermal interface material.

AC 1 Switch L Characteristics

figure 1. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

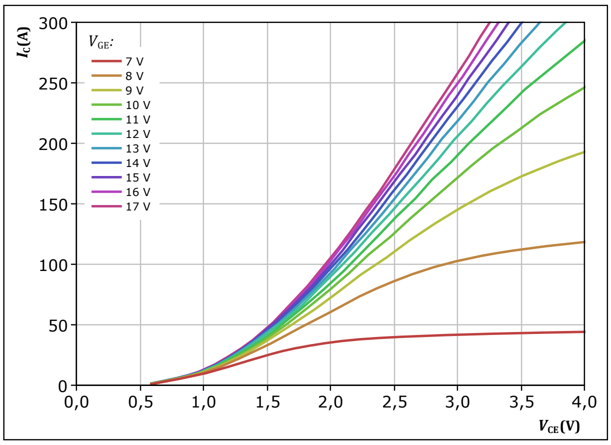


t_p = 250 µs
V_{GE} = 15 V
T_j: 25 °C, 125 °C, 150 °C

figure 2. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

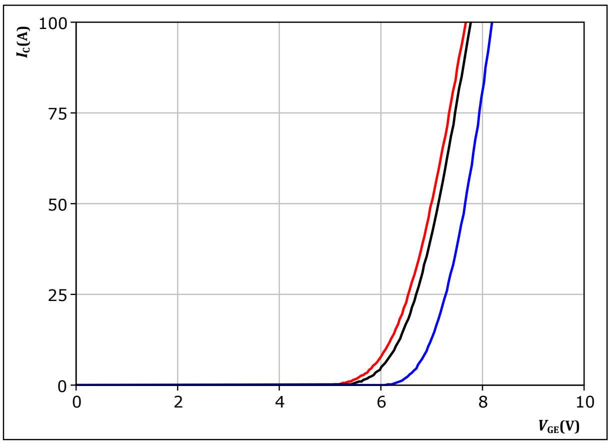


t_p = 250 µs
T_j = 150 °C
V_{GE} from 7 V to 17 V in steps of 1 V

figure 3. **IGBT**

Typical transfer characteristics

I_C = f(V_{GE})

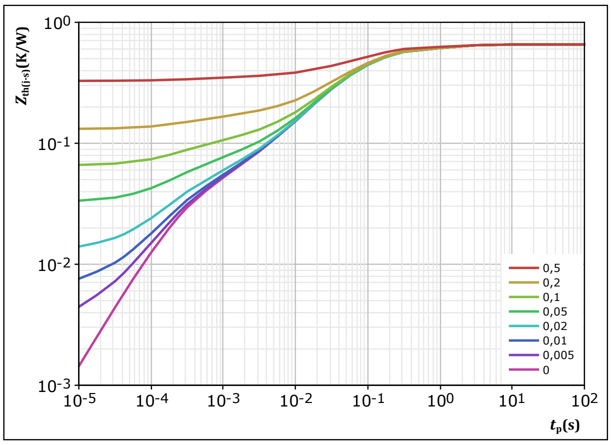


t_p = 250 µs
V_{CE} = 10 V
T_j: 25 °C, 125 °C, 150 °C

figure 4. **IGBT**

Transient thermal impedance as a function of pulse width

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



D = t_p / T
$R_{th(j-s)}$ = 0,656 K/W

IGBT thermal model values

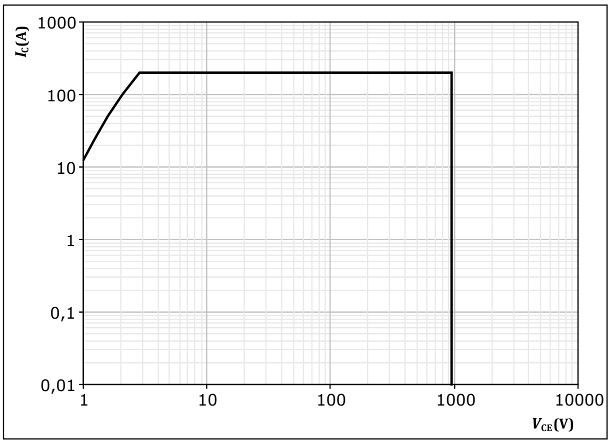
R (K/W)	τ (s)
8,75E-02	1,42E+00
3,39E-01	1,02E-01
1,74E-01	2,16E-02
2,53E-02	1,80E-03
3,08E-02	2,55E-04

AC 1 Switch L Characteristics

figure 5.	IGBT

Safe operating area

I_C = f(V_{CE})



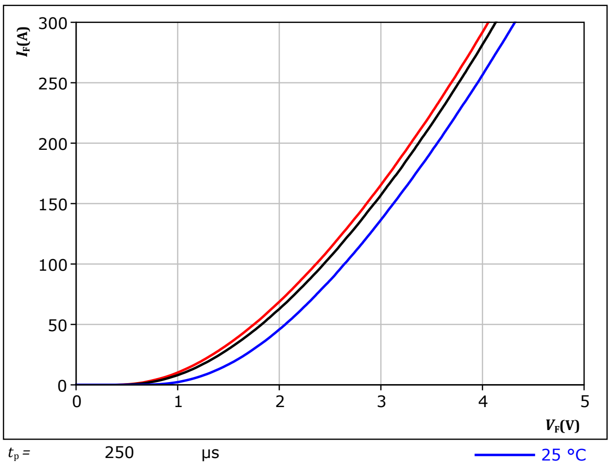
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 1 Diode L Characteristics

figure 6. **FWD**

Typical forward characteristics

I_F = f(V_F)



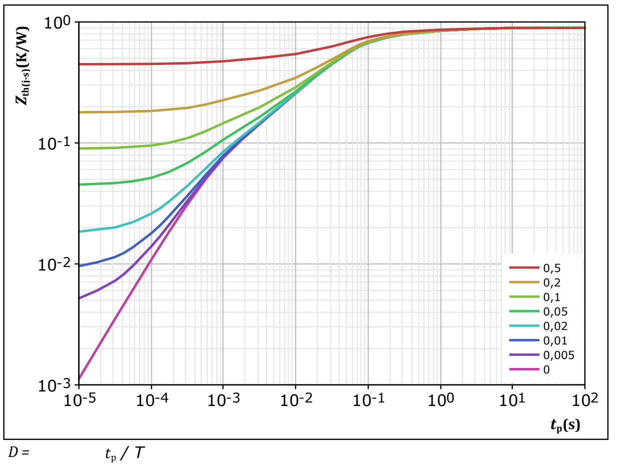
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 7. **FWD**

Transient thermal impedance as a function of pulse width

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



D = t_p / T

$R_{th(j-s)}$ = 0,895 K/W

FWD thermal model values

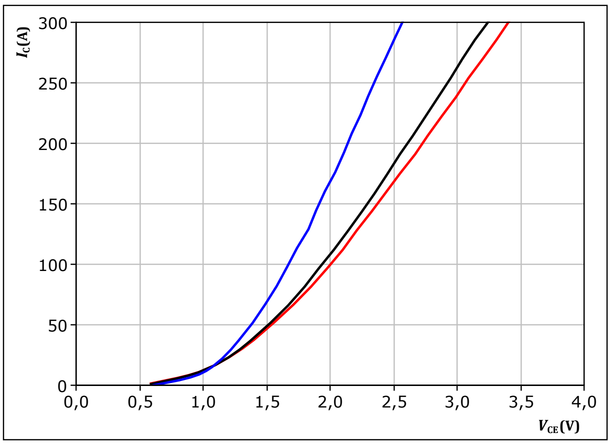
R (K/W)	τ (s)
5,60E-02	2,84E+00
1,11E-01	4,12E-01
5,01E-01	5,45E-02
1,52E-01	1,00E-02
7,48E-02	8,47E-04

AC 1 Switch H Characteristics

figure 8. **IGBT**

Typical output characteristics

I_C = f(V_{CE})



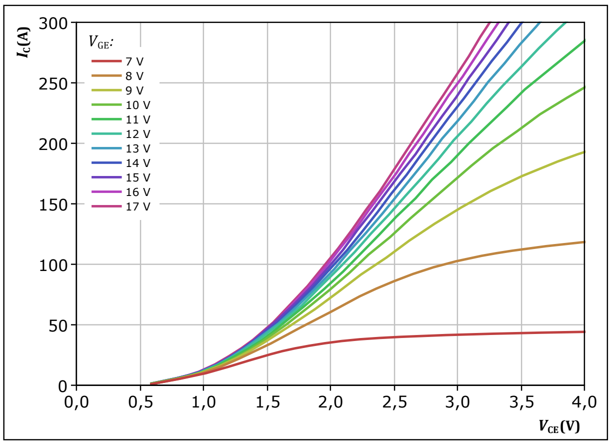
t_p =	250	µs
V_{GE} =	15	V

T_j: 25 °C, 125 °C, 150 °C

figure 9. **IGBT**

Typical output characteristics

I_C = f(V_{CE})



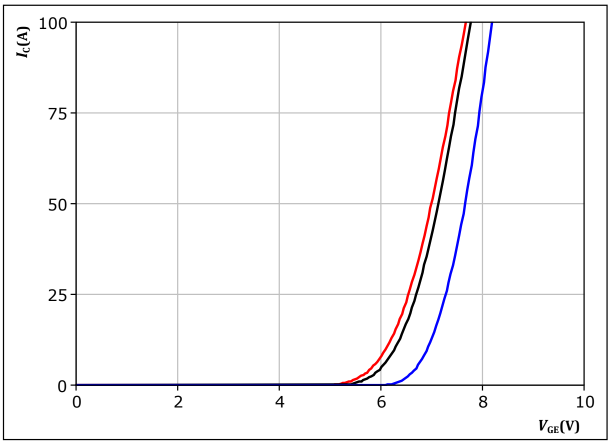
t_p =	250	µs
T_j =	150	°C

V_{GE} from 7 V to 17 V in steps of 1 V

figure 10. **IGBT**

Typical transfer characteristics

I_C = f(V_{GE})



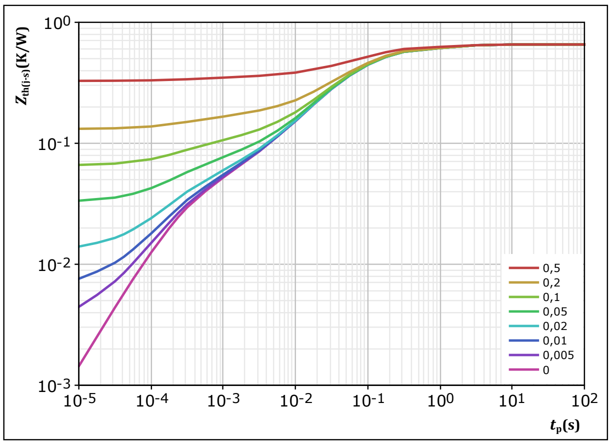
t_p =	250	µs
V_{CE} =	10	V

T_j: 25 °C, 125 °C, 150 °C

figure 11. **IGBT**

Transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	0,656	K/W

IGBT thermal model values

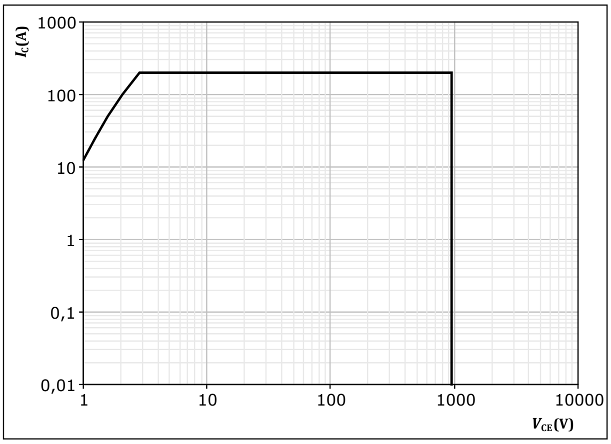
R (K/W)	τ (s)
8,75E-02	1,42E+00
3,39E-01	1,02E-01
1,74E-01	2,16E-02
2,53E-02	1,80E-03
3,08E-02	2,55E-04

AC 1 Switch H Characteristics

figure 12.	IGBT

Safe operating area

I_C = f(V_{CE})



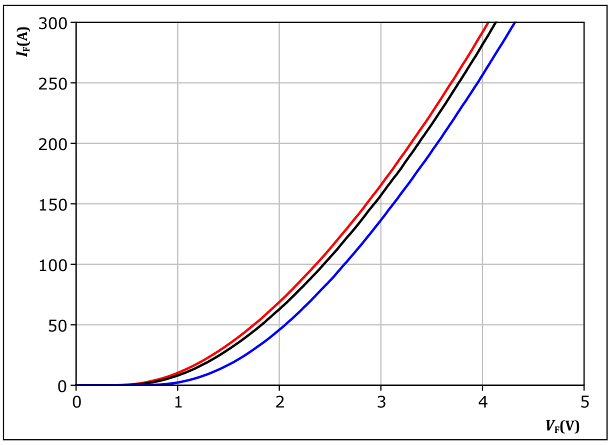
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 1 Diode H Characteristics

figure 13. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



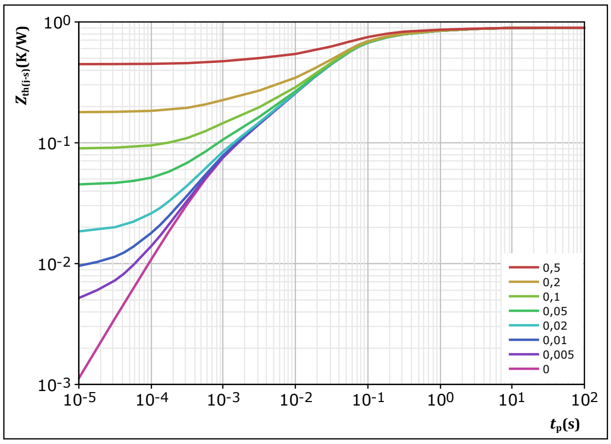
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 14. **FWD**

Transient thermal impedance as a function of pulse width

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



$D = t_p / T$

$R_{th(j\text{-}s)}$ = 0,895 K/W

FWD thermal model values

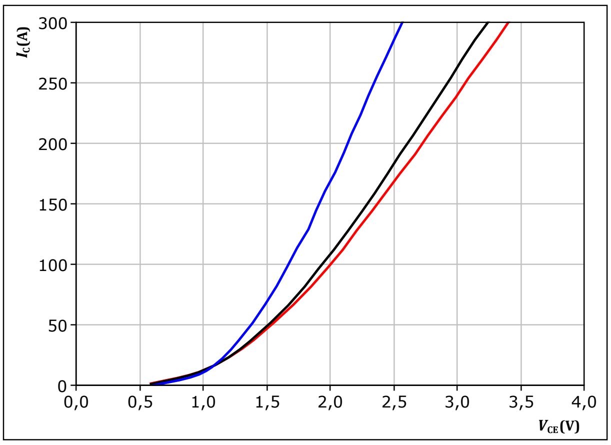
R (K/W)	τ (s)
5,60E-02	2,84E+00
1,11E-01	4,12E-01
5,01E-01	5,45E-02
1,52E-01	1,00E-02
7,48E-02	8,47E-04

AC 2 Switch L Characteristics

figure 15. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$



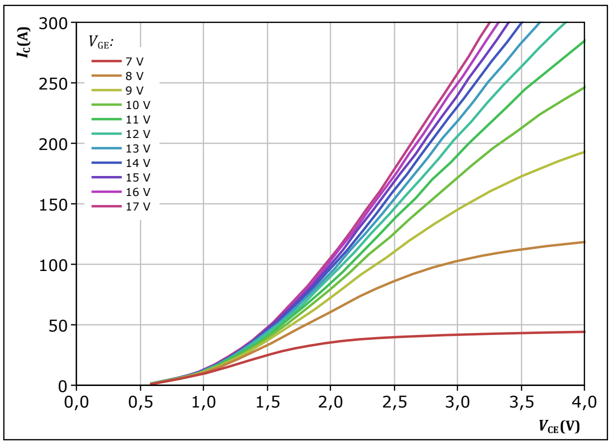
t_p =	250	μs
V_{GE} =	15	V

T_j: 25 °C, 125 °C, 150 °C

figure 16. **IGBT**

Typical output characteristics

$I_C = f(V_{CE})$



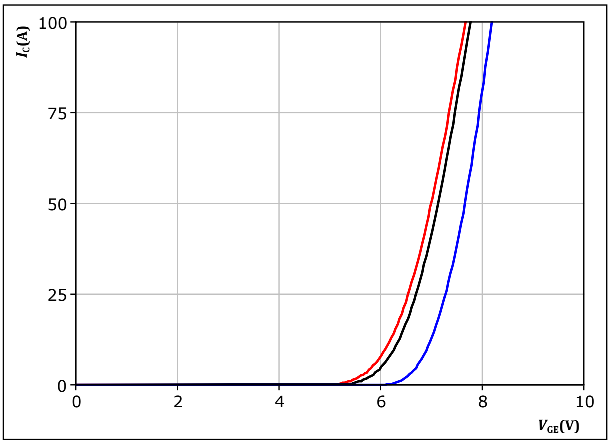
t_p =	250	μs
T_j =	150	°C

V_{GE} from 7 V to 17 V in steps of 1 V

figure 17. **IGBT**

Typical transfer characteristics

$I_C = f(V_{GE})$



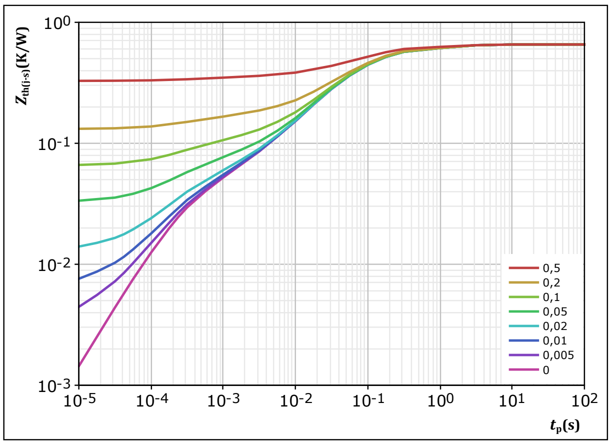
t_p =	250	μs
V_{CE} =	10	V

T_j: 25 °C, 125 °C, 150 °C

figure 18. **IGBT**

Transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	0,656	K/W

IGBT thermal model values

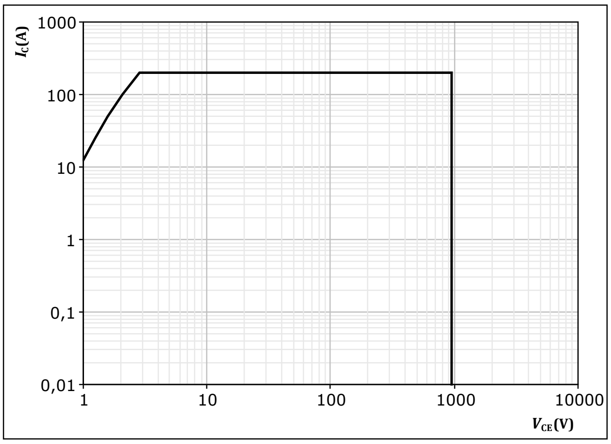
R (K/W)	τ (s)
8,75E-02	1,42E+00
3,39E-01	1,02E-01
1,74E-01	2,16E-02
2,53E-02	1,80E-03
3,08E-02	2,55E-04

AC 2 Switch L Characteristics

figure 19.	IGBT

Safe operating area

$I_C = f(V_{CE})$



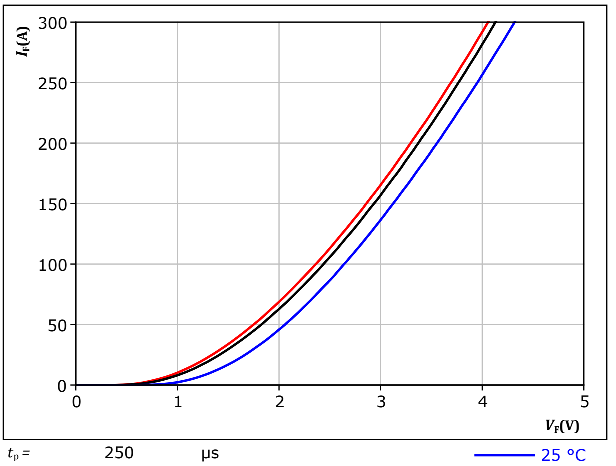
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 2 Diode L Characteristics

figure 20. **FWD**

Typical forward characteristics

$I_F = f(V_F)$



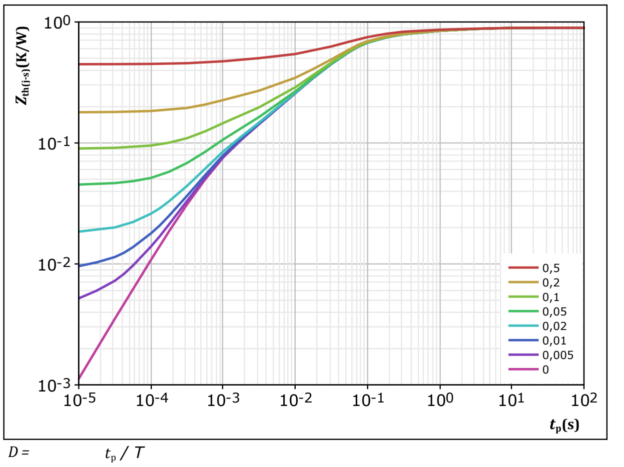
t_p = 250 μs

T_j: 25 °C, 125 °C, 150 °C

figure 21. **FWD**

Transient thermal impedance as a function of pulse width

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



$D = t_p / T$

$R_{th(j-s)}$ = 0,895 K/W

FWD thermal model values

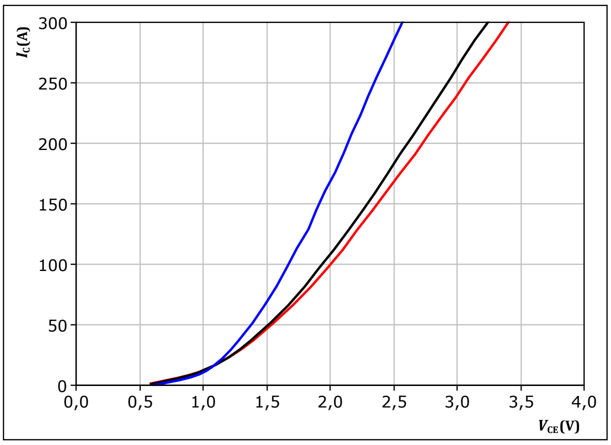
R (K/W)	τ (s)
5,60E-02	2,84E+00
1,11E-01	4,12E-01
5,01E-01	5,45E-02
1,52E-01	1,00E-02
7,48E-02	8,47E-04

AC 2 Switch H Characteristics

figure 22. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

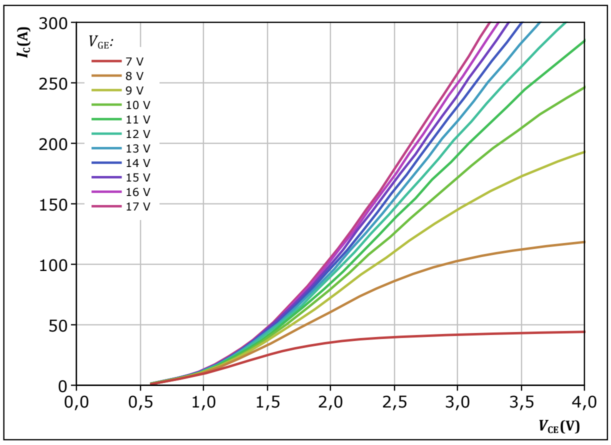


t_p =	250	µs		25 °C
V_{GE} =	15	V	T_j:	125 °C
				150 °C

figure 23. **IGBT**

Typical output characteristics

I_C = f(V_{CE})



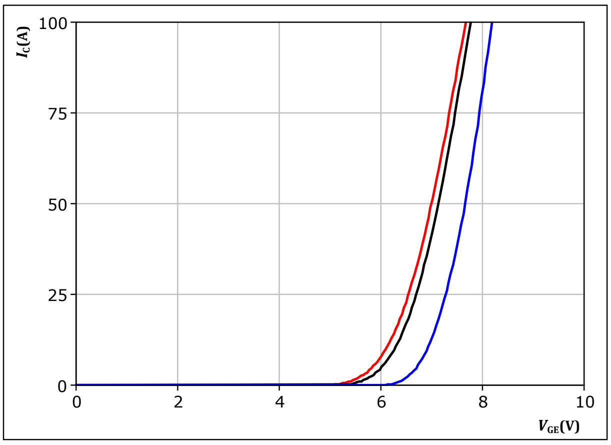
t_p =	250	µs
T_j =	150	°C

V_{GE} from 7 V to 17 V in steps of 1 V

figure 24. **IGBT**

Typical transfer characteristics

I_C = f(V_{GE})

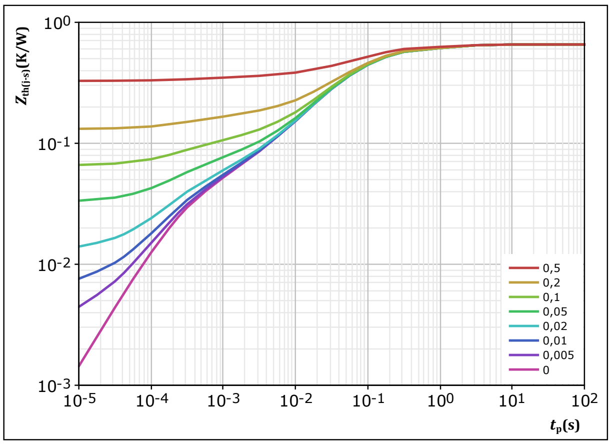


t_p =	250	µs		25 °C
V_{CE} =	10	V	T_j:	125 °C
				150 °C

figure 25. **IGBT**

Transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	0,656	K/W

IGBT thermal model values

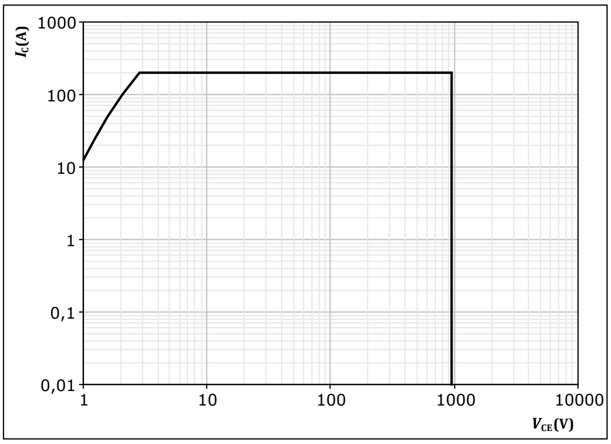
R (K/W)	τ (s)
8,75E-02	1,42E+00
3,39E-01	1,02E-01
1,74E-01	2,16E-02
2,53E-02	1,80E-03
3,08E-02	2,55E-04

AC 2 Switch H Characteristics

figure 26. **IGBT**

Safe operating area

$I_C = f(V_{CE})$



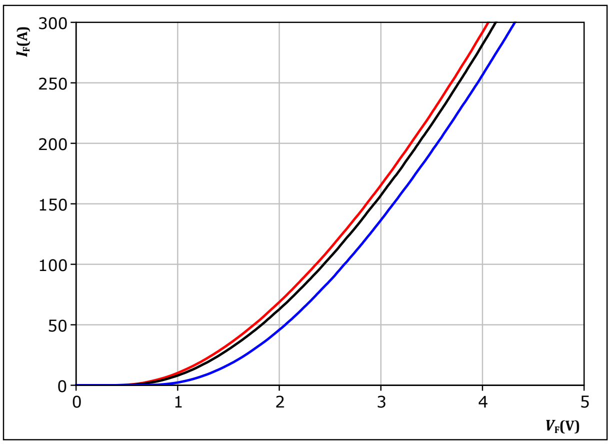
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 2 Diode H Characteristics

figure 27. FWD

Typical forward characteristics

$I_F = f(V_F)$



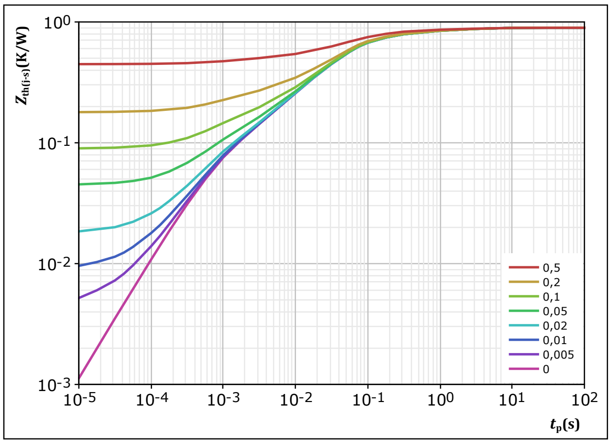
t_p = 250 µs

T_j: 25 °C, 125 °C, 150 °C

figure 28. FWD

Transient thermal impedance as a function of pulse width

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



$D = t_p / T$

$R_{th(j-s)}$ = 0,895 K/W

FWD thermal model values

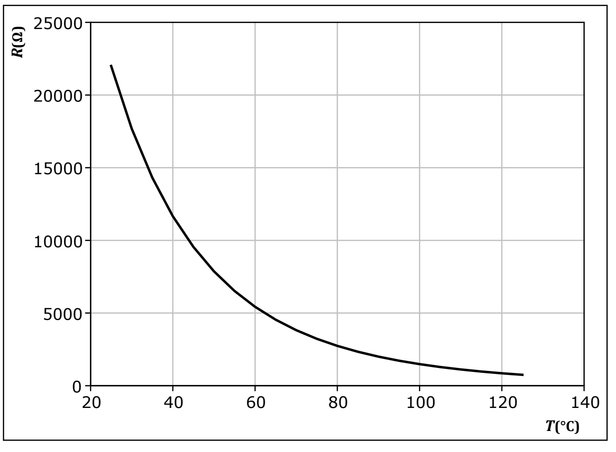
R (K/W)	τ (s)
5,60E-02	2,84E+00
1,11E-01	4,12E-01
5,01E-01	5,45E-02
1,52E-01	1,00E-02
7,48E-02	8,47E-04

Thermistor Characteristics

figure 29. **Thermistor**

Typical NTC characteristic as function of temperature

$R_T = f(T)$

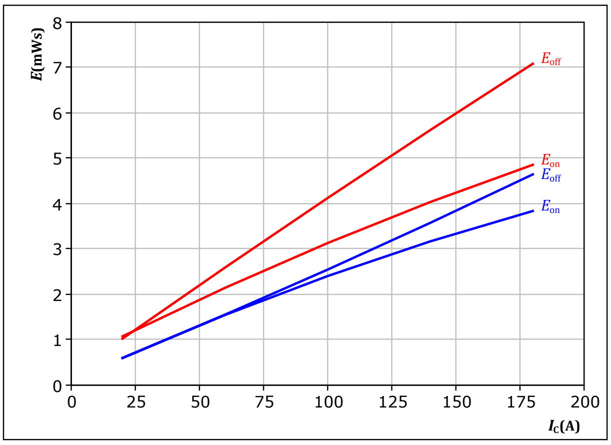


AC 1 Switching Characteristics L

figure 30. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



With an inductive load at

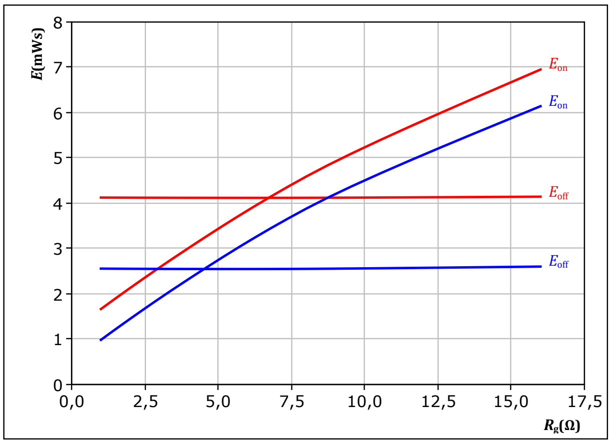
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 31. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

$E = f(R_g)$



With an inductive load at

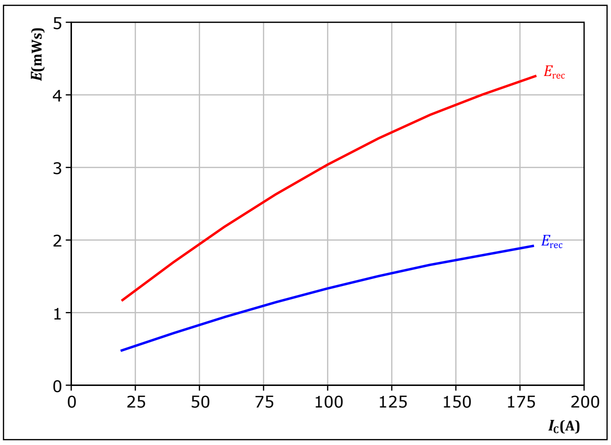
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 32. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



With an inductive load at

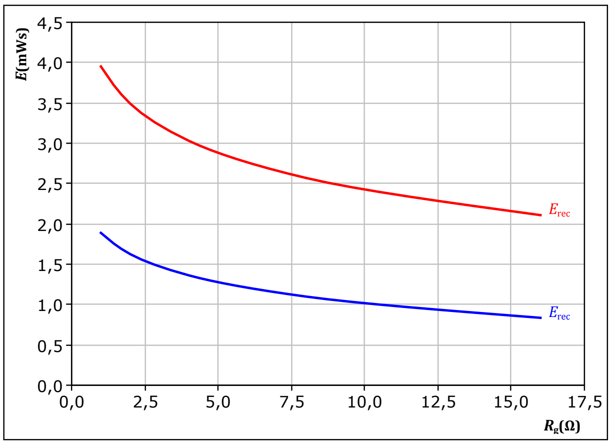
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 33. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

T_j: 25 °C / 125 °C

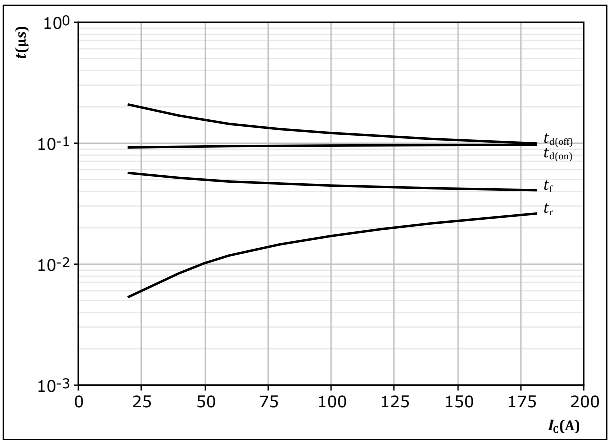
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

AC 1 Switching Characteristics L

figure 34. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



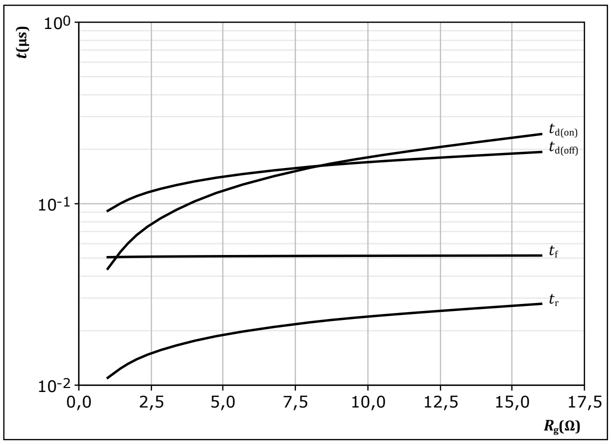
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 35. **IGBT**

Typical switching times as a function of IGBT turn on gate resistor

t = f(R_g)



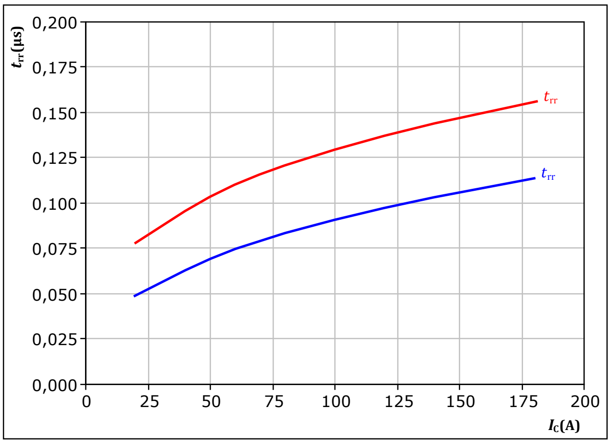
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 36. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

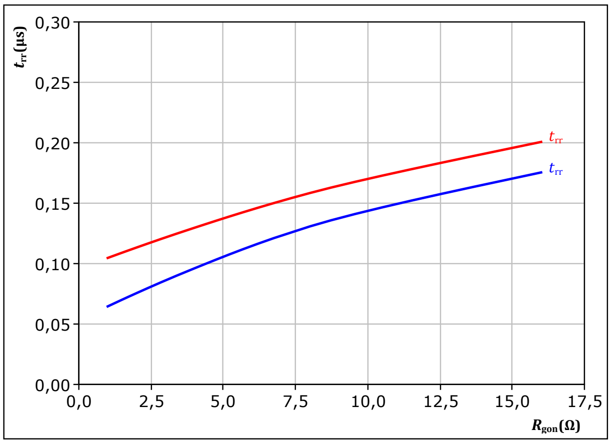
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C, 125 °C

figure 37. **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} =	600	V
V_{GE} =	±15	V
I_C =	100	A

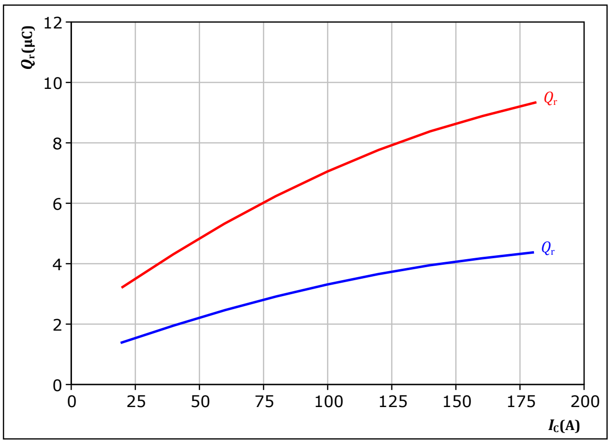
T_j: 25 °C, 125 °C

AC 1 Switching Characteristics L

figure 38. FWD

Typical recovered charge as a function of collector current

$Q_r = f(I_C)$



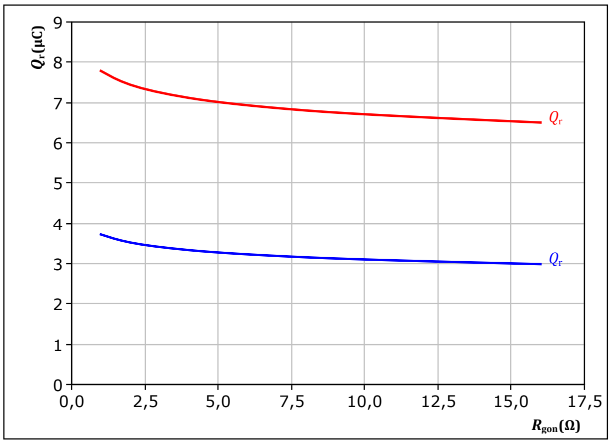
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C
V_{GE} =	±15	V	
R_{gon} =	4	Ω	

figure 39. FWD

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

$Q_r = f(R_{gon})$



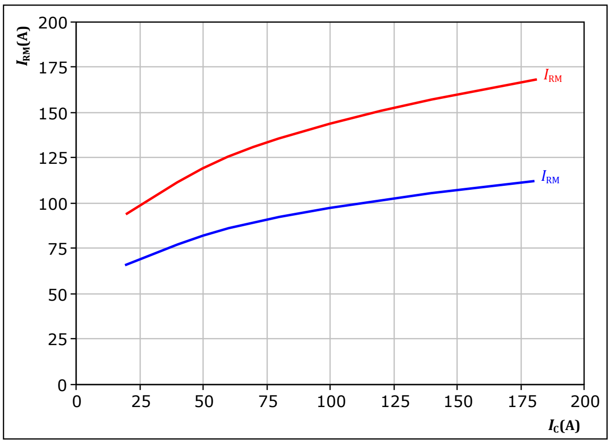
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C
V_{GE} =	±15	V	
I_C =	100	A	

figure 40. FWD

Typical peak reverse recovery current as a function of collector current

$I_{RM} = f(I_C)$



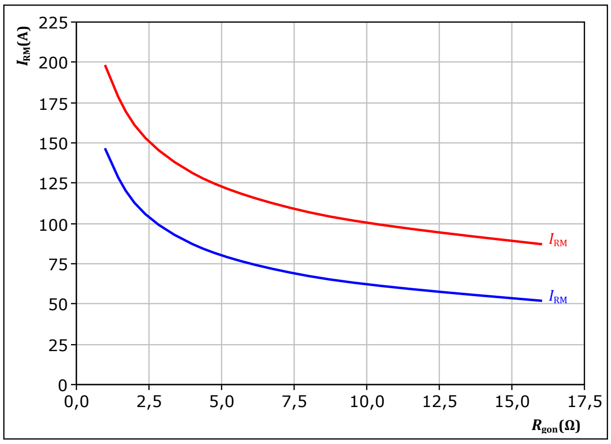
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C
V_{GE} =	±15	V	
R_{gon} =	4	Ω	

figure 41. 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

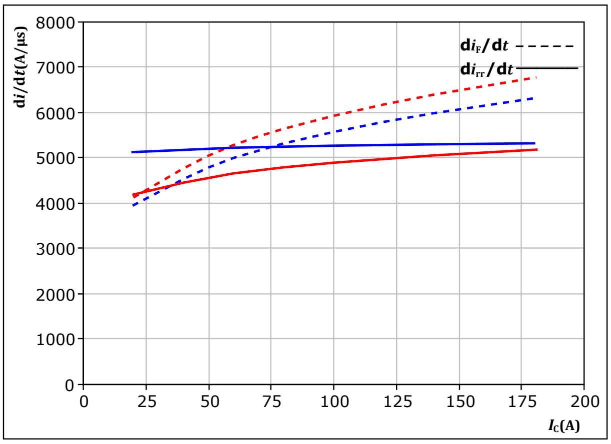
V_{CE} =	600	V	T_j: 25 °C / 125 °C
V_{GE} =	±15	V	
I_C =	100	A	

AC 1 Switching Characteristics L

figure 42. **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)



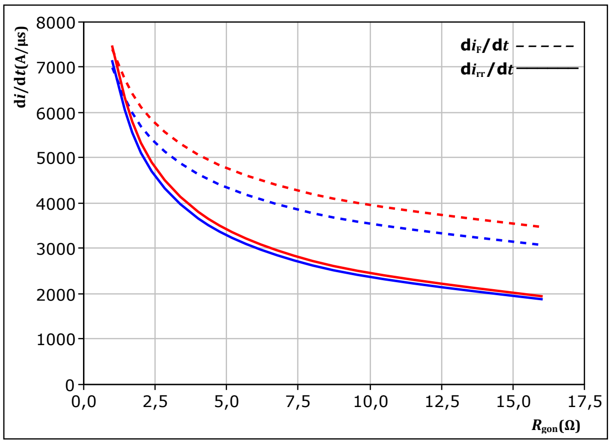
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		

figure 43. **FWD**

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

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



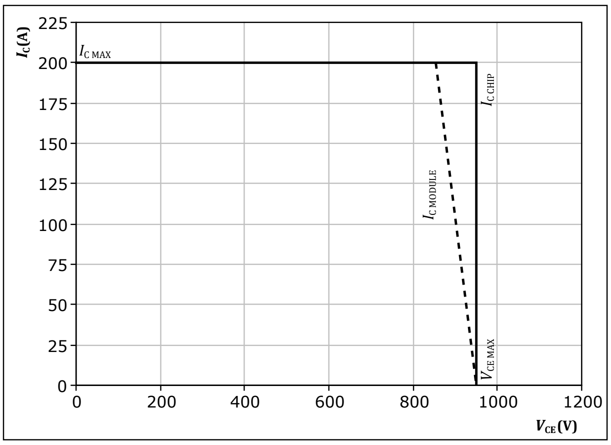
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	100	A		

figure 44. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



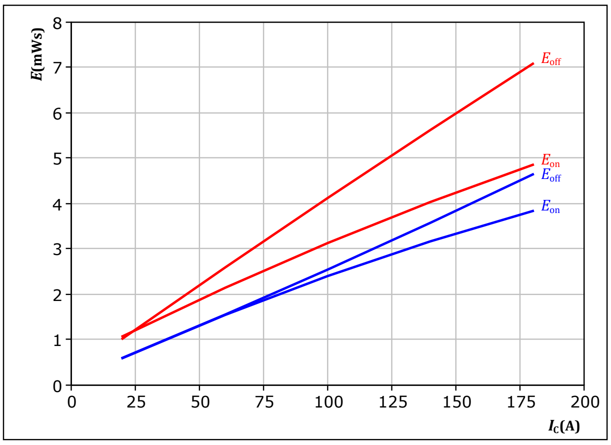
At	T_j =	125	°C
	R_{gon} =	4	Ω
	R_{goff} =	4	Ω

AC 1 Switching Characteristics H

figure 45. **IGBT**

Typical switching energy losses as a function of collector current

E = f(I_C)



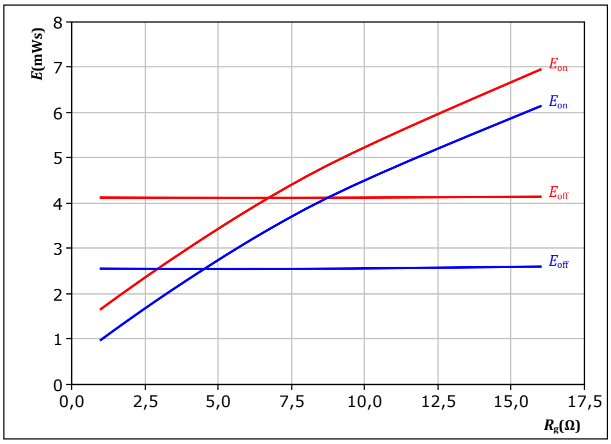
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		
R_{goff} =	4	Ω		

figure 46. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

E = f(R_g)



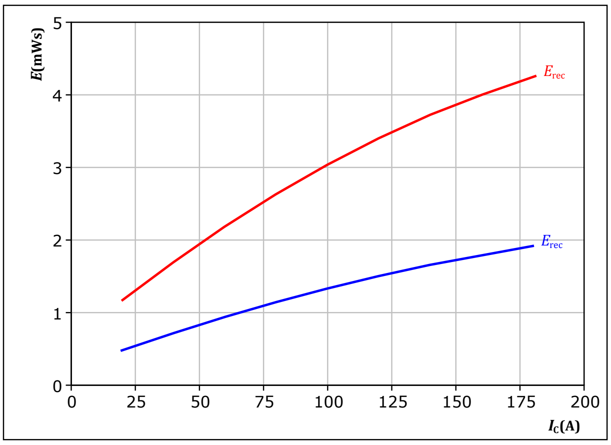
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	100	A		

figure 47. **FWD**

Typical reverse recovered energy loss as a function of collector current

E_{rec} = f(I_C)



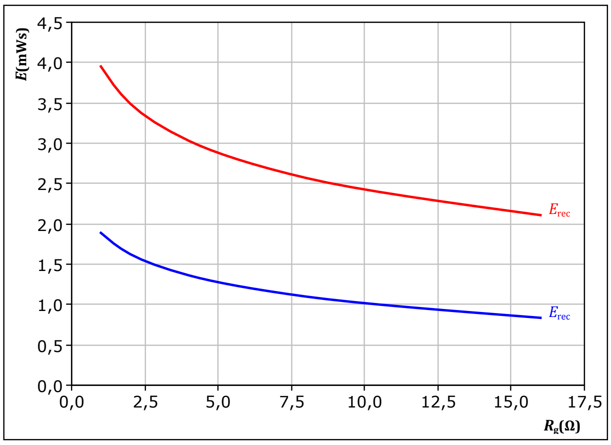
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		

figure 48. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

E_{rec} = f(R_g)



With an inductive load at

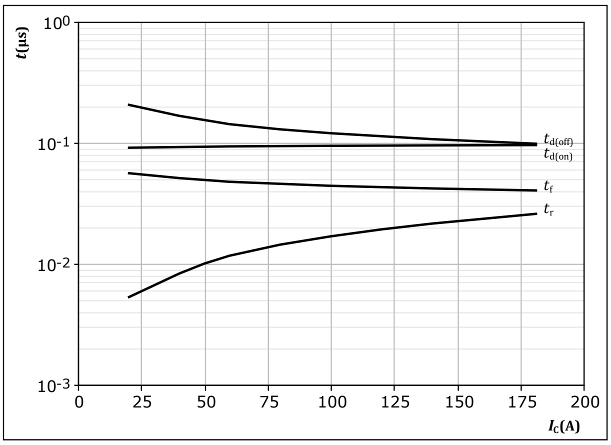
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	100	A		

AC 1 Switching Characteristics H

figure 49. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



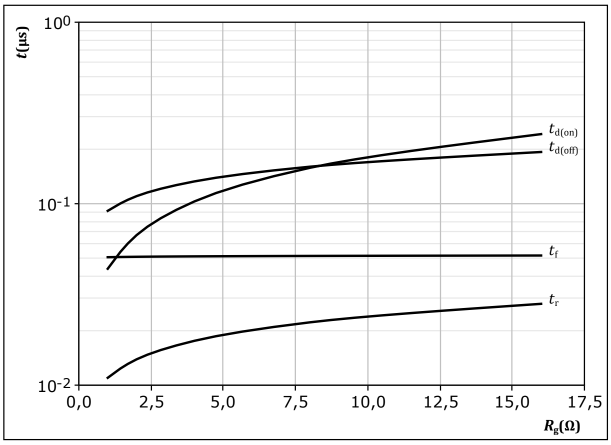
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 50. **IGBT**

Typical switching times as a function of IGBT turn on gate resistor

t = f(R_g)



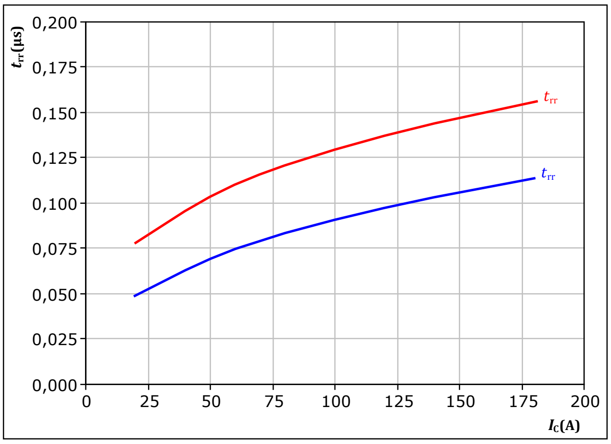
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 51. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

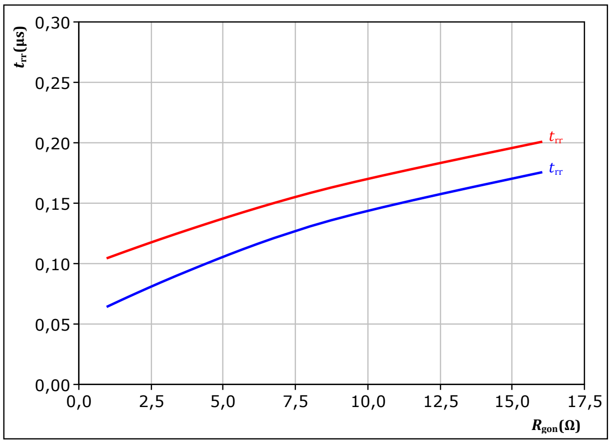
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C / 125 °C

figure 52. **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} =	600	V
V_{GE} =	±15	V
I_C =	100	A

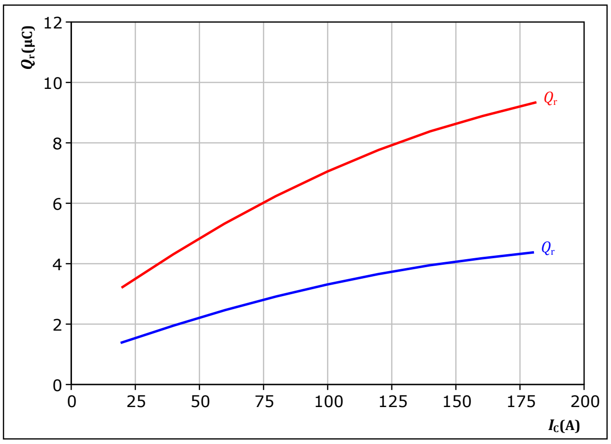
T_j: 25 °C / 125 °C

AC 1 Switching Characteristics H

figure 53. **FWD**

Typical recovered charge as a function of collector current

Q_r = f(I_C)



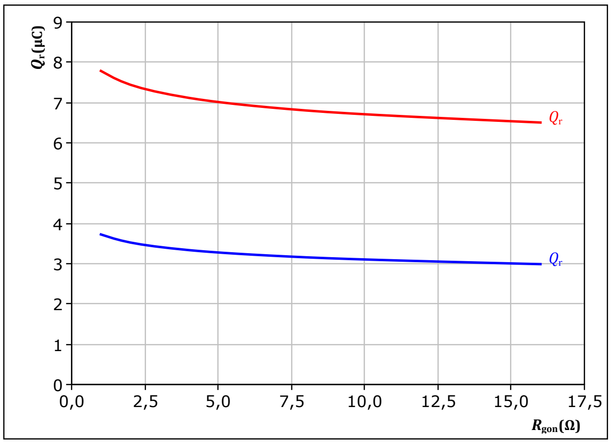
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C (blue), 125 °C (red)
V_{GE} =	±15	V	
R_{gon} =	4	Ω	

figure 54. **FWD**

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

Q_r = f(R_{gon})



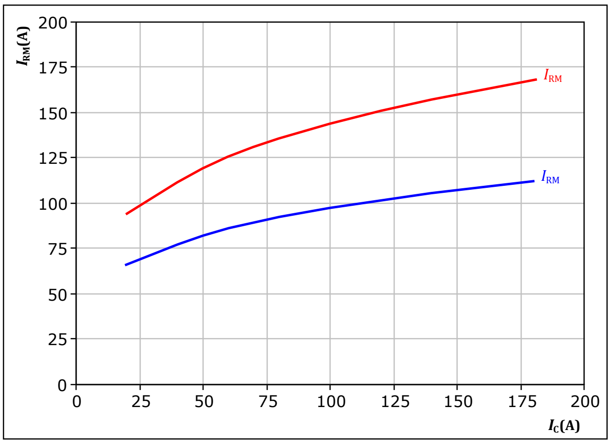
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C (blue), 125 °C (red)
V_{GE} =	±15	V	
I_C =	100	A	

figure 55. **FWD**

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



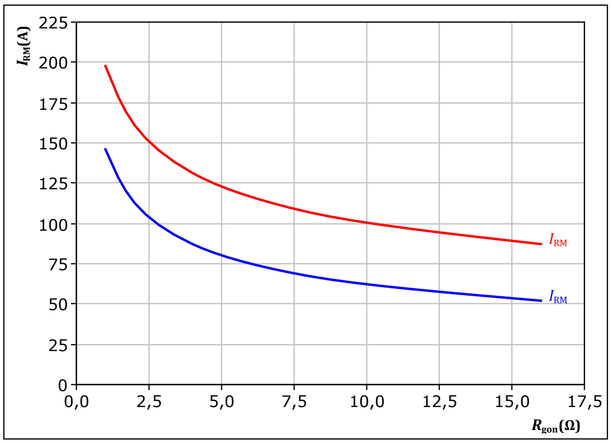
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C (blue), 125 °C (red)
V_{GE} =	±15	V	
R_{gon} =	4	Ω	

figure 56. **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

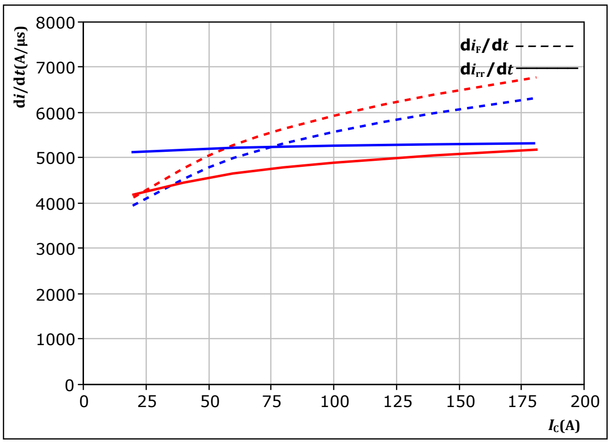
V_{CE} =	600	V	T_j: 25 °C (blue), 125 °C (red)
V_{GE} =	±15	V	
I_C =	100	A	

AC 1 Switching Characteristics H

figure 57. **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

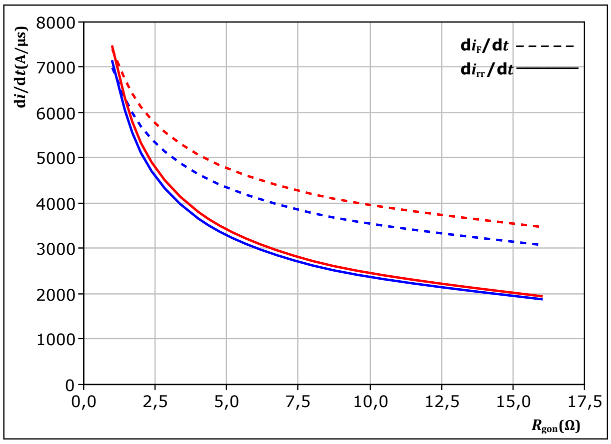
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C, 125 °C

figure 58. **FWD**

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

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



With an inductive load at

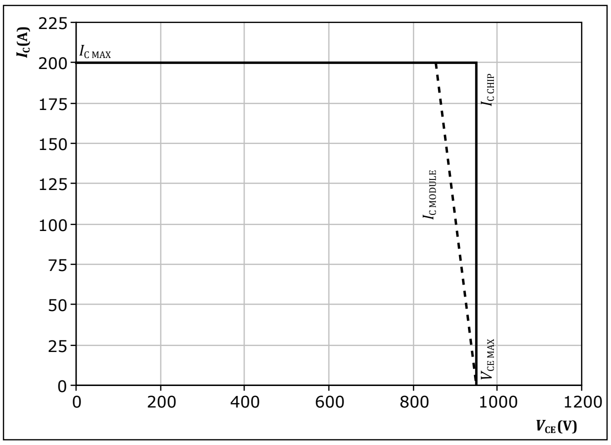
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

T_j: 25 °C, 125 °C

figure 59. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



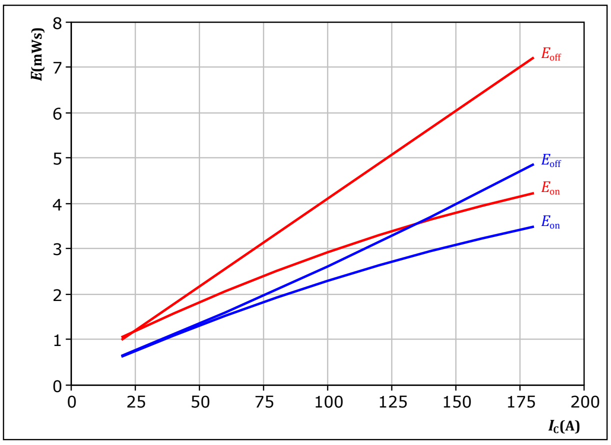
At			
	T_j =	125	°C
	R_{gon} =	4	Ω
	R_{goff} =	4	Ω

AC 2 Switching Characteristics L

figure 60. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



With an inductive load at

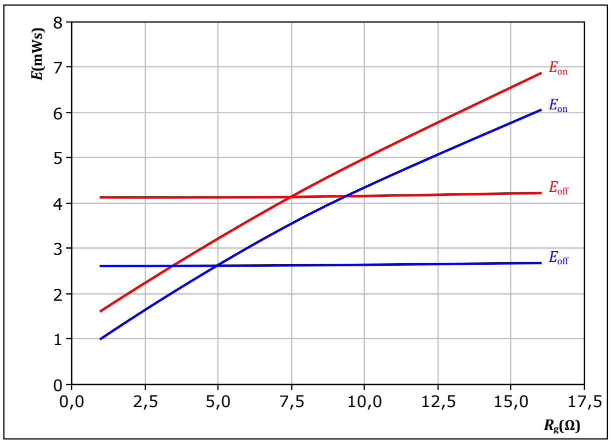
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

T_j: 25 °C / 125 °C

figure 61. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

$E = f(R_g)$



With an inductive load at

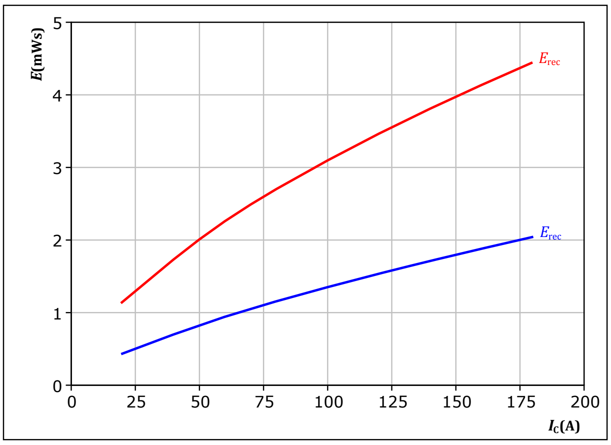
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

T_j: 25 °C / 125 °C

figure 62. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



With an inductive load at

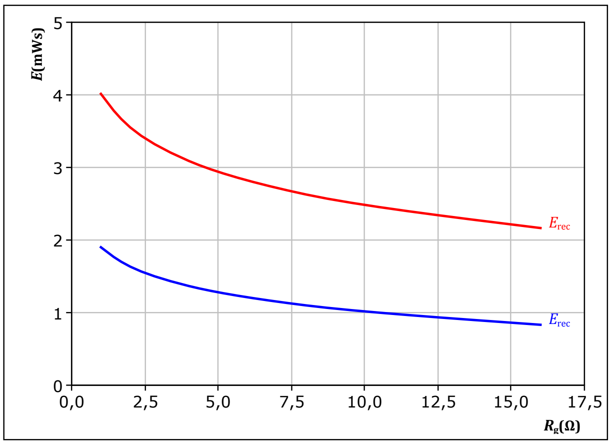
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C / 125 °C

figure 63. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

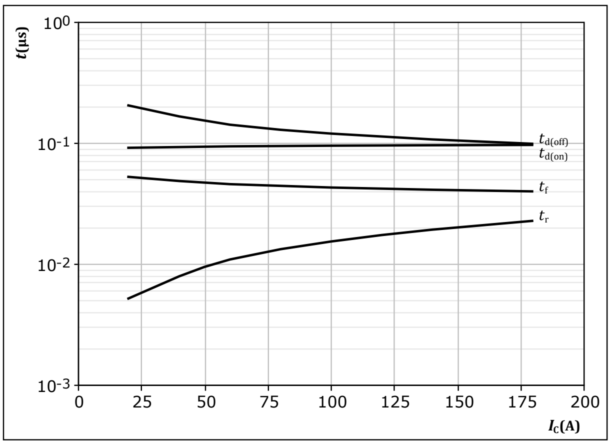
T_j: 25 °C / 125 °C

AC 2 Switching Characteristics L

figure 64. IGBT

Typical switching times as a function of collector current

t = f(I_C)



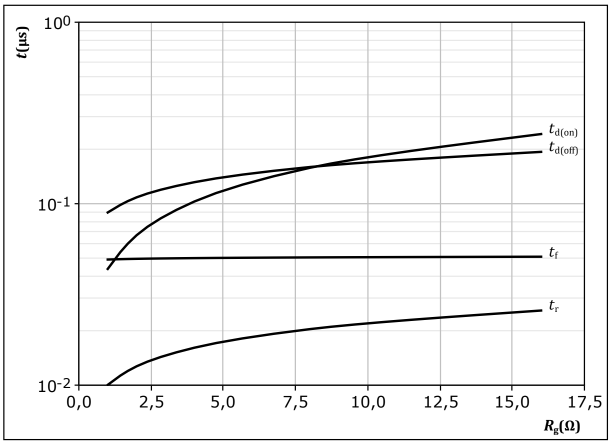
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 65. IGBT

Typical switching times as a function of IGBT turn on gate resistor

t = f(R_g)



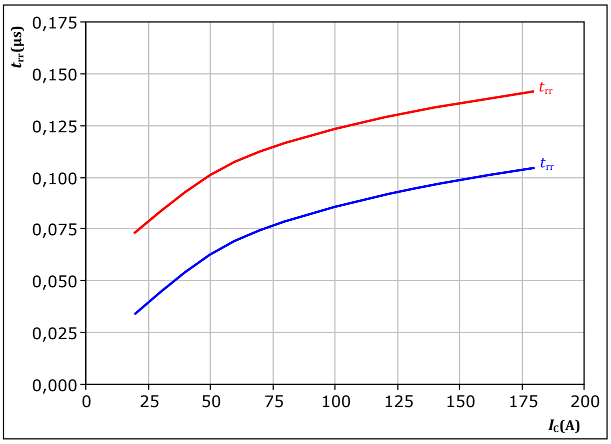
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 66. FWD

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

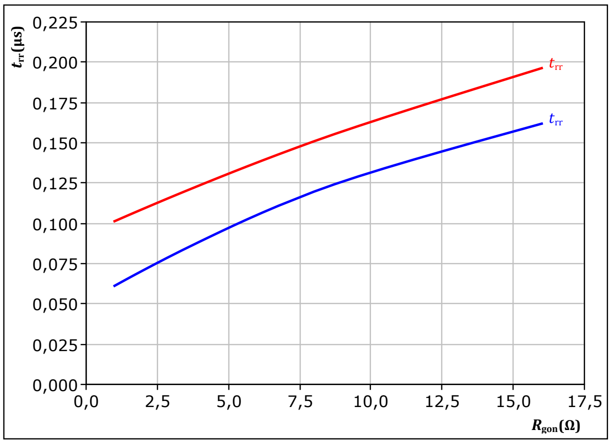
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

T_j: 25 °C, 125 °C

figure 67. 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} =	600	V
V_{GE} =	±15	V
I_C =	100	A

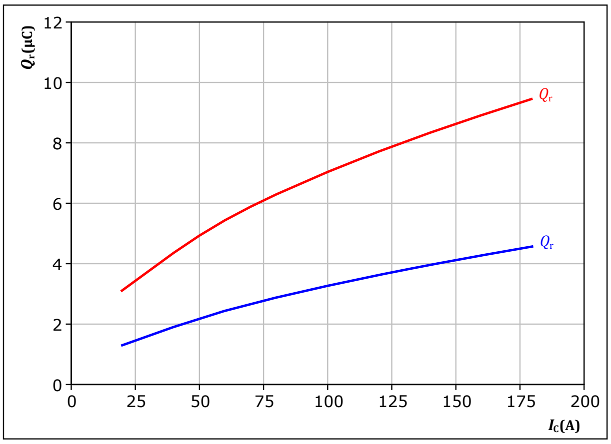
T_j: 25 °C, 125 °C

AC 2 Switching Characteristics L

figure 68. **FWD**

Typical recovered charge as a function of collector current

Q_r = f(I_C)



With an inductive load at

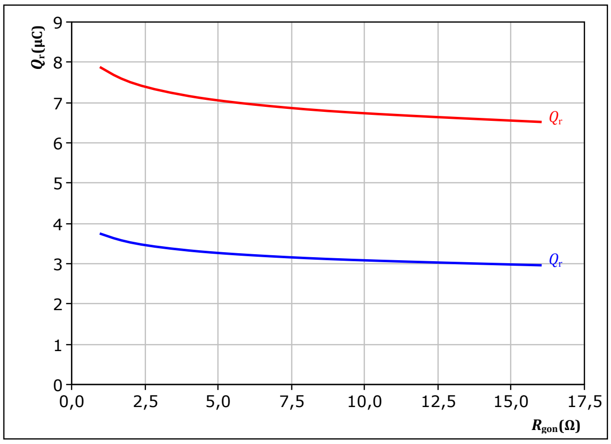
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 69. **FWD**

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

Q_r = f(R_{gon})



With an inductive load at

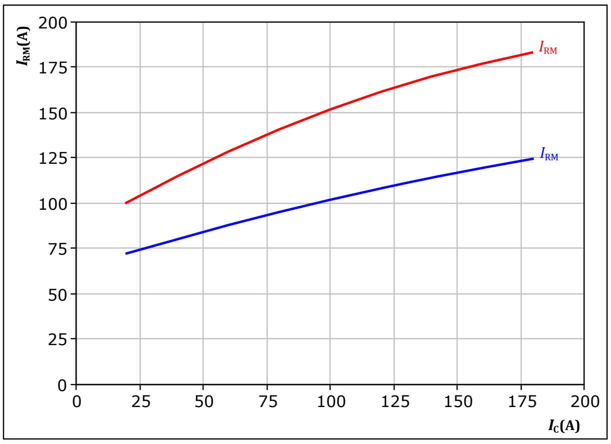
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 70. **FWD**

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



With an inductive load at

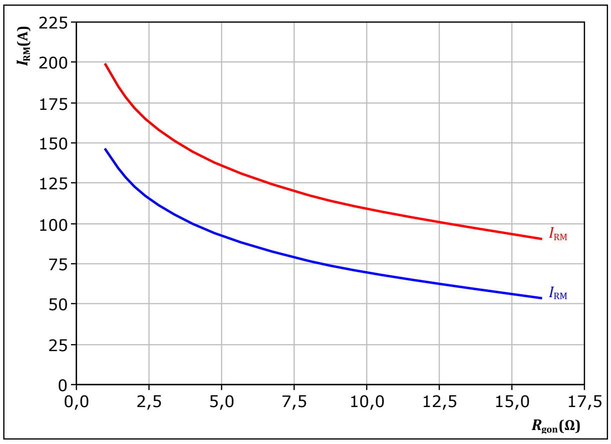
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 71. **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

T_j: 25 °C / 125 °C

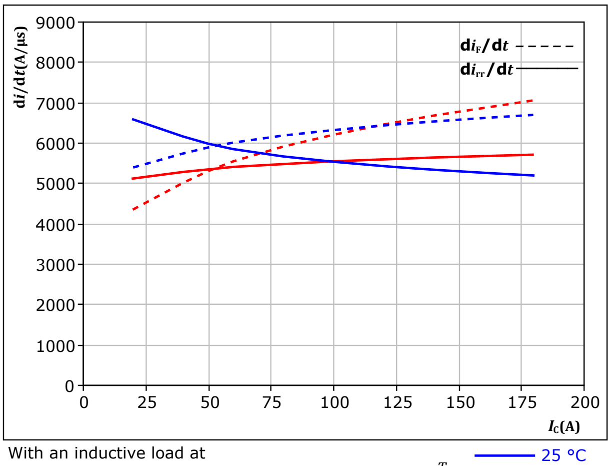
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

AC 2 Switching Characteristics L

figure 72. **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

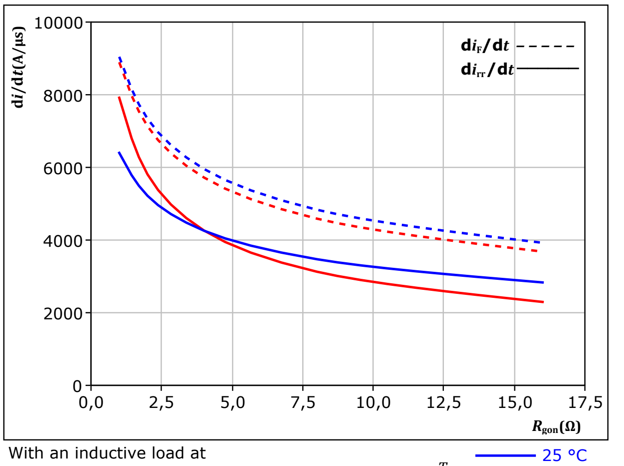
T_j: 25 °C, 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 73. **FWD**

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

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



With an inductive load at

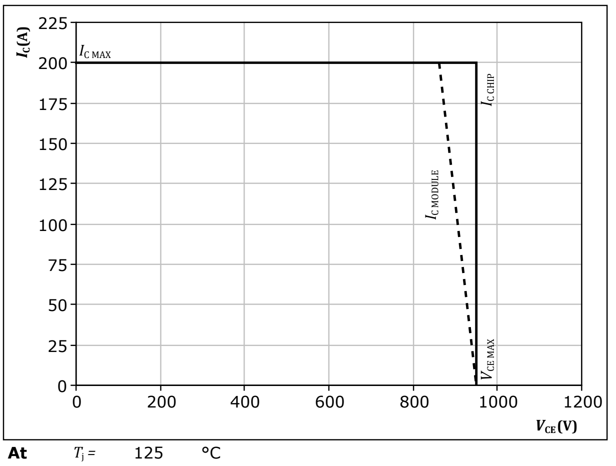
T_j: 25 °C, 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 74. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



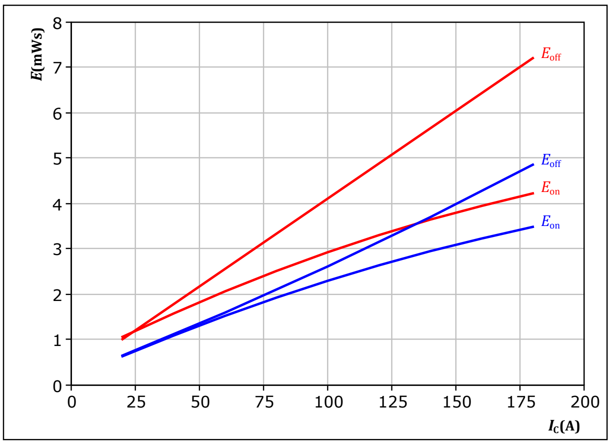
At			
	T_j =	125	°C
	R_{gon} =	4	Ω
	R_{goff} =	4	Ω

AC 2 Switching Characteristics H

figure 75. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



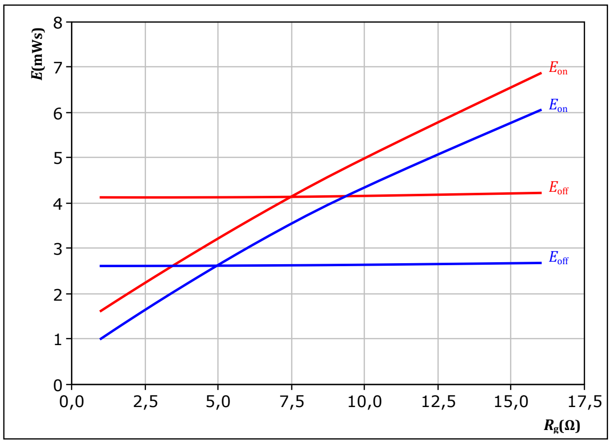
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		
R_{goff} =	4	Ω		

figure 76. **IGBT**

Typical switching energy losses as a function of IGBT turn on gate resistor

$E = f(R_g)$



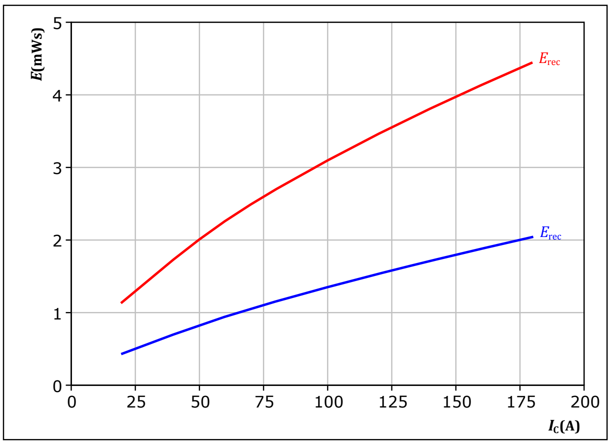
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	100	A		

figure 77. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



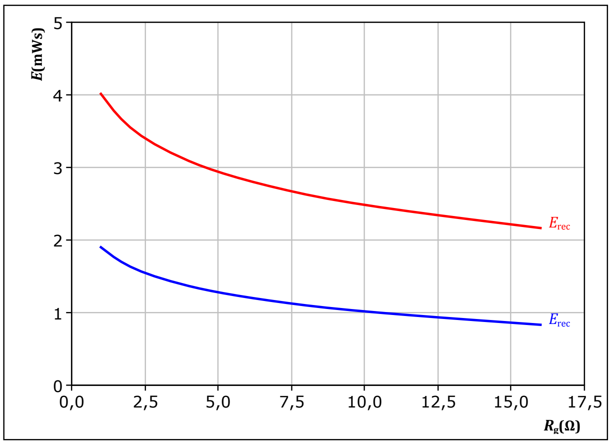
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
R_{gon} =	4	Ω		

figure 78. **FWD**

Typical reverse recovered energy loss as a function of IGBT turn on gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

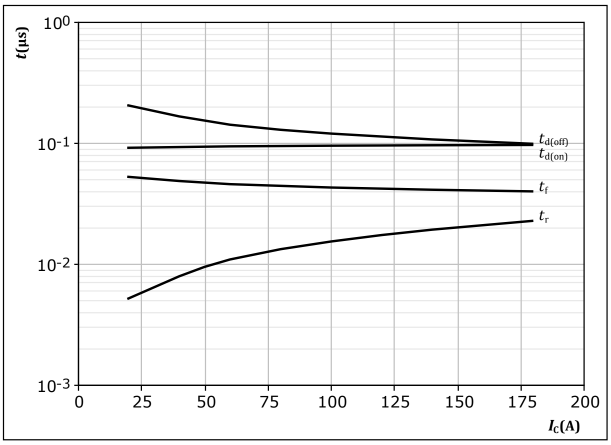
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	±15	V		125 °C
I_C =	100	A		

AC 2 Switching Characteristics H

figure 79. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



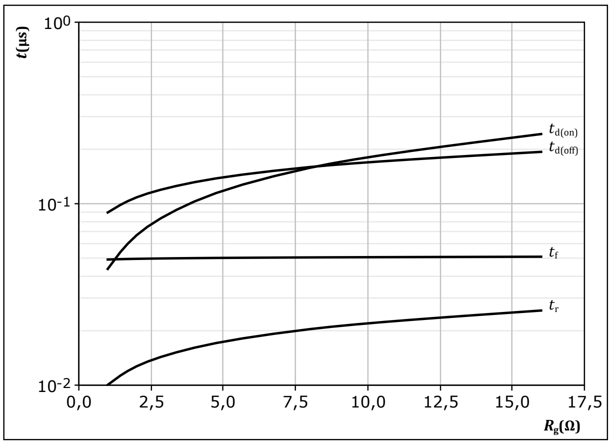
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω
R_{goff} =	4	Ω

figure 80. **IGBT**

Typical switching times as a function of IGBT turn on gate resistor

t = f(R_g)



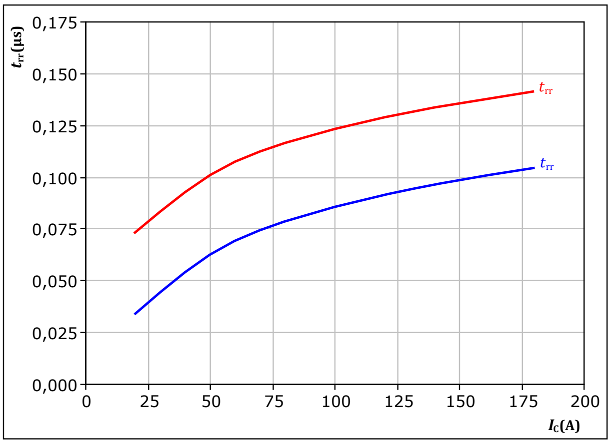
With an inductive load at

T_j =	125	°C
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 81. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



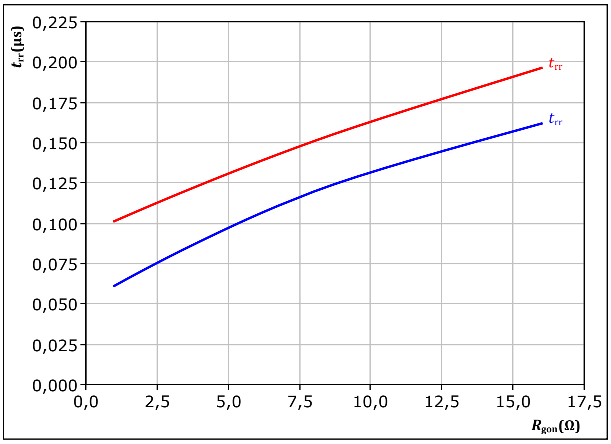
With an inductive load at

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 82. **FWD**

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

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



With an inductive load at

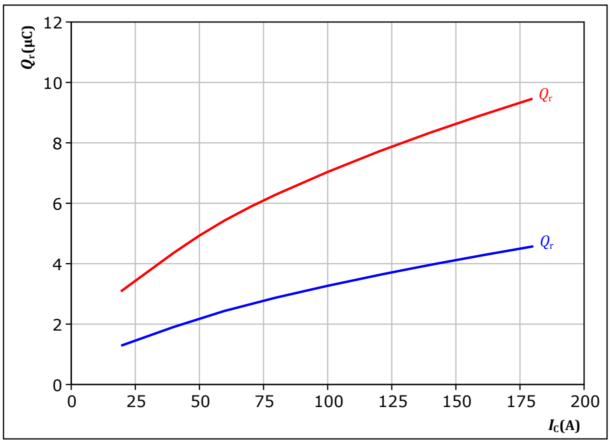
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

AC 2 Switching Characteristics H

figure 83. **FWD**

Typical recovered charge as a function of collector current

Q_r = f(I_C)



With an inductive load at

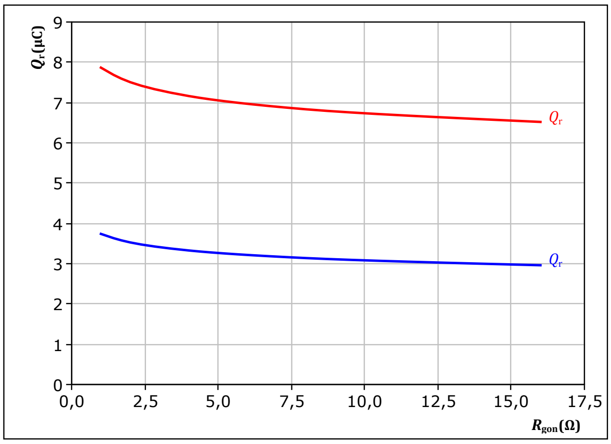
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 84. **FWD**

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

Q_r = f(R_{gon})



With an inductive load at

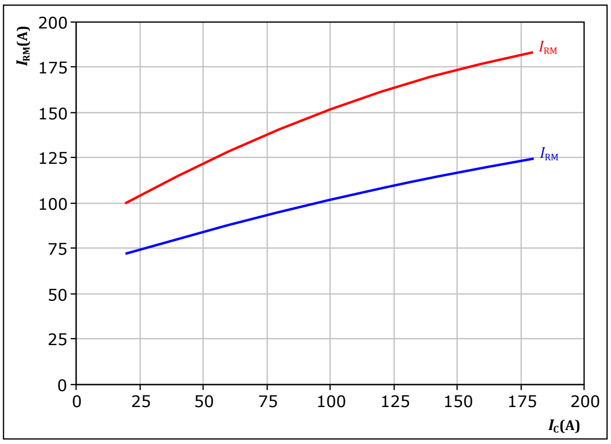
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

figure 85. **FWD**

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



With an inductive load at

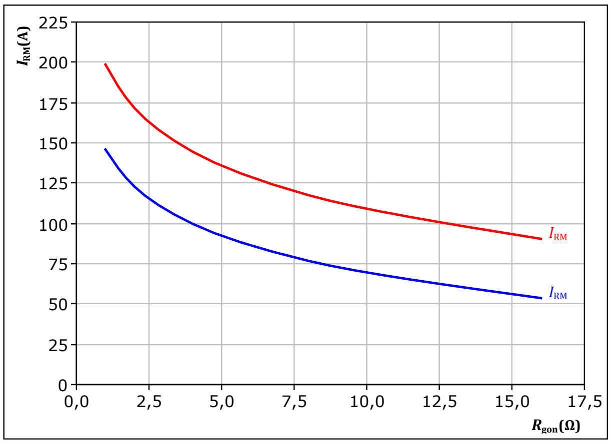
T_j: 25 °C / 125 °C

V_{CE} =	600	V
V_{GE} =	±15	V
R_{gon} =	4	Ω

figure 86. **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

T_j: 25 °C / 125 °C

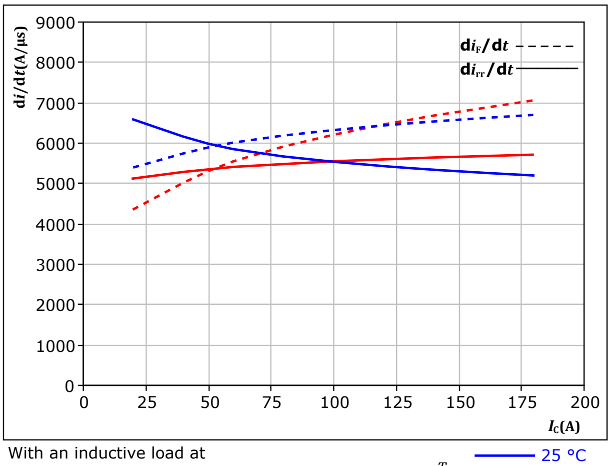
V_{CE} =	600	V
V_{GE} =	±15	V
I_C =	100	A

AC 2 Switching Characteristics H

figure 87. **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)



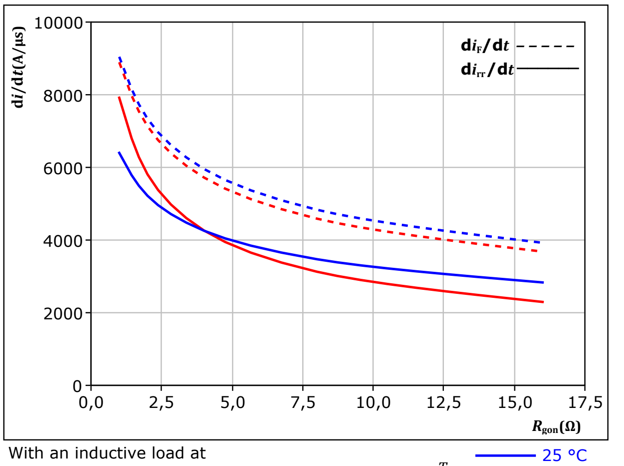
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C
V_{GE} =	±15	V	125 °C
R_{gon} =	4	Ω	

figure 88. **FWD**

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

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



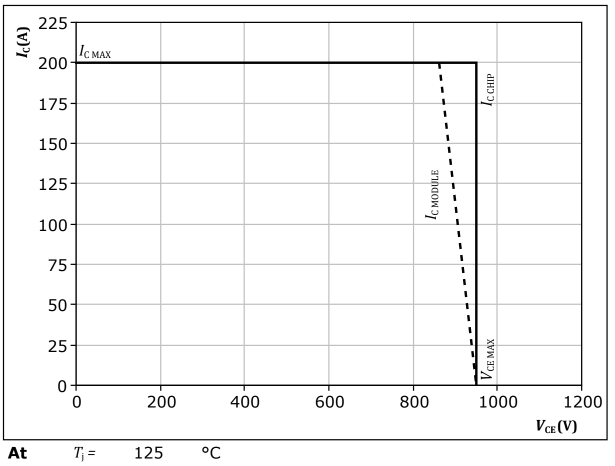
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C
V_{GE} =	±15	V	125 °C
I_C =	100	A	

figure 89. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



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

Switching Definitions

figure 90. **IGBT**

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

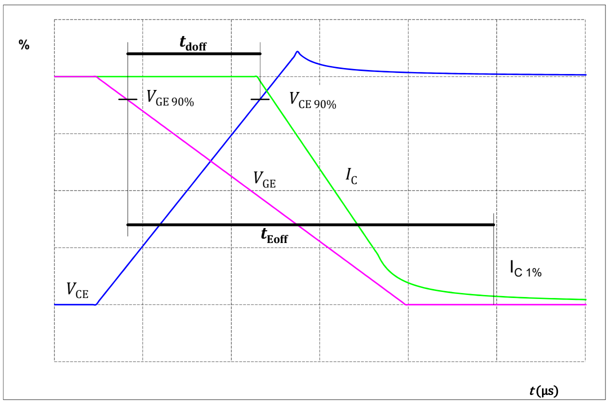


figure 91. **IGBT**

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

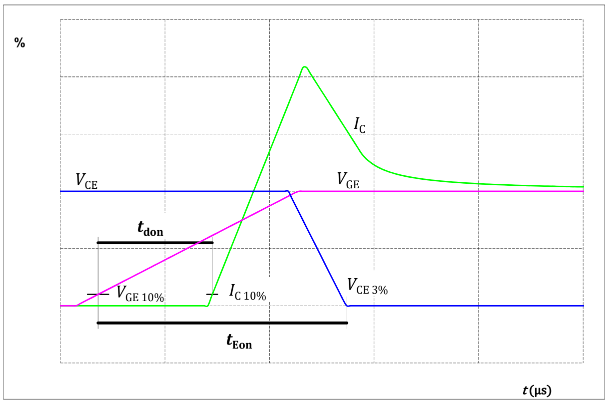


figure 92. **IGBT**

Turn-off Switching Waveforms & definition of t_f

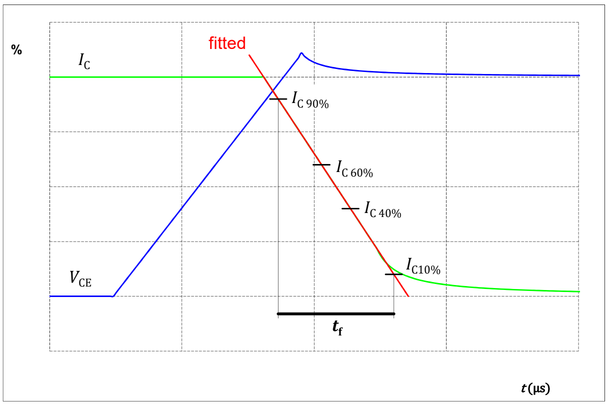
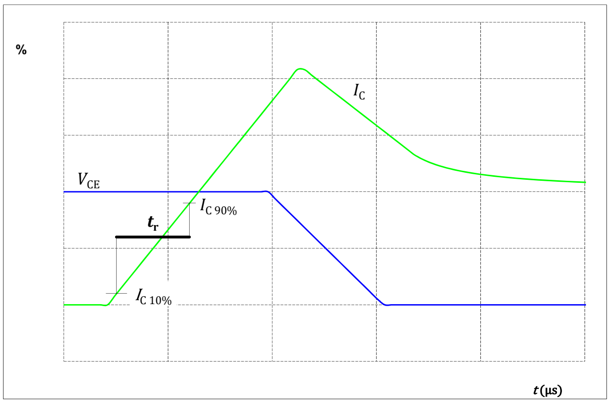


figure 93. **IGBT**

Turn-on Switching Waveforms & definition of t_r



Switching Definitions

figure 94.	FWD

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

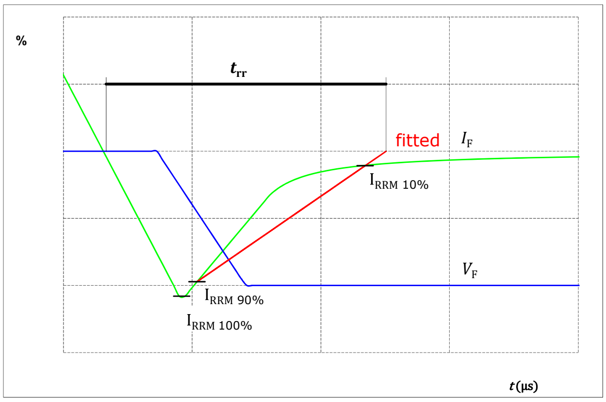
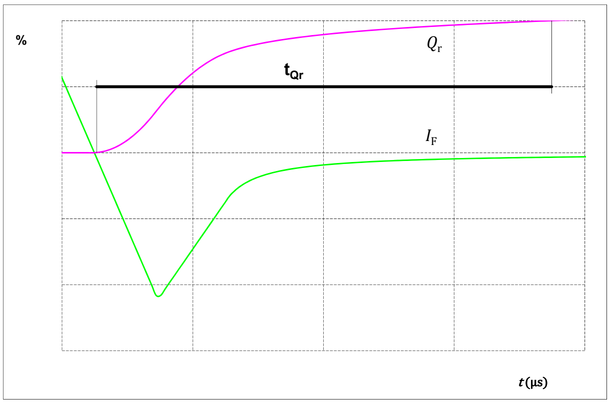


figure 95.	FWD

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



Ordering Code

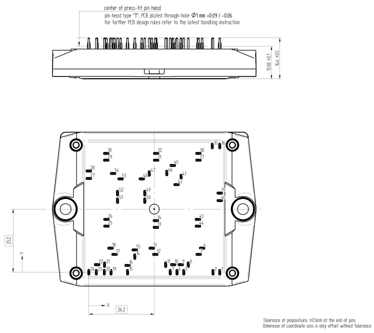
Version	Ordering Code
Without thermal paste	B0-SP10F3A100S7-LU49F08T
With thermal paste (5,2 W/mK, PTM6000HV)	B0-SP10F3A100S7-LU49F08T-/7/

Marking

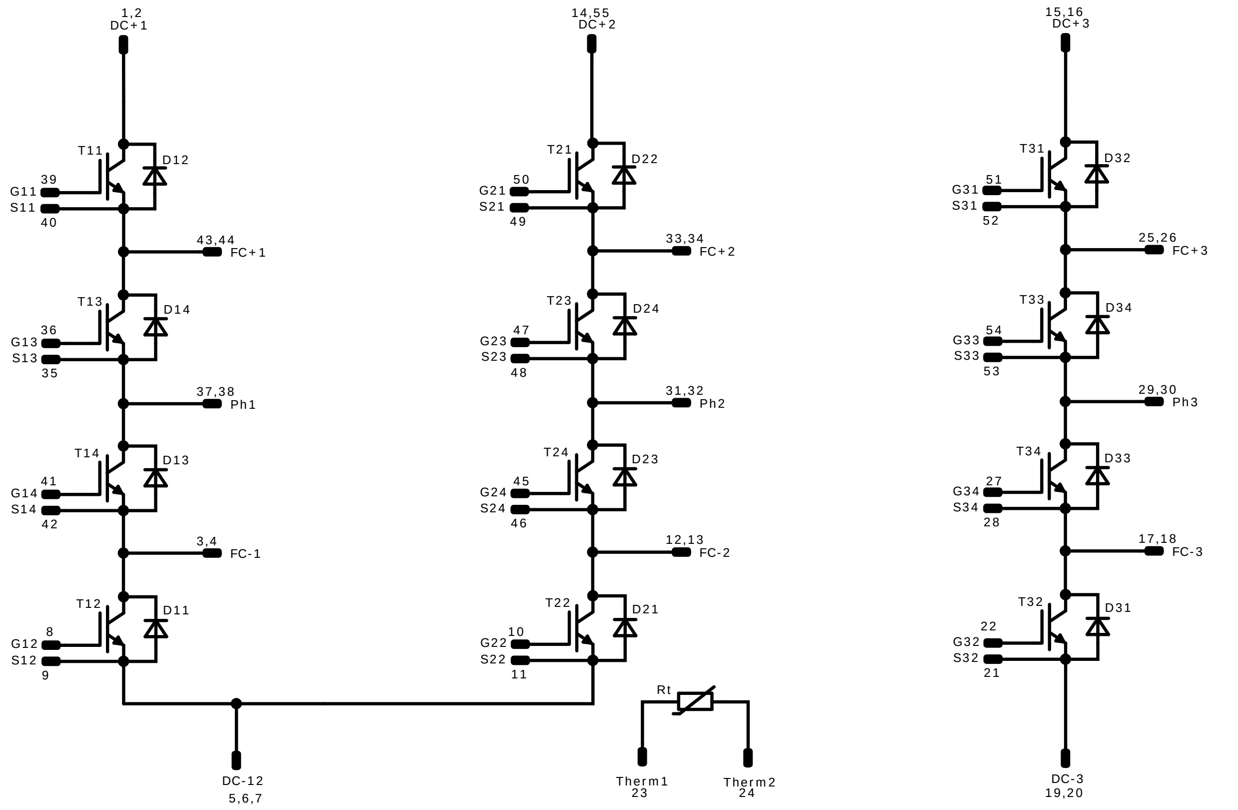
	Name		Date code	UL & VIN	Lot	Serial
Text	NN-NNNNNNNNNNNNNN-TTTTTTVV		WWYY	UL VIN	LLLLL	SSSS
	Type&Ver	**Lot number**	**Serial**	**Date code**		
Datamatrix	TTTTTTTVV	LLLLL	SSSS	WWYY		

Outline

Pin table [mm]							
Pin	X	Y	Function	29	6,95	44,75	Ph3
1	52,4	0	DC+1	30	6,95	47,45	Ph3
2	49,7	0	DC+1	31	26,95	44,75	Ph2
3	43,95	7,1	FC-1	32	26,95	47,45	Ph2
4	45,35	9,6	FC-1	33	26,85	17,9	FC+2
5	38	0	DC-12	34	26,85	20,6	FC+2
6	35,3	0	DC-12	35	49,4	50,4	S13
7	32,6	0	DC-12	36	52,4	50,4	G13
8	39,8	3	G12	37	43,85	44,75	Ph1
9	36,8	3	S12	38	43,85	47,45	Ph1
10	33,75	3	G22	39	52,4	31,6	G11
11	30,75	3	S22	40	52,4	28,6	S11
12	26,6	7,1	FC-2	41	36,95	38,01	G14
13	25,2	9,6	FC-2	42	35,1	35	S14
14	18,4	6,2	DC+2	43	43,65	21,1	FC+1
15	15,5	0	DC+3	44	43,65	18,4	FC+1
16	15,5	2,7	DC+3	45	33,6	42,65	G24
17	10,3	7,1	FC-3	46	31,2	39,65	S24
18	8,7	9,6	FC-3	47	24,2	39,45	G23
19	8,9	0	DC-3	48	21,2	37,3	S23
20	6,2	0	DC-3	49	22,4	31,6	S21
21	6,3	3	S32	50	22,4	28,6	G21
22	3,3	3	G32	51	11,5	28,6	G31
23	3	0	Therm1	52	11,5	31,6	S31
24	0	0	Therm2	53	12,7	37,3	S33
25	7,05	18,4	FC+3	54	9,7	39,45	G33
26	7,05	21,1	FC+3	55	18,4	8,9	DC+2
27	0	37,45	G34				
28	0	40,45	S34				



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T12, T22, T32	IGBT	950 V	100 A	AC 1 Switch L	
D11, D21, D31	FWD	950 V	100 A	AC 1 Diode L	
T11, T21, T31	IGBT	950 V	100 A	AC 1 Switch H	
D12, D22, D32	FWD	950 V	100 A	AC 1 Diode H	
T14, T24, T34	IGBT	950 V	100 A	AC 2 Switch L	
D13, D23, D33	FWD	950 V	100 A	AC 2 Diode L	
T13, T23, T33	IGBT	950 V	100 A	AC 2 Switch H	
D14, D24, D34	FWD	950 V	100 A	AC 2 Diode H	
Rt	Thermistor			Thermistor	

Packaging instruction				
Standard packaging quantity (SPQ) 45	>SPQ	Standard	<SPQ	Sample

Handling instruction
Handling instructions for *flow* S3 packages see vincotech.com website.

Package data
Package data for *flow* S3 packages see vincotech.com website.

Vincotech thermistor reference
See Vincotech thermistor reference table at 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
B0-SP10F3A100S7-LU49F08T-D4-14	13 Dec. 2022	Without Flying Capacitors	