Vincotech

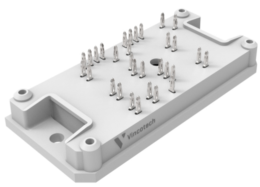
10-PY07FCA200RG-LQ45L60Y
datasheet

***flow*FC 1**	**1200 V / 200 A**

Features

- Three-level flying capacitor topology
- Ultra-fast 650V components
- Integrated capacitor
- Integrated NTC

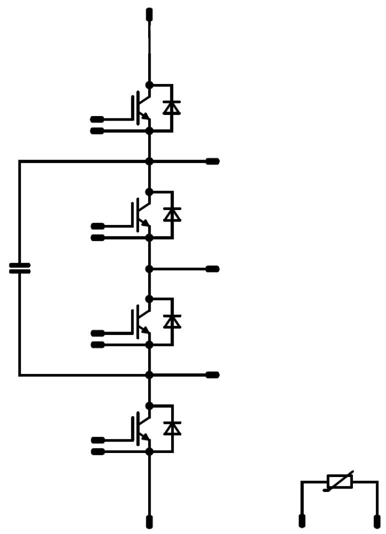
flow 1 12 mm housing



Target applications

- General

Schematic



Types

- 10-PY07FCA200RG-LQ45L60Y

Maximum Ratings

T_j = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions		Value	Unit
AC 1 Switch L					
Collector-emitter voltage	V_{CES}			650	V
Collector current	I_C	$T_j = T_{jmax}$	T_s = 80 °C	142	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	219	W
Gate-emitter voltage	V_{GES}			±30	V
Maximum junction temperature	T_{jmax}			175	°C
AC 1 Diode L					
Peak repetitive reverse voltage	V_{RRM}			650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	149	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	200	W
Maximum junction temperature	T_{jmax}			175	°C
AC 1 Switch H					
Collector-emitter voltage	V_{CES}			650	V
Collector current	I_C	$T_j = T_{jmax}$	T_s = 80 °C	142	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	219	W
Gate-emitter voltage	V_{GES}			±30	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}			650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	149	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	200	W
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Switch L					
Collector-emitter voltage	V_{CES}			650	V
Collector current	I_C	$T_j = T_{jmax}$	T_s = 80 °C	142	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	219	W
Gate-emitter voltage	V_{GES}			±30	V
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Diode L					
Peak repetitive reverse voltage	V_{RRM}			650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	149	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	200	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}			650	V
Collector current	I_C	$T_j = T_{jmax}$	T_s = 80 °C	142	A
Repetitive peak collector current	I_{CRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	219	W
Gate-emitter voltage	V_{GES}			±30	V
Maximum junction temperature	T_{jmax}			175	°C
AC 2 Diode H					
Peak repetitive reverse voltage	V_{RRM}			650	V
Continuous (direct) forward current	I_F	$T_j = T_{jmax}$	T_s = 80 °C	149	A
Repetitive peak forward current	I_{FRM}	t_p limited by T_{jmax}		800	A
Total power dissipation	P_{tot}	$T_j = T_{jmax}$	T_s = 80 °C	200	W
Maximum junction temperature	T_{jmax}			175	°C
Flying Capacitor					
Maximum DC voltage	V_{MAX}			630	V
Operation Temperature	T_{op}			0 … 125	°C

Module Properties

Parameter	Symbol	Conditions		Value	Unit
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
Isolation voltage	V_{isol}	AC Voltage	t_p = 1 min	2500	V
Creepage distance				min. 12,7	mm
Clearance				11	mm
Comparative Tracking Index	CTI			≥ 600	

*100 % tested in production

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 Switch L										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$			5	0,132	25	5	6	7	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,5 1,66 1,7	1,9(1)	V
Collector-emitter cut-off current	I_{CES}		0	650		25			0,04	mA
Gate-emitter leakage current	I_{GES}		30	0		25			0,8	µA
Internal gate resistance	r_g							None		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	30		25		16800		pF
Output capacitance	C_{oes}							416		pF
Reverse transfer capacitance	C_{res}							316		pF
Gate charge	Q_g		15	400	200	25		564		nC
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,43		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		205,44 191,36 187,2		ns
Rise time	t_r					25 125 150		38,72 40 39,68		ns
Turn-off delay time	$t_{d(off)}$					25 125 150		613,44 657,28 671,04		ns
Fall time	t_f					25 125 150		22,3 15,31 12,71		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=4,24 µC Q_{rFWD}=7,91 µC Q_{rFWD}=9,48 µC				25 125 150		9,8 11,74 12,35		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		6,53 7,65 7,76		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				200	25 125 150		1,51 1,57 1,54	1,9(1)	V
Reverse leakage current	I_R	V_r = 650 V				25			40	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,48		K/W
Dynamic										
Peak recovery current	I_{RRM}	d*i*/d*t*=4670 A/µs d*i*/d*t*=4496 A/µs d*i*/d*t*=4512 A/µs	-5/15	600	160	25 125 150		111,24 139,02 148,44		A
Reverse recovery time	t_{rr}					25 125 150		84,92 118,6 125,12		ns
Recovered charge	Q_r					25 125 150		4,24 7,91 9,48		µC
Reverse recovered energy	E_{rec}					25 125 150		0,83 1,7 2,1		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		4933 3021 2302		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	$V_{GE(th)}$			5	0,132	25	5	6	7	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,5 1,66 1,7	1,9(1)	V
Collector-emitter cut-off current	I_{CES}		0	650		25			0,04	mA
Gate-emitter leakage current	I_{GES}		30	0		25			0,8	μA
Internal gate resistance	r_g							None		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	30		25		16800		pF
Output capacitance	C_{oes}	f = 1 Mhz	0	30		25		416		pF
Reverse transfer capacitance	C_{res}	f = 1 Mhz	0	30		25		316		pF
Gate charge	Q_g		15	400	200	25		564		nC
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,43		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		205,44 191,36 187,2		ns
Rise time	t_r	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		38,72 40 39,68		ns
Turn-off delay time	$t_{d(off)}$	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		613,44 657,28 671,04		ns
Fall time	t_f	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		22,3 15,31 12,71		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=4,24 μC Q_{rFWD}=7,91 μC Q_{rFWD}=9,48 μC	-5/15	600	160	25 125 150		9,8 11,74 12,35		mWs
Turn-off energy (per pulse)	E_{off}		-5/15	600	160	25 125 150		6,53 7,65 7,76		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				200	25 125 150		1,51 1,57 1,54	1,9(1)	V
Reverse leakage current	I_R	V_r = 650 V				25			40	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,48		K/W
Dynamic										
Peak recovery current	I_{RRM}	di/dt=4670 A/µs di/dt=4496 A/µs di/dt=4512 A/µs	-5/15	600	160	25 125 150		111,24 139,02 148,44		A
Reverse recovery time	t_{rr}					25 125 150		84,92 118,6 125,12		ns
Recovered charge	Q_r					25 125 150		4,24 7,91 9,48		µC
Reverse recovered energy	E_{rec}					25 125 150		0,83 1,7 2,1		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		4933 3021 2302		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]	Values Min	Typ	Max	Unit
AC 2 Switch L										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$			5	0,132	25	5	6	7	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,5 1,66 1,7	1,9(1)	V
Collector-emitter cut-off current	I_{CES}		0	650		25			0,04	mA
Gate-emitter leakage current	I_{GES}		30	0		25			0,8	μA
Internal gate resistance	r_g							None		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	30		25		16800		pF
Output capacitance	C_{oes}							416		pF
Reverse transfer capacitance	C_{res}							316		pF
Gate charge	Q_g		15	400	200	25		564		nC
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,43		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		207,36 193,28 189,44		ns
Rise time	t_r					25 125 150		34,24 35,52 35,84		ns
Turn-off delay time	$t_{d(off)}$					25 125 150		601,92 645,76 658,88		ns
Fall time	t_f					25 125 150		17,03 10,44 10,61		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=4,02 μC Q_{rFWD}=7,75 μC Q_{rFWD}=9,33 μC				25 125 150		9,88 11,63 12,43		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		6,48 7,53 7,9		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				200	25 125 150		1,51 1,57 1,54	1,9(1)	V
Reverse leakage current	I_R	V_r = 650 V				25			40	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,48		K/W
Dynamic										
Peak recovery current	I_{RRM}	di/dt=4858 A/µs di/dt=4791 A/µs di/dt=4823 A/µs	-5/15	600	160	25 125 150		113,79 141,42 151,13		A
Reverse recovery time	t_{rr}					25 125 150		84,55 120,06 127,75		ns
Recovered charge	Q_r					25 125 150		4,02 7,75 9,33		µC
Reverse recovered energy	E_{rec}					25 125 150		0,757 1,66 2,03		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		5790 3653 2742		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 2 Switch H										
Static										
Gate-emitter threshold voltage	$V_{GE(th)}$			5	0,132	25	5	6	7	V
Collector-emitter saturation voltage	V_{CEsat}		15		200	25 125 150		1,5 1,66 1,7	1,9(1)	V
Collector-emitter cut-off current	I_{CES}		0	650		25			0,04	mA
Gate-emitter leakage current	I_{GES}		30	0		25			0,8	µA
Internal gate resistance	r_g							None		Ω
Input capacitance	C_{ies}	f = 1 Mhz	0	30		25		16800		pF
Output capacitance	C_{oes}							416		pF
Reverse transfer capacitance	C_{res}							316		pF
Gate charge	Q_g		15	400	200	25		564		nC
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,43		K/W
Dynamic										
Turn-on delay time	$t_{d(on)}$	R_{gon} = 16 Ω R_{goff} = 16 Ω	-5/15	600	160	25 125 150		207,36 193,28 189,44		ns
Rise time	t_r					25 125 150		34,24 35,52 35,84		ns
Turn-off delay time	$t_{d(off)}$					25 125 150		601,92 645,76 658,88		ns
Fall time	t_f					25 125 150		17,03 10,44 10,61		ns
Turn-on energy (per pulse)	E_{on}	Q_{rFWD}=4,02 µC Q_{rFWD}=7,75 µC Q_{rFWD}=9,33 µC				25 125 150		9,88 11,63 12,43		mWs
Turn-off energy (per pulse)	E_{off}					25 125 150		6,48 7,53 7,9		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 H										
Static										
Forward voltage	V_F				200	25 125 150		1,51 1,57 1,54	1,9(1)	V
Reverse leakage current	I_R	V_r = 650 V				25			40	µA
Thermal										
Thermal resistance junction to sink (2)	$R_{th(j-s)}$	λ_{paste} = 3,4 W/mK (PSX)						0,48		K/W
Dynamic										
Peak recovery current	I_{RRM}	di/dt=4858 A/µs di/dt=4791 A/µs di/dt=4823 A/µs	-5/15	600	160	25 125 150		113,79 141,42 151,13		A
Reverse recovery time	t_{rr}					25 125 150		84,55 120,06 127,75		ns
Recovered charge	Q_r					25 125 150		4,02 7,75 9,33		µC
Reverse recovered energy	E_{rec}					25 125 150		0,757 1,66 2,03		mWs
Peak rate of fall of recovery current	$(di_{rf}/dt)_{max}$					25 125 150		5790 3653 2742		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	
Flying Capacitor										
Static										
Capacitance	C							150		nF
Tolerance							-10		10	%
Thermistor										
Static										
Rated resistance	R					25		22		kΩ
Deviation of R_{100}	$\Delta_{R/R}$	R_{100} = 1484 Ω				100	-5		5	%
Power dissipation	P							5		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

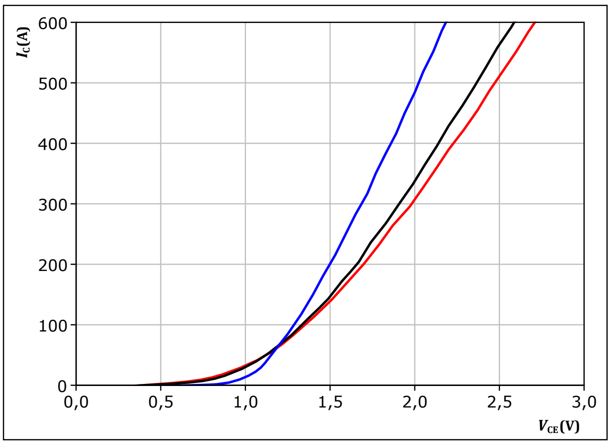
(2) Only valid with pre-applied Vincotech thermal interface material.

AC 1 Switch L Characteristics

figure 1. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

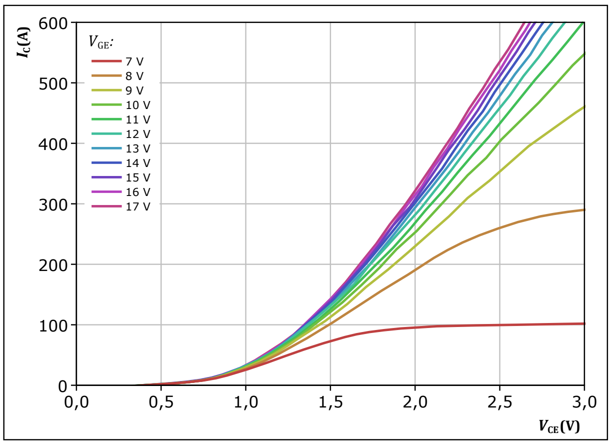


t_p =	250	µs		25 °C
V_{GE} =	15	V	T_j:	125 °C
				150 °C

figure 2. **IGBT**

Typical output characteristics

I_C = f(V_{CE})



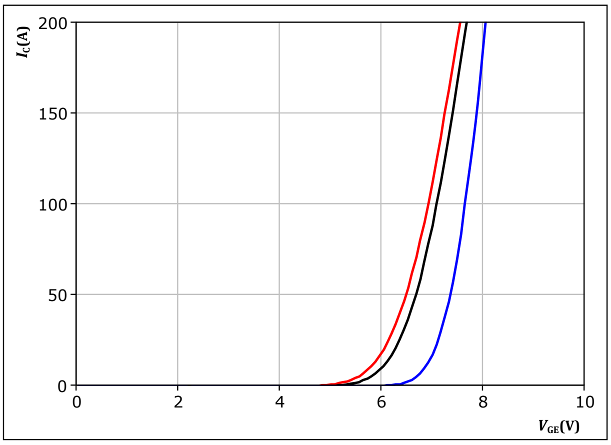
t_p =	250	µs
T_j =	150	°C

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

figure 3. **IGBT**

Typical transfer characteristics

I_C = f(V_{GE})

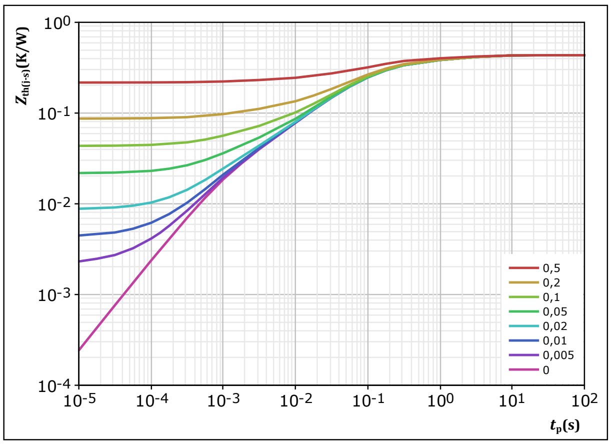


t_p =	250	µs		25 °C
V_{CE} =	10	V	T_j:	125 °C
				150 °C

figure 4. **IGBT**

Transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	0,434	K/W

IGBT thermal model values

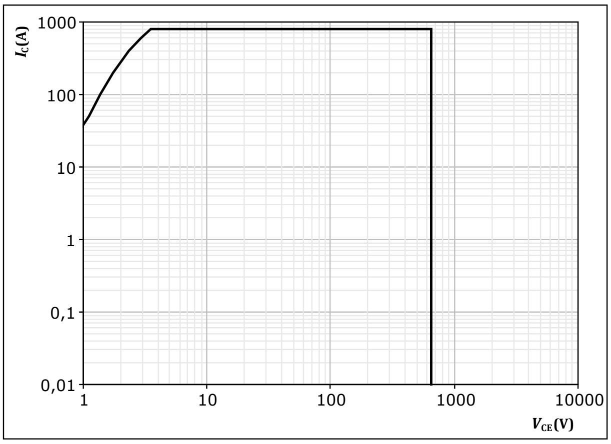
R (K/W)	τ (s)
4,93E-02	3,24E+00
8,20E-02	5,53E-01
2,21E-01	8,77E-02
6,21E-02	1,34E-02
2,00E-02	1,18E-03

AC 1 Switch L Characteristics

figure 5.	**IGBT**

Safe operating area

I_C = f(V_{CE})



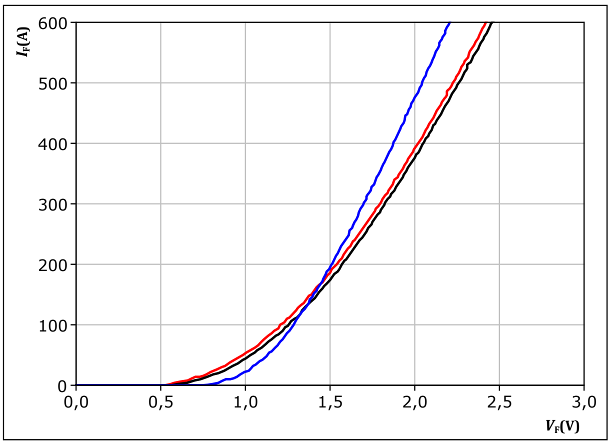
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 1 Diode L Characteristics

figure 6. **FWD**

Typical forward characteristics

I_F = f(V_F)



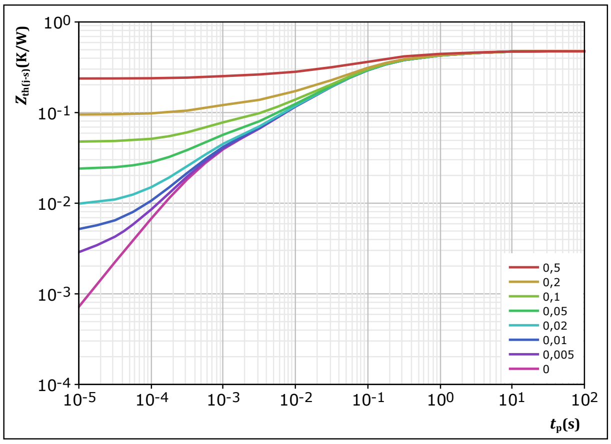
t_p = 250 µs

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

$R_{th(j-s)}$ = 0,475 K/W

FWD thermal model values

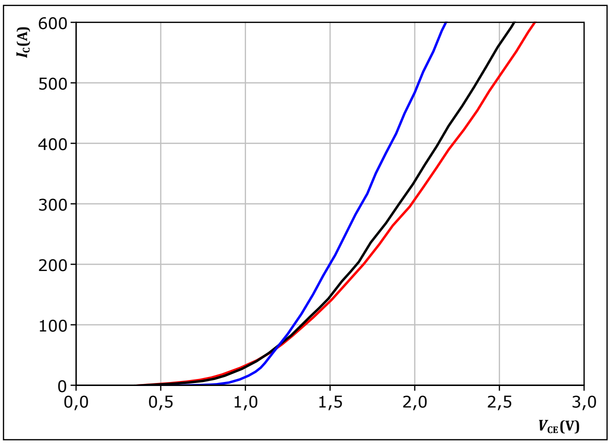
R (K/W)	τ (s)
4,99E-02	3,52E+00
9,30E-02	4,57E-01
2,16E-01	7,66E-02
8,25E-02	9,31E-03
3,36E-02	5,55E-04

AC 1 Switch H Characteristics

figure 8. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

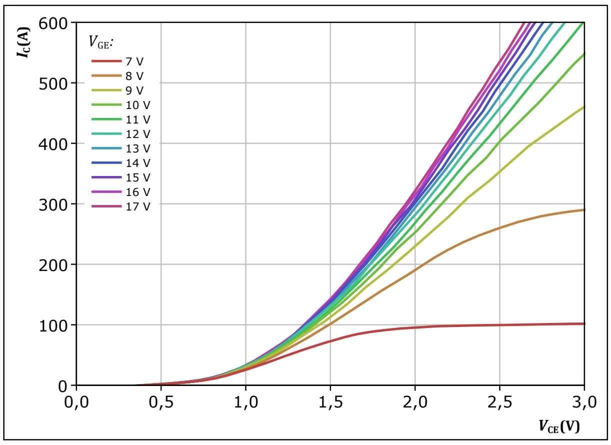


t_p = 250 µs
V_{GE} = 15 V
T_j: 25 °C, 125 °C, 150 °C

figure 9. **IGBT**

Typical output characteristics

I_C = f(V_{CE})

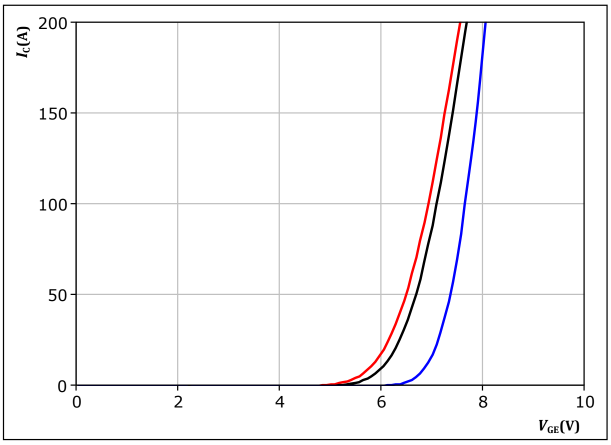


t_p = 250 µs
T_j = 150 °C
V_{GE} from 7 V to 17 V in steps of 1 V

figure 10. **IGBT**

Typical transfer characteristics

I_C = f(V_{GE})

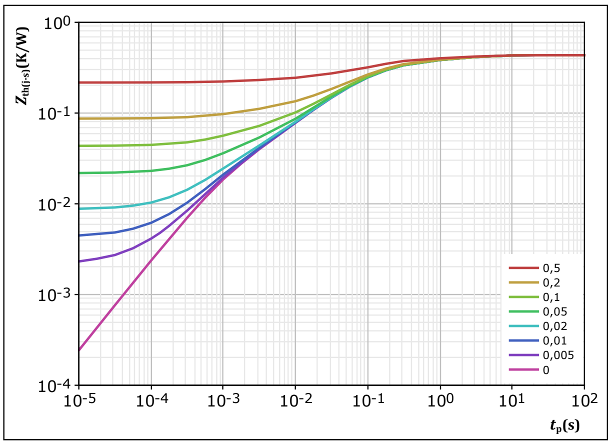


t_p = 250 µs
V_{CE} = 10 V
T_j: 25 °C, 125 °C, 150 °C

figure 11. **IGBT**

Transient thermal impedance as a function of pulse width

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



D = t_p / T
$R_{th(j-s)}$ = 0,434 K/W

IGBT thermal model values

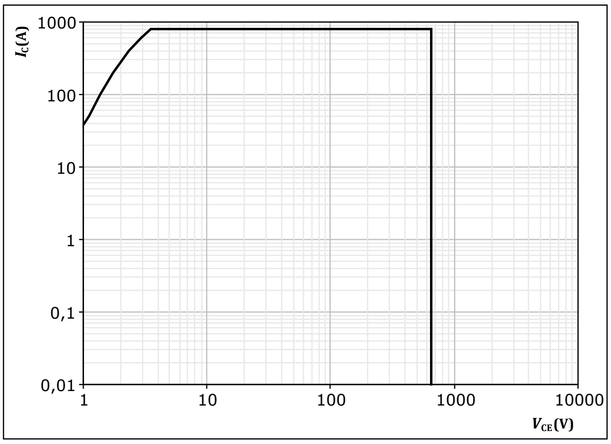
R (K/W)	τ (s)
4,93E-02	3,24E+00
8,20E-02	5,53E-01
2,21E-01	8,77E-02
6,21E-02	1,34E-02
2,00E-02	1,18E-03

AC 1 Switch H Characteristics

figure 12.	IGBT

Safe operating area

I_C = f(V_{CE})



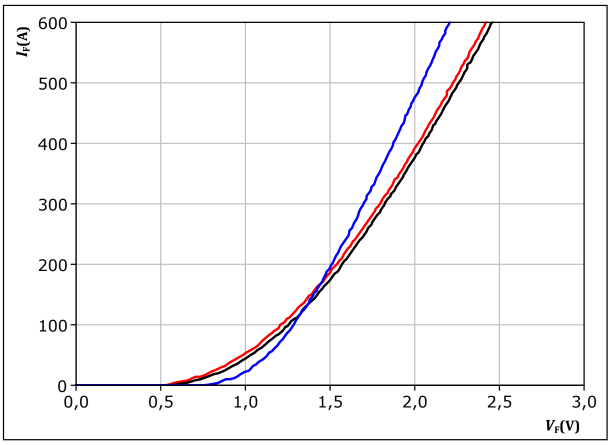
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 1 Diode H Characteristics

figure 13. FWD

Typical forward characteristics

$I_F = f(V_F)$



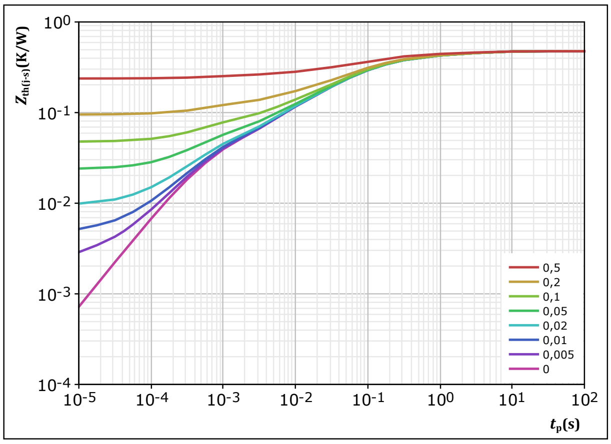
t_p = 250 μs

T_j: 25 °C, 125 °C, 150 °C

figure 14. FWD

Transient thermal impedance as a function of pulse width

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



D = t_p / T

$R_{th(j-s)}$ = 0,475 K/W

FWD thermal model values

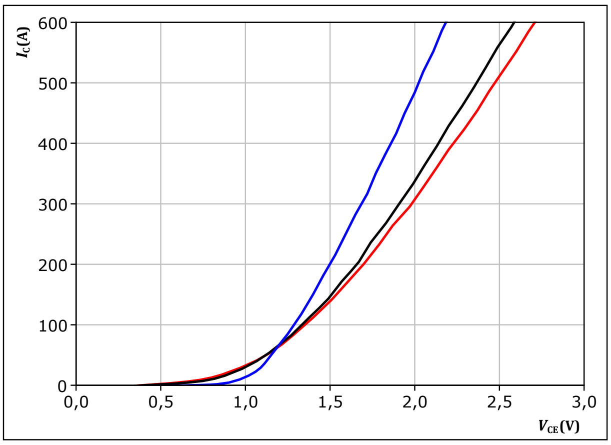
R (K/W)	τ (s)
4,99E-02	3,52E+00
9,30E-02	4,57E-01
2,16E-01	7,66E-02
8,25E-02	9,31E-03
3,36E-02	5,55E-04

AC 2 Switch L Characteristics

figure 15. IGBT

Typical output characteristics

I_C = f(V_{CE})

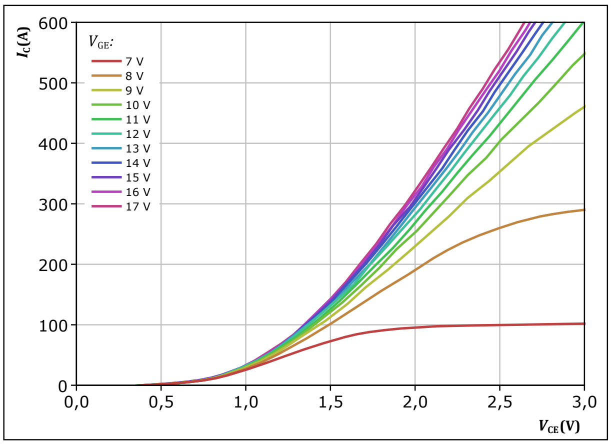


t_p =	250	μs		25 °C
V_{GE} =	15	V	T_j:	125 °C
				150 °C

figure 16. IGBT

Typical output characteristics

I_C = f(V_{CE})



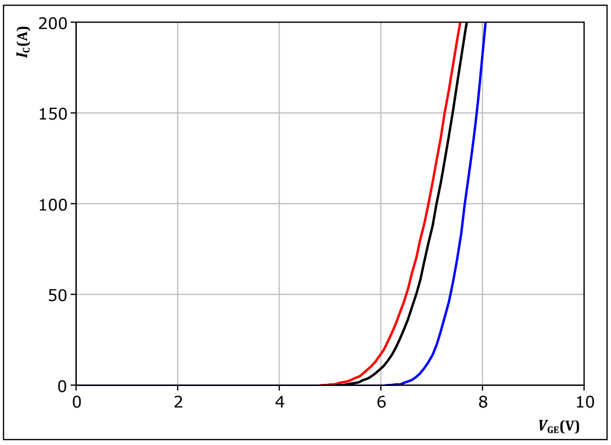
t_p =	250	μs
T_j =	150	°C

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

figure 17. IGBT

Typical transfer characteristics

I_C = f(V_{GE})

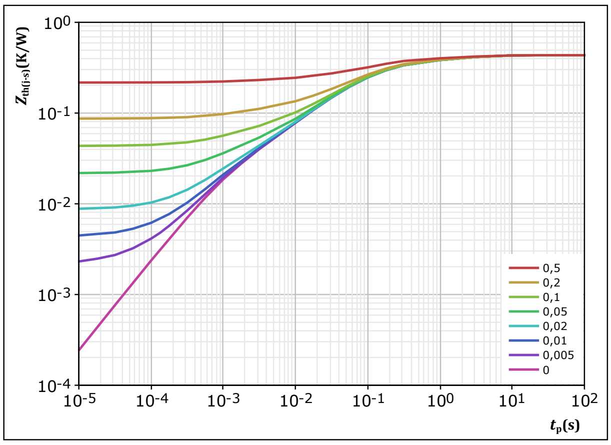


t_p =	250	μs		25 °C
V_{CE} =	10	V	T_j:	125 °C
				150 °C

figure 18. IGBT

Transient thermal impedance as a function of pulse width

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



D =	t_p / T	
$R_{th(j-s)}$ =	0,434	K/W

IGBT thermal model values

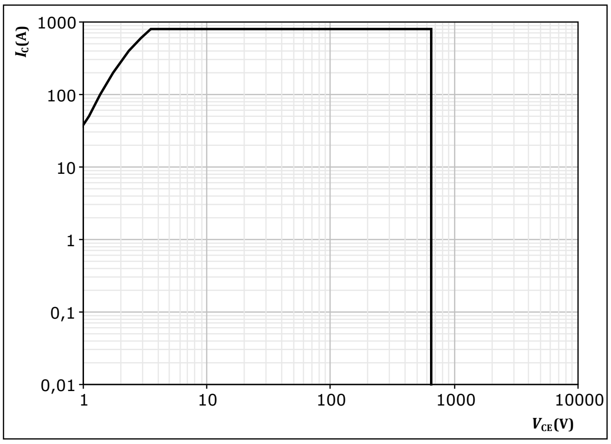
R (K/W)	τ (s)
4,93E-02	3,24E+00
8,20E-02	5,53E-01
2,21E-01	8,77E-02
6,21E-02	1,34E-02
2,00E-02	1,18E-03

AC 2 Switch L Characteristics

figure 19.	IGBT

Safe operating area

I_C = f(V_{CE})



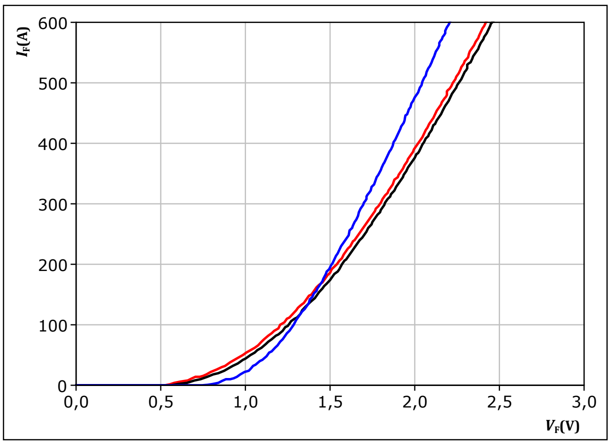
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 2 Diode L Characteristics

figure 20. **FWD**

Typical forward characteristics

I_F = f(V_F)



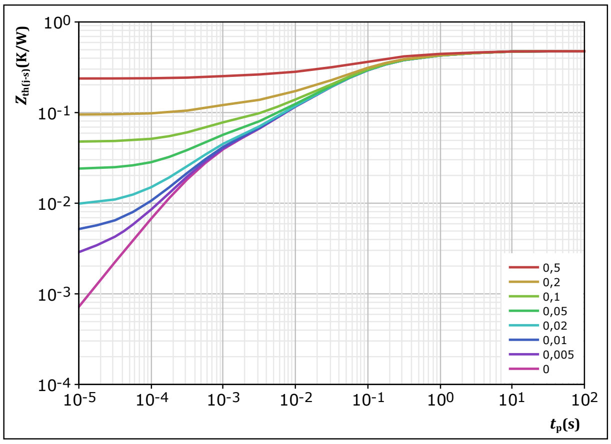
t_p = 250 µs

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

$R_{th(j-s)}$ = 0,475 K/W

FWD thermal model values

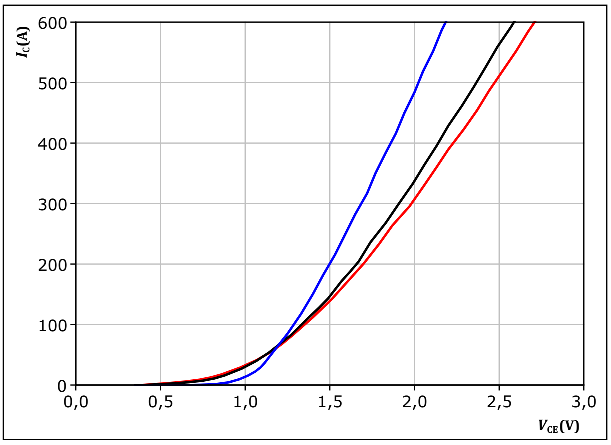
R (K/W)	τ (s)
4,99E-02	3,52E+00
9,30E-02	4,57E-01
2,16E-01	7,66E-02
8,25E-02	9,31E-03
3,36E-02	5,55E-04

AC 2 Switch H Characteristics

figure 22. IGBT

Typical output characteristics

$I_C = f(V_{CE})$

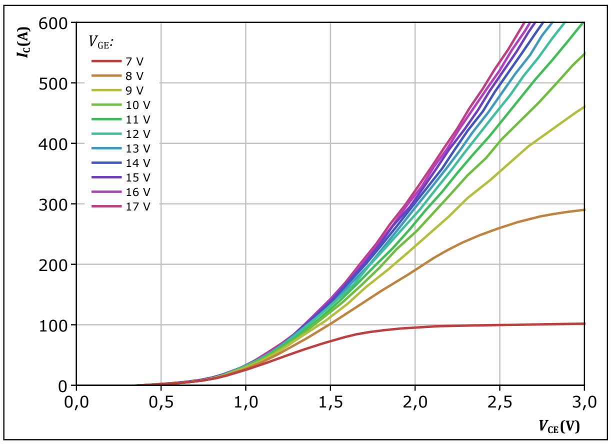


t_p = 250 µs
V_{GE} = 15 V
T_j: 25 °C, 125 °C, 150 °C

figure 23. IGBT

Typical output characteristics

$I_C = f(V_{CE})$

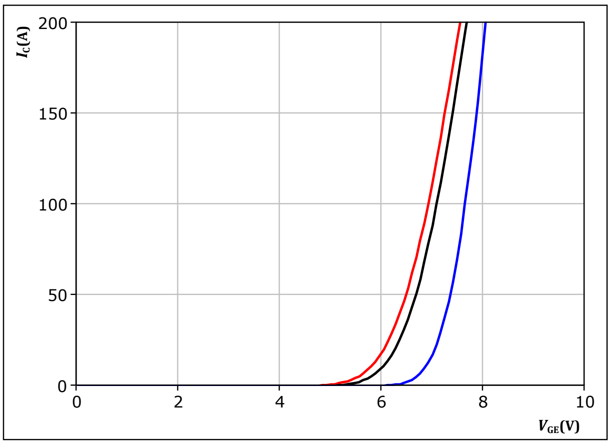


t_p = 250 µs
T_j = 150 °C
V_{GE} from 7 V to 17 V in steps of 1 V

figure 24. IGBT

Typical transfer characteristics

$I_C = f(V_{GE})$

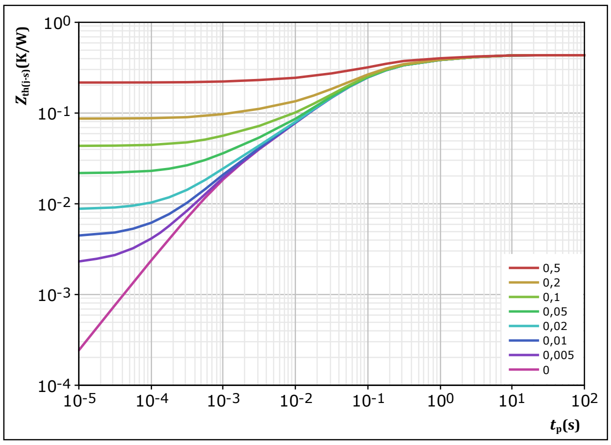


t_p = 250 µs
V_{CE} = 10 V
T_j: 25 °C, 125 °C, 150 °C

figure 25. IGBT

Transient thermal impedance as a function of pulse width

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



D = t_p / T
$R_{th(j-s)}$ = 0,434 K/W

IGBT thermal model values

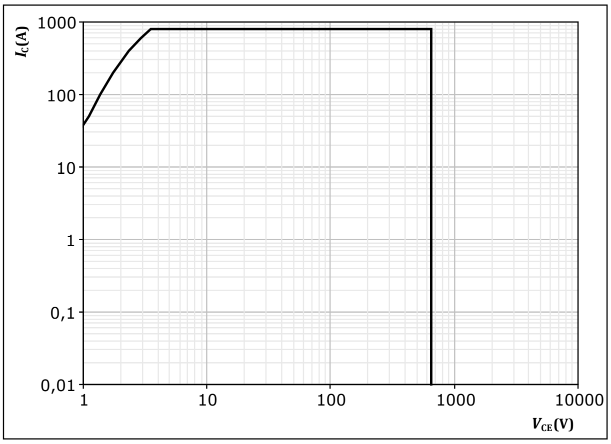
R (K/W)	τ (s)
4,93E-02	3,24E+00
8,20E-02	5,53E-01
2,21E-01	8,77E-02
6,21E-02	1,34E-02
2,00E-02	1,18E-03

AC 2 Switch H Characteristics

figure 26.	IGBT

Safe operating area

I_C = f(V_{CE})



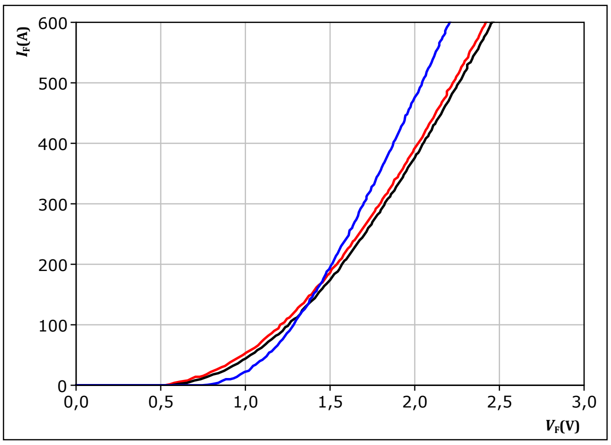
D =	single pulse	
T_s =	80	°C
V_{GE} =	15	V
T_j =	T_{jmax}	

AC 2 Diode H Characteristics

figure 27. **FWD**

Typical forward characteristics

I_F = f(V_F)



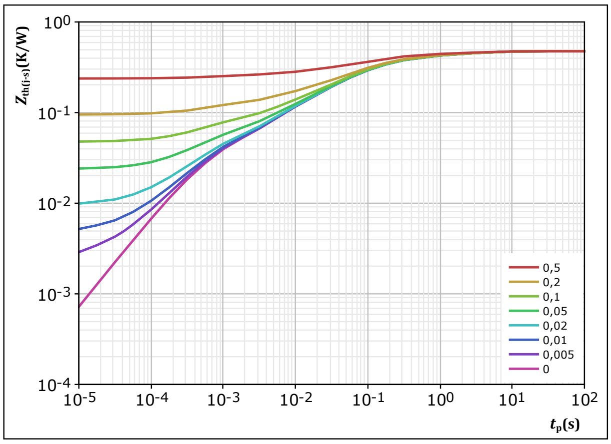
t_p = 250 µs

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

$R_{th(j-s)}$ = 0,475 K/W

FWD thermal model values

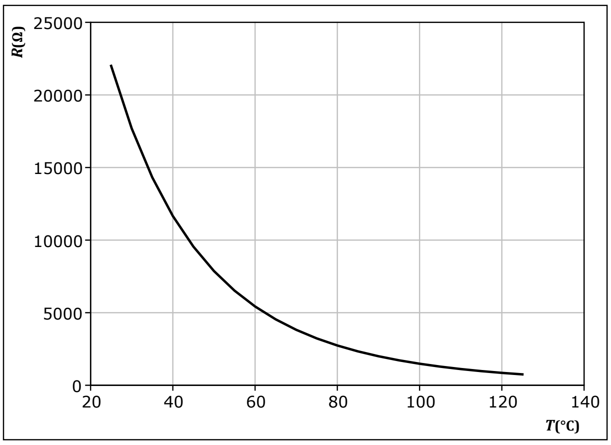
R (K/W)	τ (s)
4,99E-02	3,52E+00
9,30E-02	4,57E-01
2,16E-01	7,66E-02
8,25E-02	9,31E-03
3,36E-02	5,55E-04

Thermistor Characteristics

figure 29.	Thermistor

Typical NTC characteristic as function of temperature

R_T = f(T)

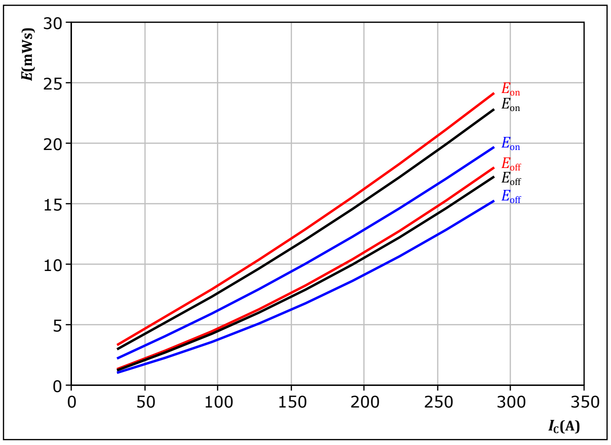


AC 1 Switching Characteristics L

figure 30. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



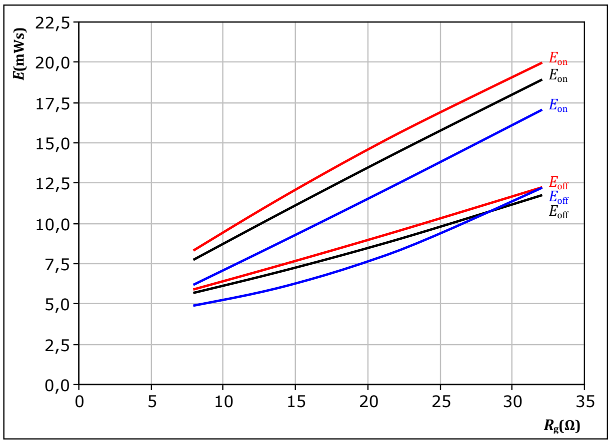
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C
R_{goff} =	16	Ω		

figure 31. **IGBT**

Typical switching energy losses as a function of gate resistor

$E = f(R_g)$



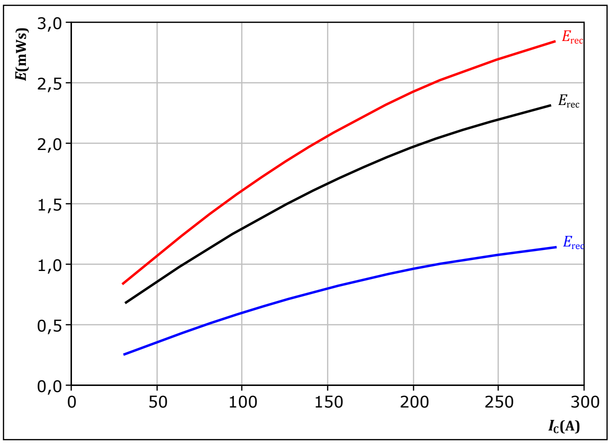
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 32. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



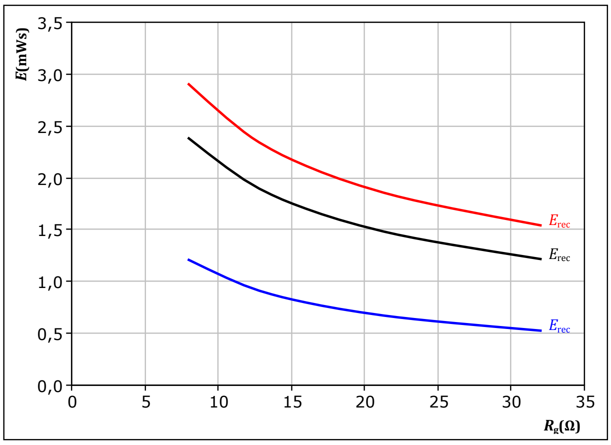
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

figure 33. **FWD**

Typical reverse recovered energy loss as a function of gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

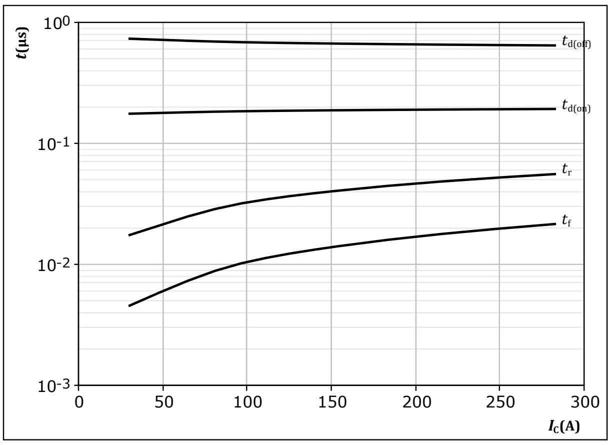
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

AC 1 Switching Characteristics L

figure 34. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



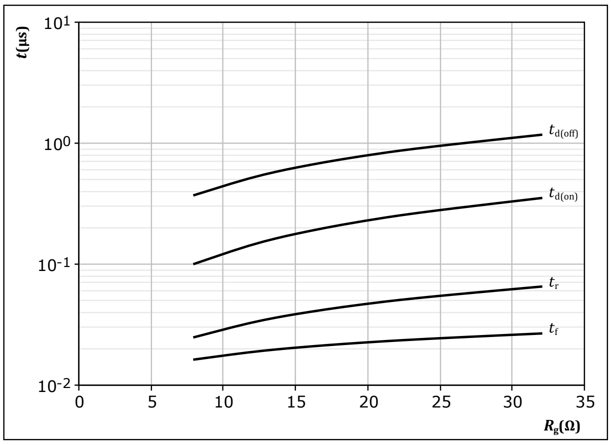
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω
R_{goff} =	16	Ω

figure 35. **IGBT**

Typical switching times as a function of gate resistor

t = f(R_g)



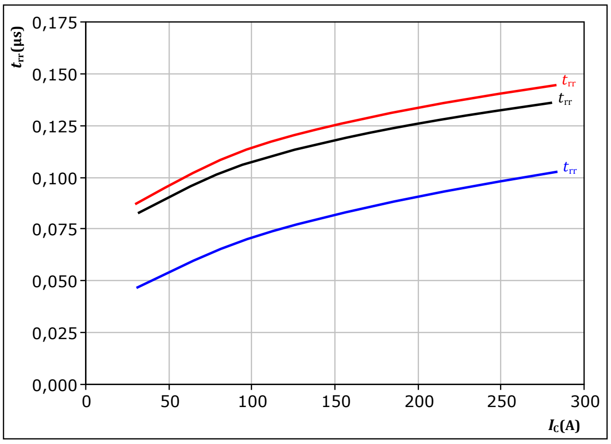
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
I_C =	160	A

figure 36. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

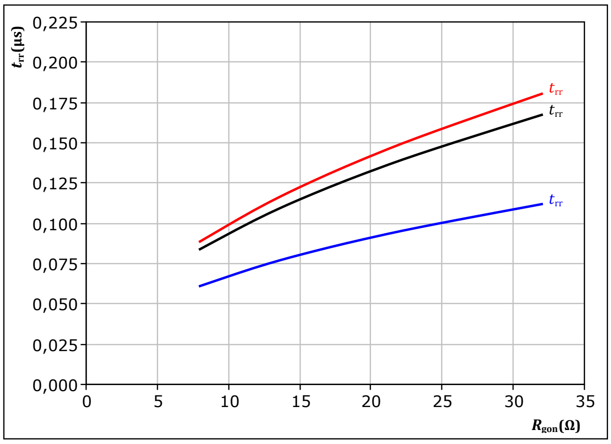
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω

T_j: 25 °C, 125 °C, 150 °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} =	-5/15	V
I_C =	160	A

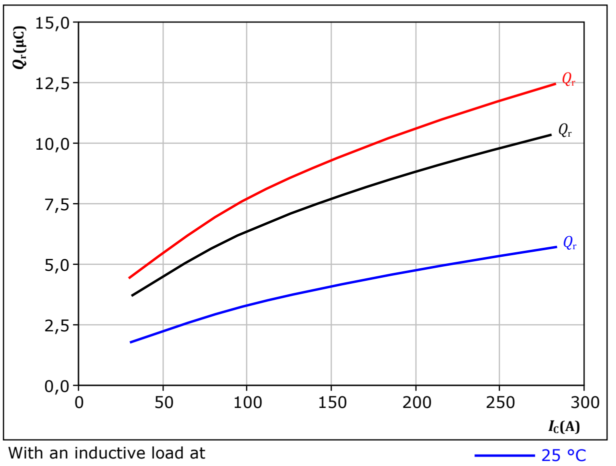
T_j: 25 °C, 125 °C, 150 °C

AC 1 Switching Characteristics L

figure 38. **FWD**

Typical recovered charge as a function of collector current

Q_r = f(I_C)



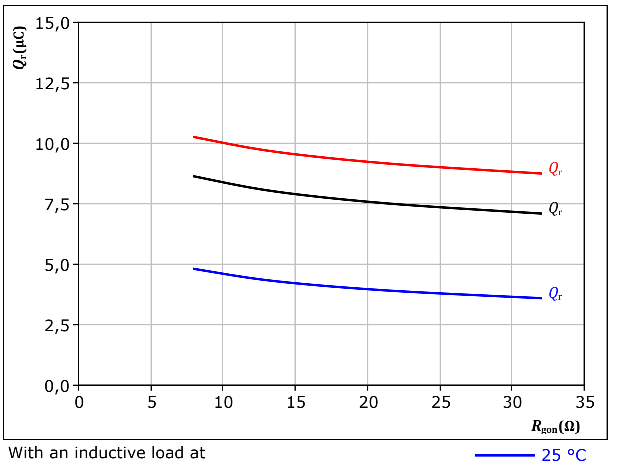
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 39. **FWD**

Typical recovered charge as a function of turn on gate resistor

Q_r = f(R_{gon})



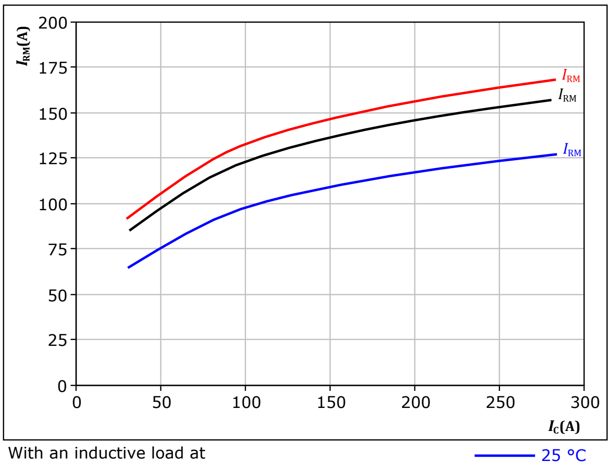
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

figure 40. **FWD**

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



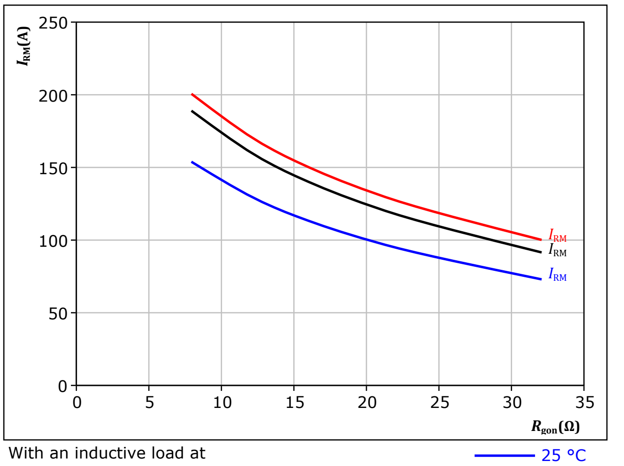
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 41. **FWD**

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

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



With an inductive load at

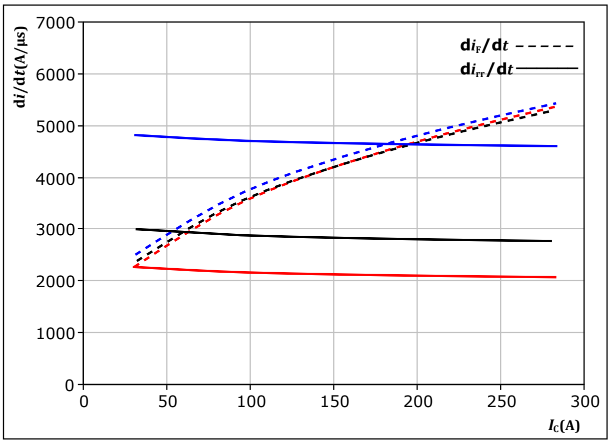
V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

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)



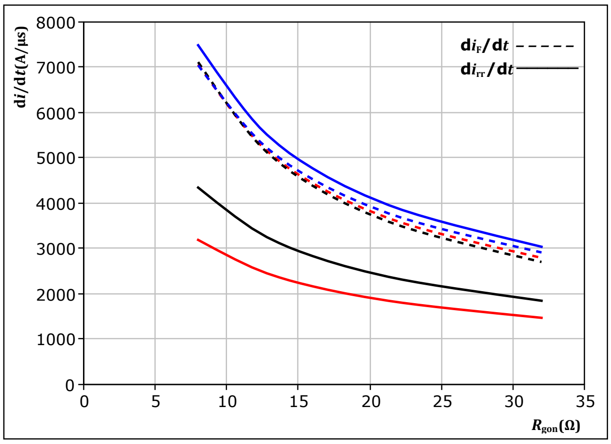
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	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})



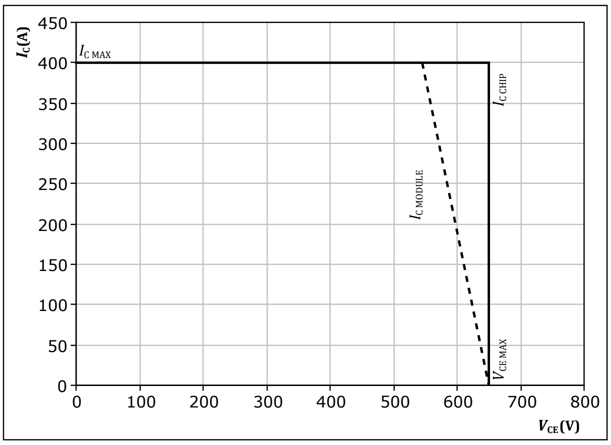
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

figure 44. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



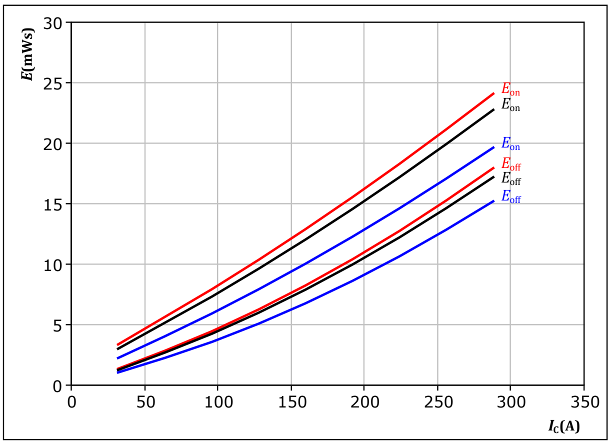
At	T_j =	150	°C
	R_{gon} =	16	Ω
	R_{goff} =	16	Ω

AC 1 Switching Characteristics H

figure 45. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



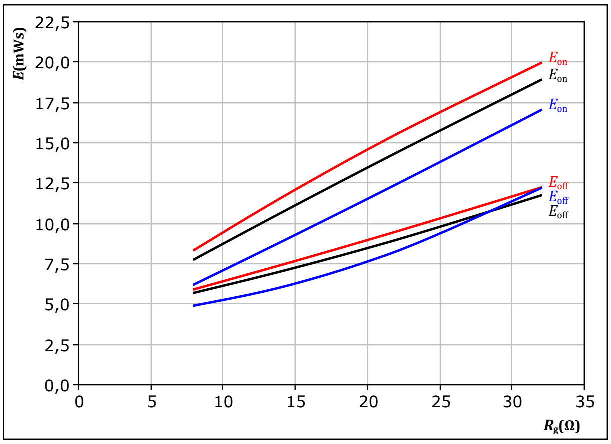
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C
R_{goff} =	16	Ω		

figure 46. **IGBT**

Typical switching energy losses as a function of gate resistor

$E = f(R_g)$



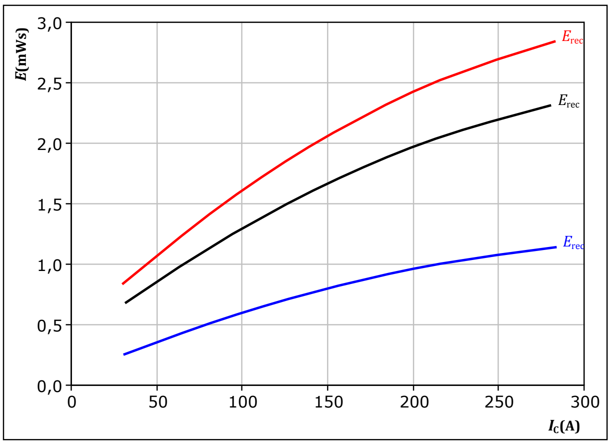
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 47. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



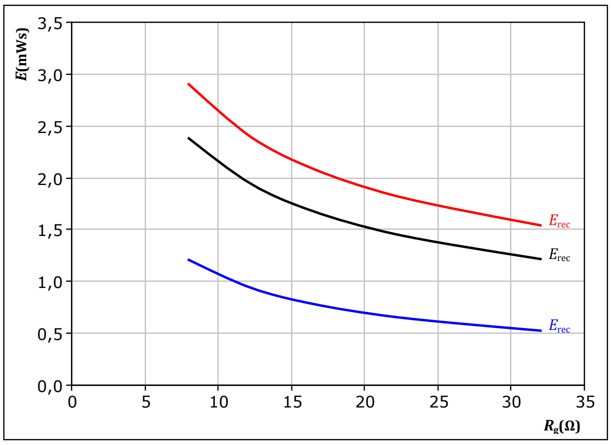
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

figure 48. **FWD**

Typical reverse recovered energy loss as a function of gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

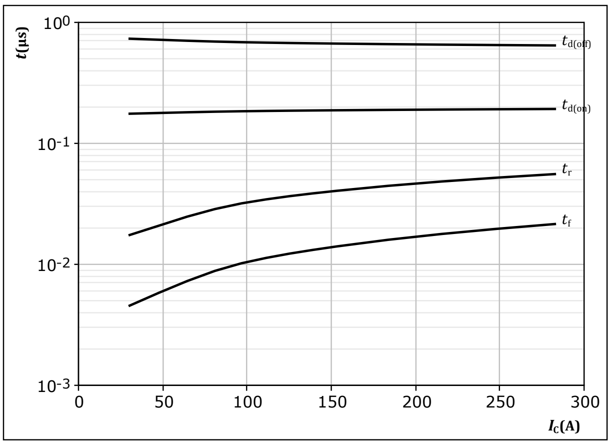
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

AC 1 Switching Characteristics H

figure 49. **IGBT**

Typical switching times as a function of collector current

$t = f(I_C)$



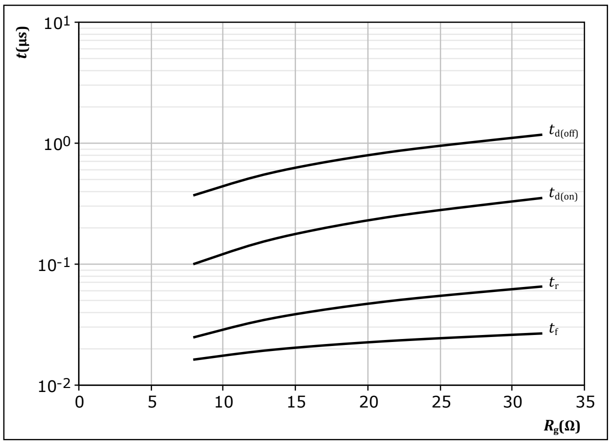
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω
R_{goff} =	16	Ω

figure 50. **IGBT**

Typical switching times as a function of gate resistor

$t = f(R_g)$



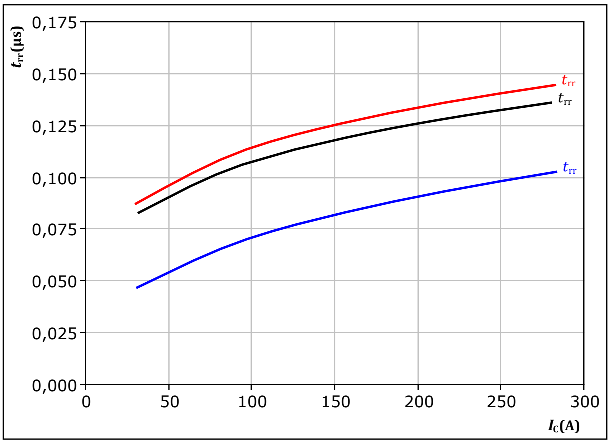
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
I_C =	160	A

figure 51. **FWD**

Typical reverse recovery time as a function of collector current

$t_{rr} = f(I_C)$



With an inductive load at

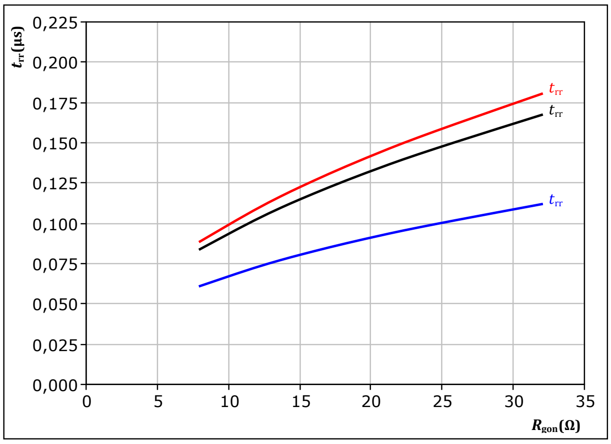
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω

T_j: 25 °C, 125 °C, 150 °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} =	-5/15	V
I_C =	160	A

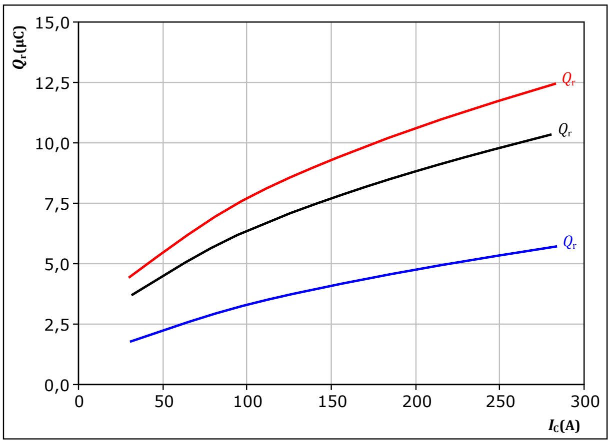
T_j: 25 °C, 125 °C, 150 °C

AC 1 Switching Characteristics H

figure 53. **FWD**

Typical recovered charge as a function of collector current

Q_r = f(I_C)



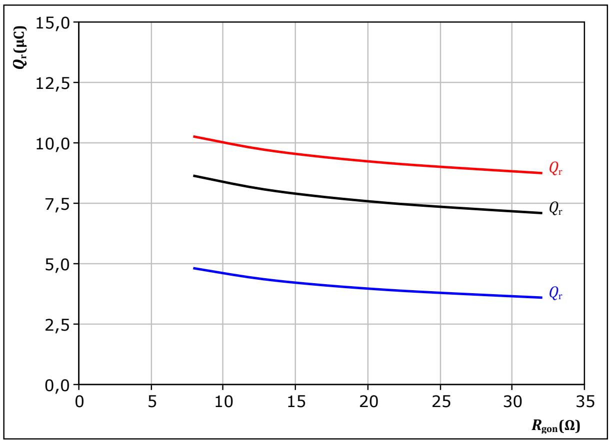
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 54. **FWD**

Typical recovered charge as a function of turn on gate resistor

Q_r = f(R_{gon})



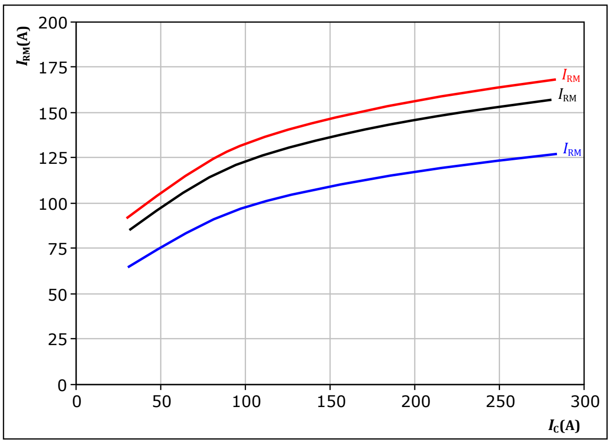
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

figure 55. **FWD**

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



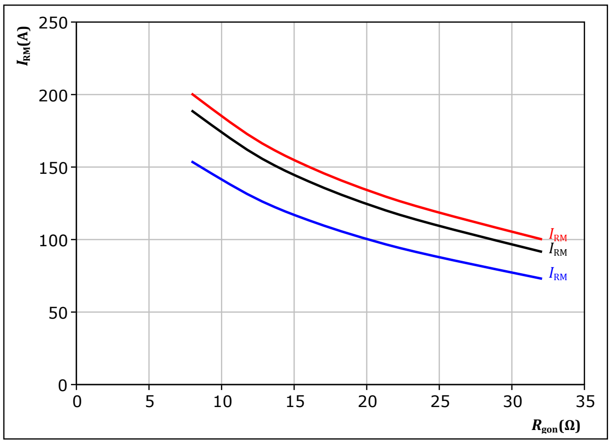
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 56. **FWD**

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

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



With an inductive load at

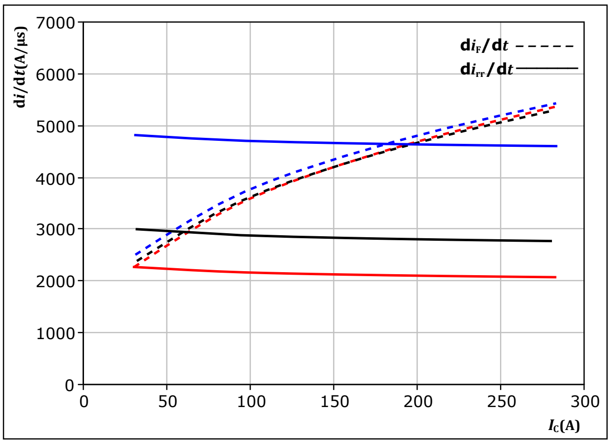
V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

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

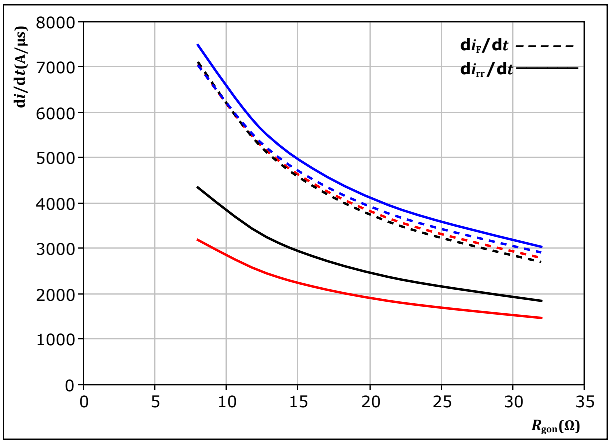
V_{CE} =	600	V	
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

T_j: 25 °C, 125 °C, 150 °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

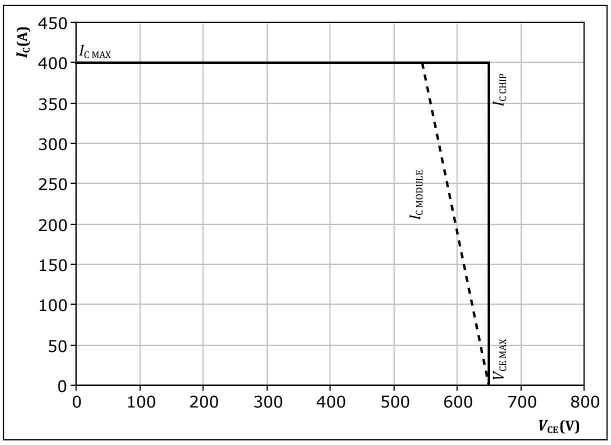
V_{CE} =	600	V
V_{GE} =	-5/15	V
I_C =	160	A

T_j: 25 °C, 125 °C, 150 °C

figure 59. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



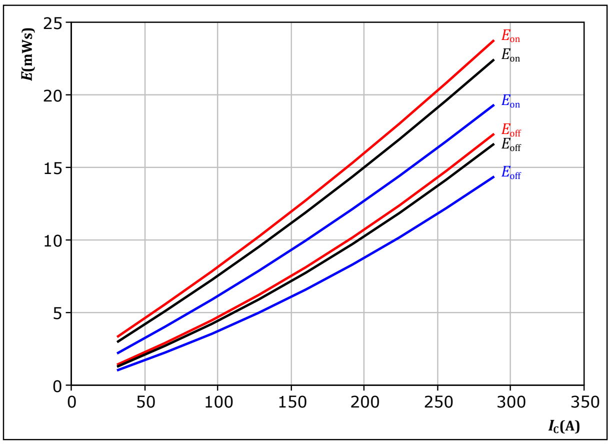
At			
	T_j =	150	°C
	R_{gon} =	16	Ω
	R_{goff} =	16	Ω

AC 2 Switching Characteristics L

figure 60. IGBT

Typical switching energy losses as a function of collector current

$E = f(I_C)$



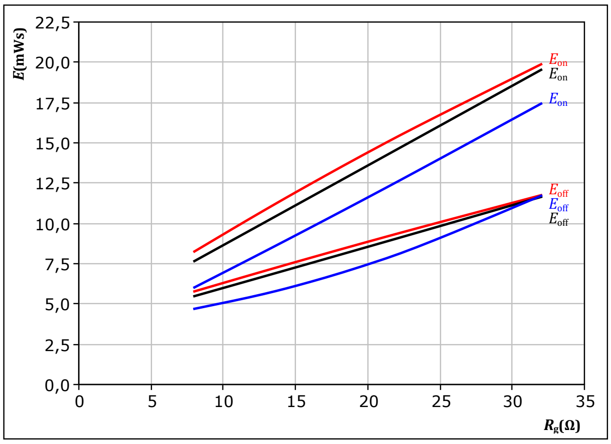
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C
R_{goff} =	16	Ω		

figure 61. IGBT

Typical switching energy losses as a function of gate resistor

$E = f(R_g)$



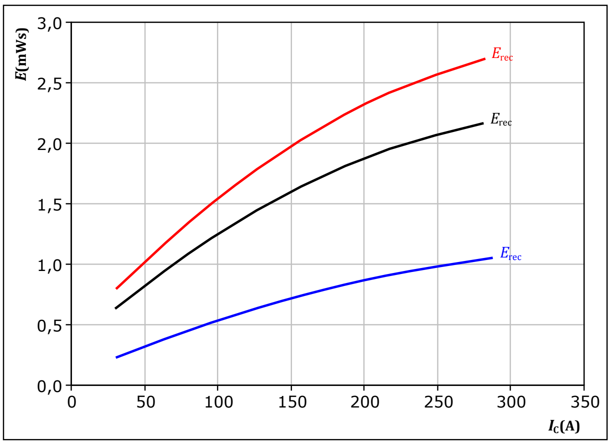
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 62. FWD

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



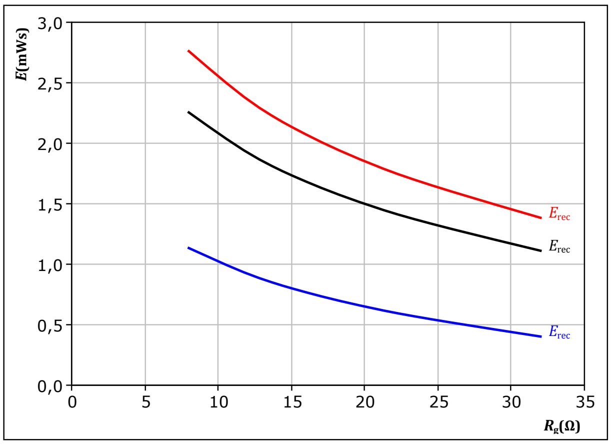
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

figure 63. FWD

Typical reverse recovered energy loss as a function of gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

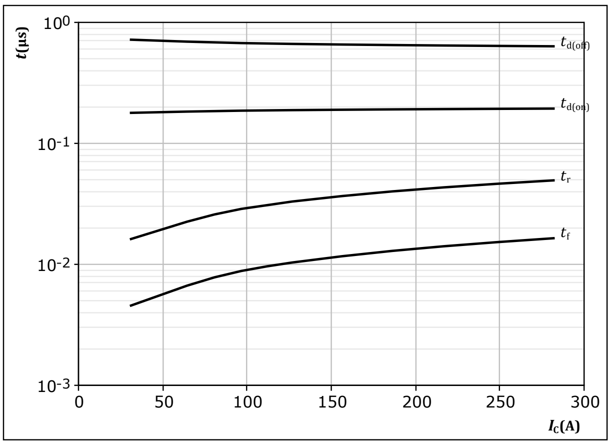
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

AC 2 Switching Characteristics L

figure 64. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



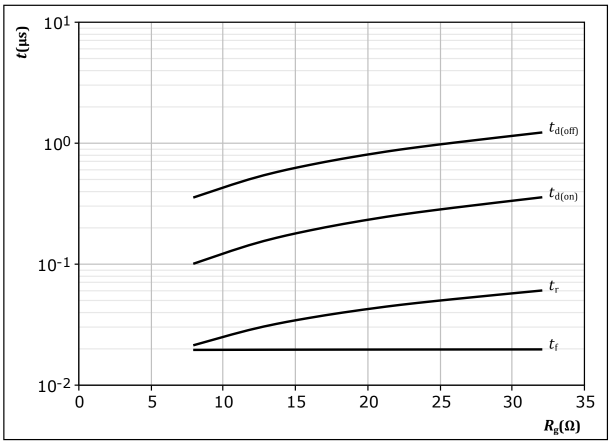
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω
R_{goff} =	16	Ω

figure 65. **IGBT**

Typical switching times as a function of gate resistor

t = f(R_g)



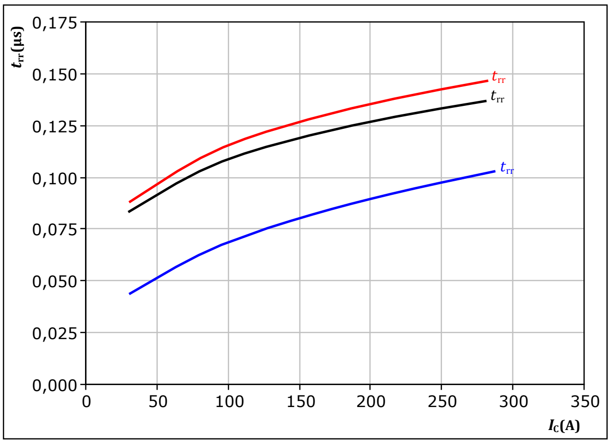
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
I_C =	160	A

figure 66. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

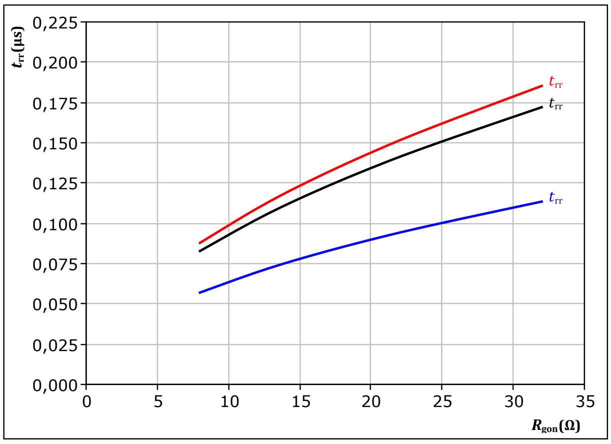
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω

T_j: 25 °C, 125 °C, 150 °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} =	-5/15	V
I_C =	160	A

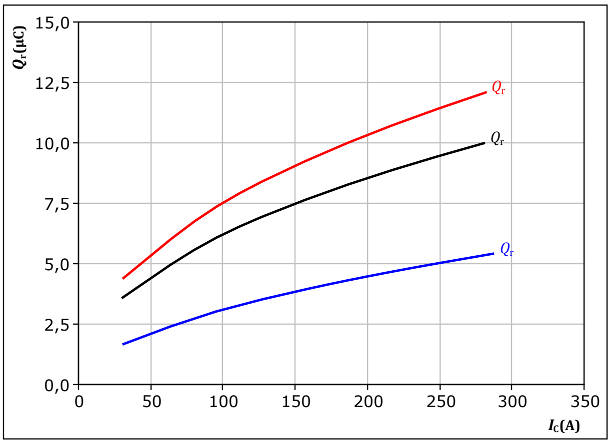
T_j: 25 °C, 125 °C, 150 °C

AC 2 Switching Characteristics L

figure 68. FWD

Typical recovered charge as a function of collector current

$Q_r = f(I_C)$



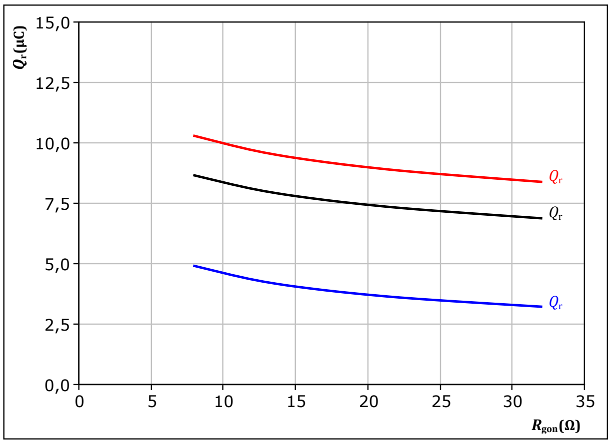
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 69. FWD

Typical recovered charge as a function of turn on gate resistor

$Q_r = f(R_{gon})$



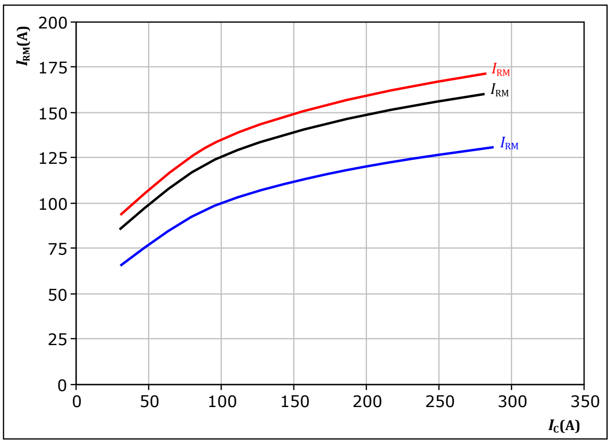
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

figure 70. FWD

Typical peak reverse recovery current as a function of collector current

$I_{RM} = f(I_C)$



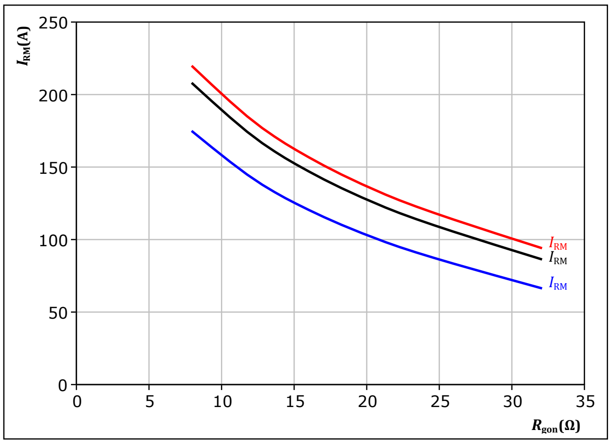
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 71. FWD

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

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



With an inductive load at

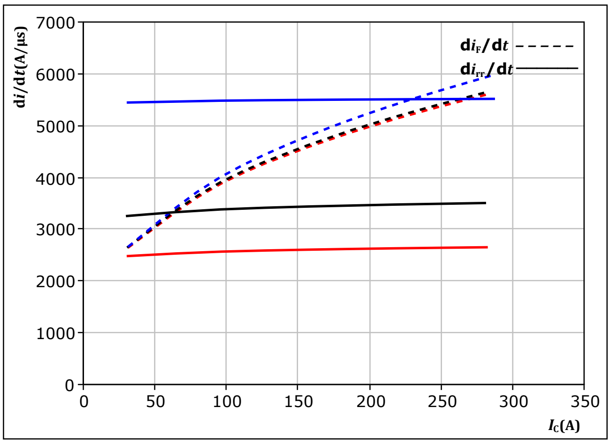
V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

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)



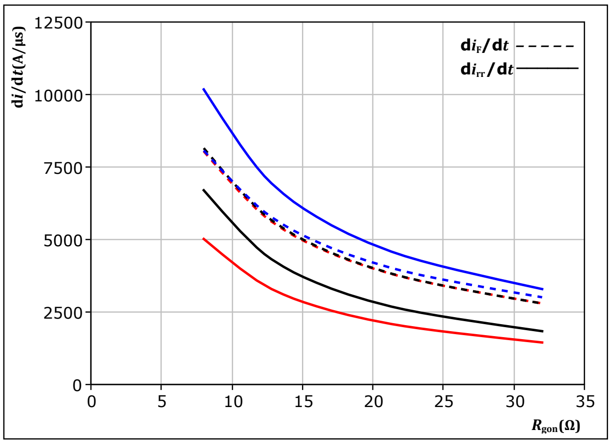
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

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})



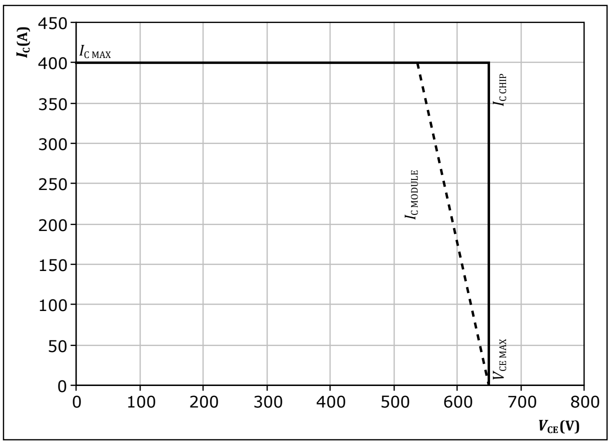
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 74. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



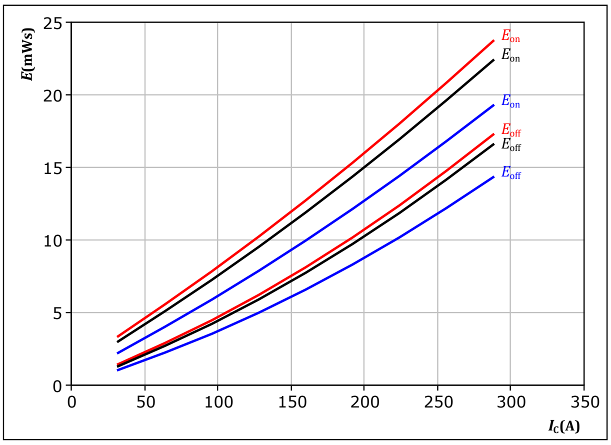
At	T_j =	150	°C
	R_{gon} =	16	Ω
	R_{goff} =	16	Ω

AC 2 Switching Characteristics H

figure 75. **IGBT**

Typical switching energy losses as a function of collector current

$E = f(I_C)$



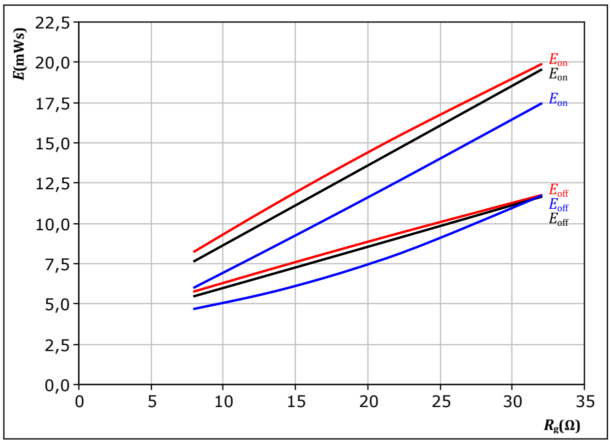
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	
R_{goff} =	16	Ω	

figure 76. **IGBT**

Typical switching energy losses as a function of gate resistor

$E = f(R_g)$



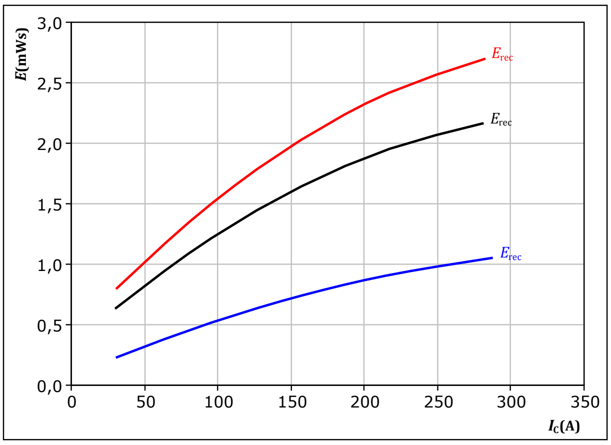
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

figure 77. **FWD**

Typical reverse recovered energy loss as a function of collector current

$E_{rec} = f(I_C)$



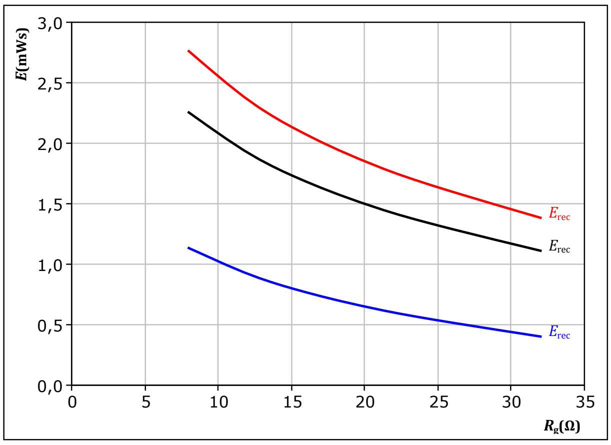
With an inductive load at

V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
R_{gon} =	16	Ω	

figure 78. **FWD**

Typical reverse recovered energy loss as a function of gate resistor

$E_{rec} = f(R_g)$



With an inductive load at

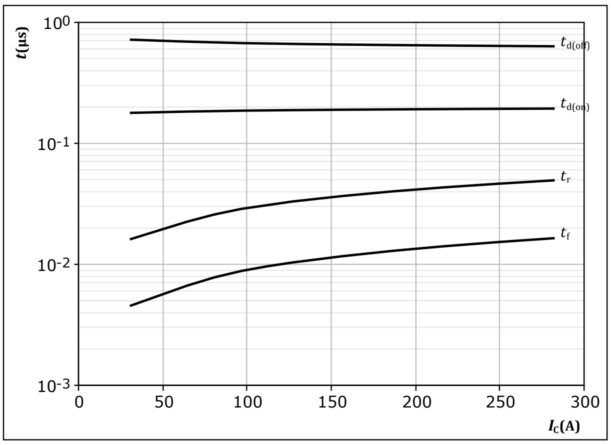
V_{CE} =	600	V	T_j: 25 °C / 125 °C / 150 °C
V_{GE} =	-5/15	V	
I_C =	160	A	

AC 2 Switching Characteristics H

figure 79. **IGBT**

Typical switching times as a function of collector current

t = f(I_C)



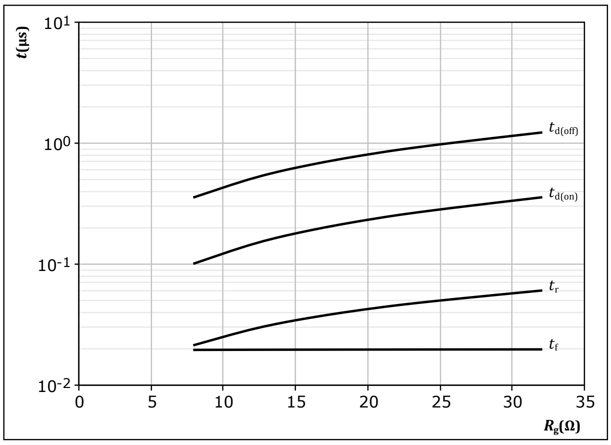
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω
R_{goff} =	16	Ω

figure 80. **IGBT**

Typical switching times as a function of gate resistor

t = f(R_g)



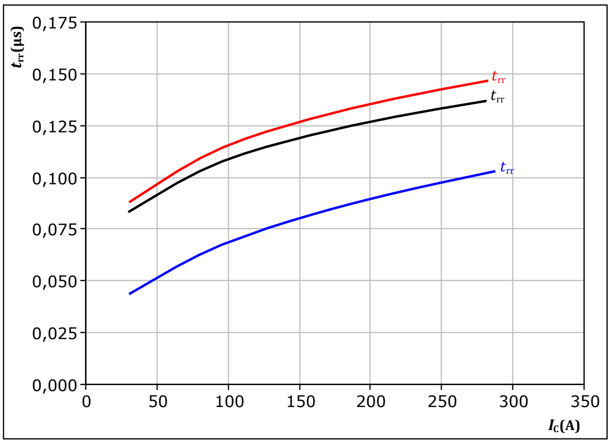
With an inductive load at

T_j =	150	°C
V_{CE} =	600	V
V_{GE} =	-5/15	V
I_C =	160	A

figure 81. **FWD**

Typical reverse recovery time as a function of collector current

t_{rr} = f(I_C)



With an inductive load at

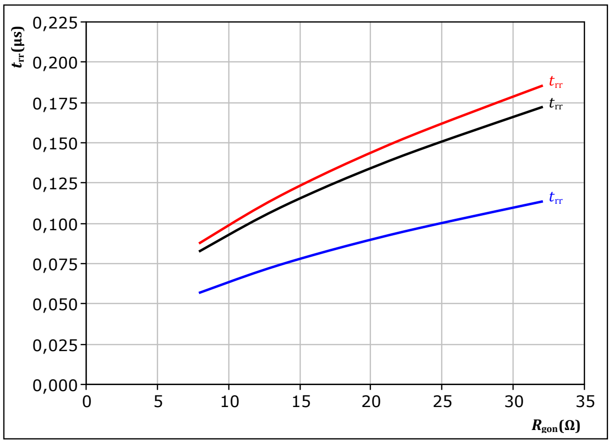
V_{CE} =	600	V
V_{GE} =	-5/15	V
R_{gon} =	16	Ω

T_j: 25 °C, 125 °C, 150 °C

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} =	-5/15	V
I_C =	160	A

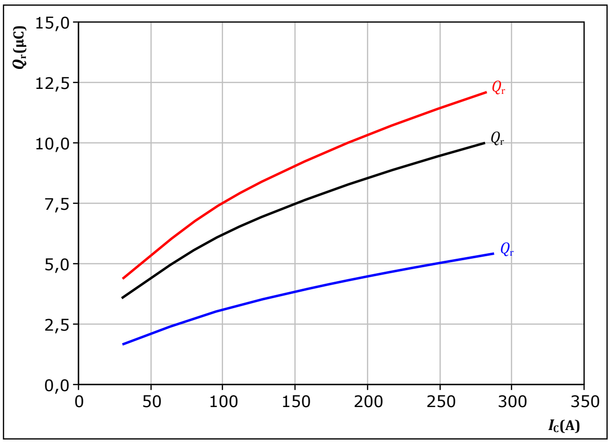
T_j: 25 °C, 125 °C, 150 °C

AC 2 Switching Characteristics H

figure 83. FWD

Typical recovered charge as a function of collector current

Q_r = f(I_C)



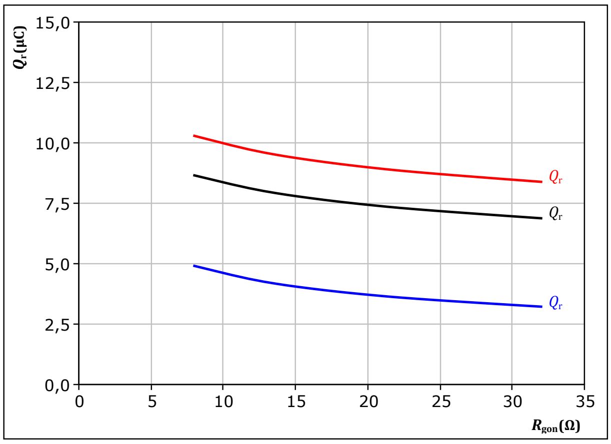
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

figure 84. FWD

Typical recovered charge as a function of turn on gate resistor

Q_r = f(R_{gon})



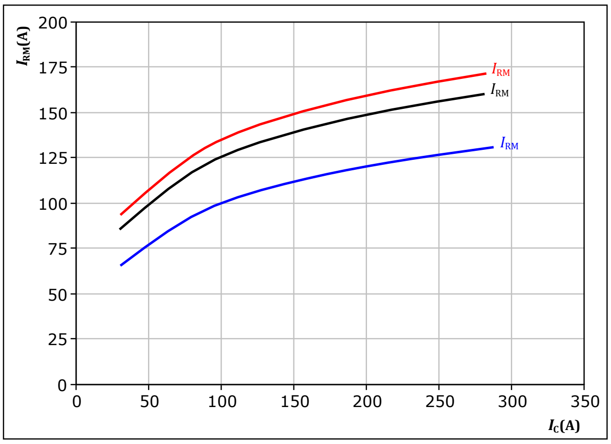
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 85. FWD

Typical peak reverse recovery current as a function of collector current

I_{RM} = f(I_C)



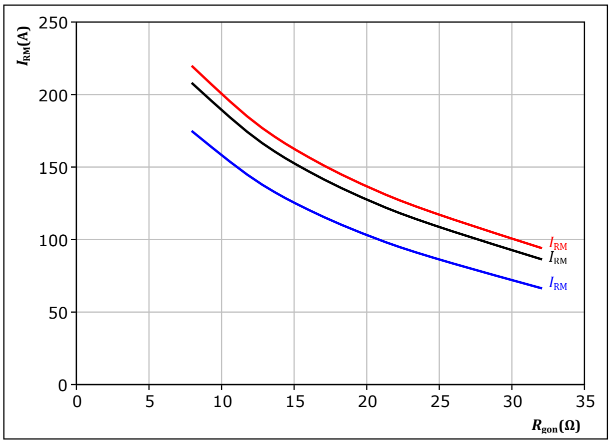
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

figure 86. FWD

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

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



With an inductive load at

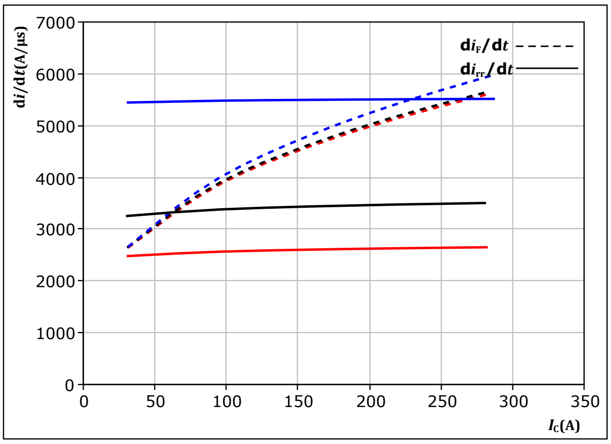
V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

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)



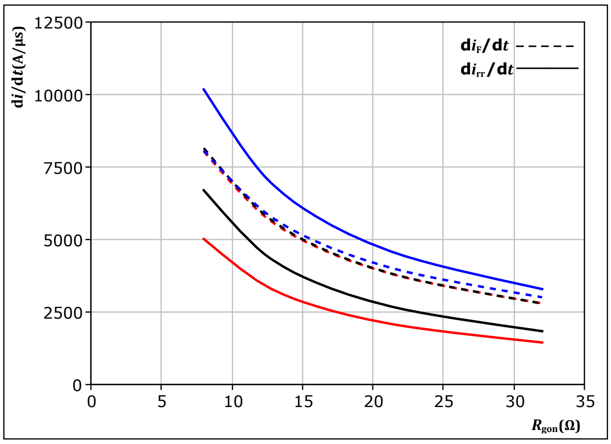
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
R_{gon} =	16	Ω		150 °C

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})



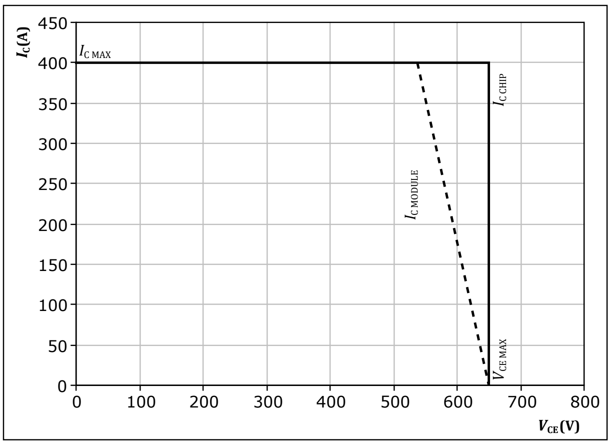
With an inductive load at

V_{CE} =	600	V	T_j:	25 °C
V_{GE} =	-5/15	V		125 °C
I_C =	160	A		150 °C

figure 89. **IGBT**

Reverse bias safe operating area

I_C = f(V_{CE})



At	T_j =	150	°C
	R_{gon} =	16	Ω
	R_{goff} =	16	Ω

Switching Definitions

figure 90. **IGBT**

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

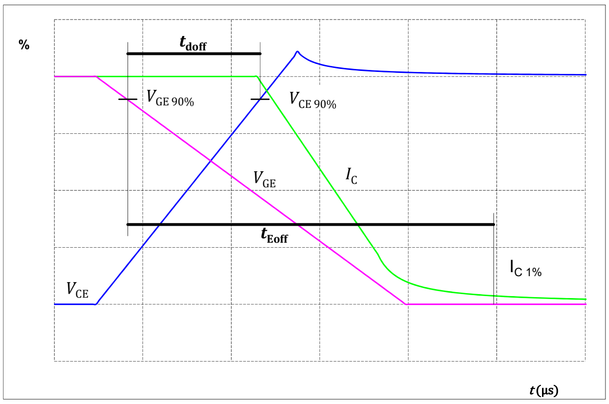


figure 91. **IGBT**

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

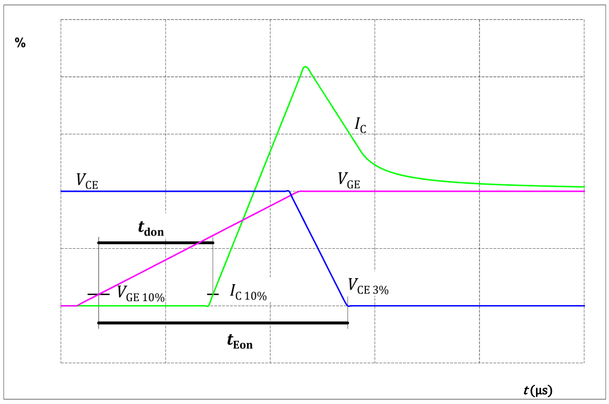


figure 92. **IGBT**

Turn-off Switching Waveforms & definition of t_f

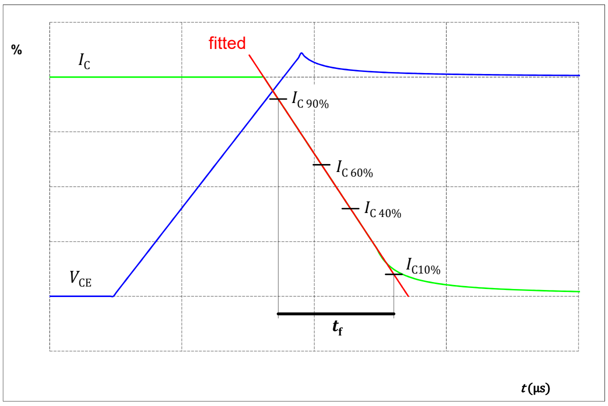
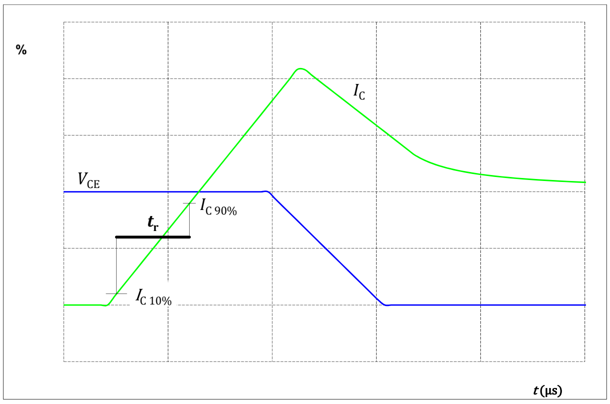


figure 93. **IGBT**

Turn-on Switching Waveforms & definition of t_r



Switching Definitions

figure 94. FWD

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

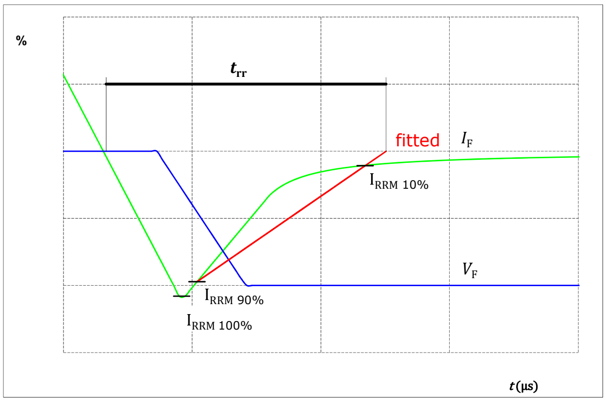
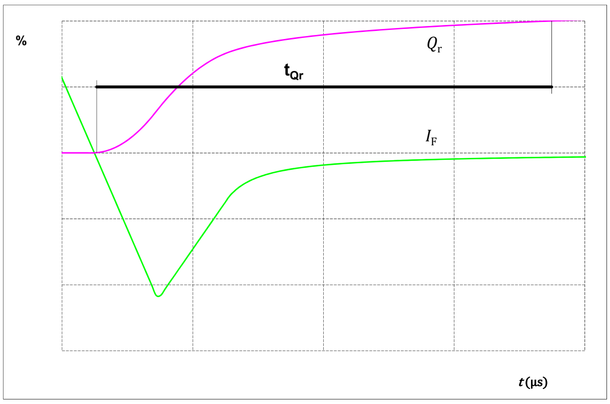


figure 95. FWD

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



Ordering Code

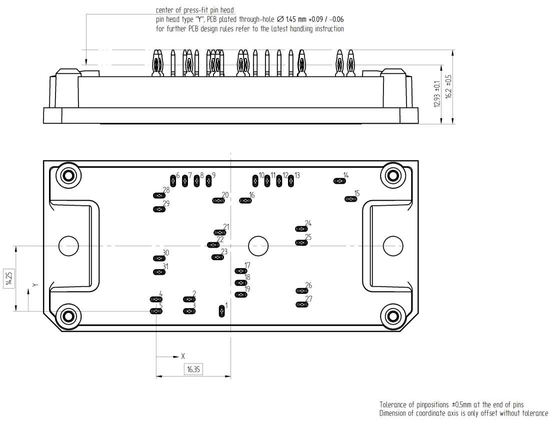
Version	Ordering Code
Without thermal paste	10-PY07FCA200RG-LQ45L60Y
With thermal paste	10-PY07FCA200RG-LQ45L60Y-/3/

Marking

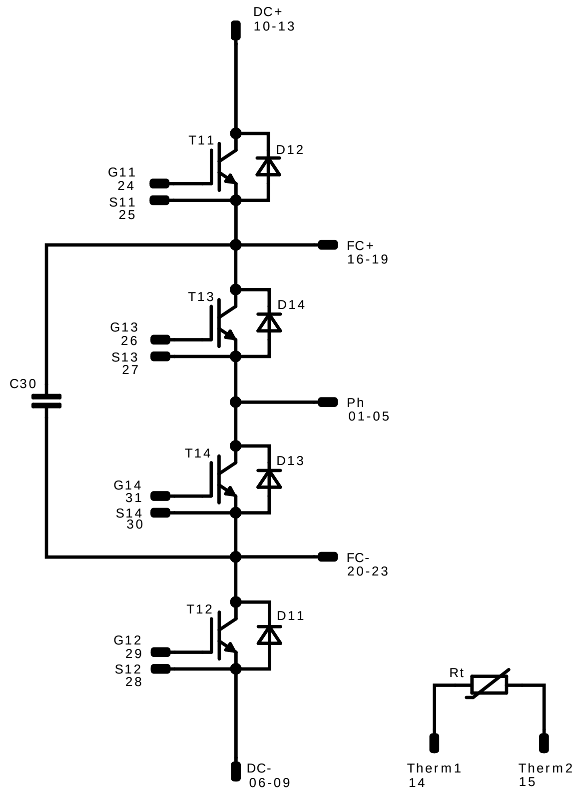
	**Text**	**Name**		**Date code**	**UL & VIN**	**Lot**	**Serial**
		NN-NNNNNNNNNNNNNN-TTTTTTVV		WWYY	UL VIN	LLLLL	SSSS
	Datamatrix	**Type&Ver**	**Lot number**	**Serial**	**Date code**		
		TTTTTTTVV	LLLLL	SSSS	WWYY		

Outline

Pin table [mm]			
Pin	X	Y	Function
1	14,35	0	Ph
2	7,25	2,6	Ph
3	7,25	0	Ph
4	0	2,6	Ph
5	0	0	Ph
6	3,7	28,5	DC-
7	6,3	28,5	DC-
8	8,9	28,5	DC-
9	11,5	28,5	DC-
10	21,7	28,5	DC+
11	24,3	28,5	DC+
12	26,9	28,5	DC+
13	29,5	28,5	DC+
14	40,15	28,5	Therm1
15	42,6	24,55	Therm2
16	19,55	24,2	FC+
17	18,55	8,8	FC+
18	18,55	6,2	FC+
19	18,55	3,6	FC+
20	13,65	24,2	FC-
21	13,95	17,2	FC-
22	12,5	14,5	FC-
23	13,45	11,8	FC-
24	31,8	18	G11
25	31,8	15	S11
26	31,9	4,45	G13
27	31,9	1,45	S13
28	0,7	25,3	S12
29	0,7	22,3	G12
30	0,7	11,55	S14
31	0,7	8,55	G14



Pinout



Identification

ID	Component	Voltage	Current	Function	Comment
T12	IGBT	650 V	200 A	AC 1 Switch L	
D11	FWD	650 V	200 A	AC 1 Diode L	
T11	IGBT	650 V	200 A	AC 1 Switch H	
D12	FWD	650 V	200 A	AC 1 Diode H	
T14	IGBT	650 V	200 A	AC 2 Switch L	
D13	FWD	650 V	200 A	AC 2 Diode L	
T13	IGBT	650 V	200 A	AC 2 Switch H	
D14	FWD	650 V	200 A	AC 2 Diode H	
C30	Capacitor	630 V		Flying Capacitor	
Rt	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-PY07FCA200RG-LQ45L60Y-D1-14	9 Jun. 2020		