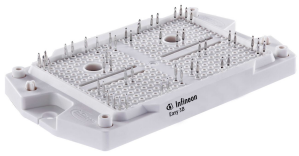
EasyPACK™ module with TRENCHSTOP™ 5 and Emitter Controlled 3 diode and PressFIT / NTC



Features

- Electrical features
  - V_{CES} = 650 V
  - $I_{C\ nom}$ = 200 A / I_{CRM} = 400 A
  - Low switching losses
- Mechanical features
  - Al_2O_3 substrate with low thermal resistance
  - Compact design
  - PressFIT contact technology
  - Integrated NTC temperature sensor
  - High power density

Potential applications

- Solar applications
- 3-level-applications

Product validation

- Qualified for industrial applications according to the relevant tests of IEC 60747, 60749 and 60068

Description

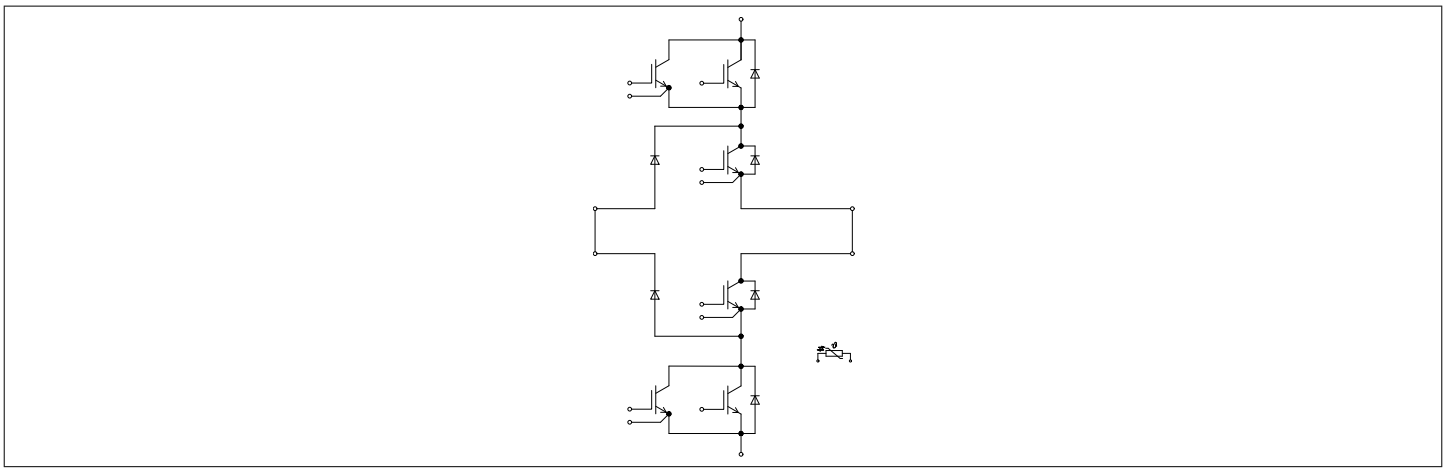


Table of contents

1 Package

Table 1 Insulation coordination

Parameter	Symbol	Note or test condition	Values	Unit
Isolation test voltage	V_{ISOL}	RMS, f = 50 Hz, *t* = 1 min	3.2	kV
Internal Isolation		basic insulation (class 1, IEC 61140)	Al_2O_3	
Creepage distance	d_{Creep}	terminal to heatsink	11.2	mm
Creepage distance	d_{Creep}	terminal to terminal	6.8	mm
Clearance	d_{Clear}	terminal to heatsink	9.4	mm
Clearance	d_{Clear}	terminal to terminal	5.5	mm
Comparative tracking index	*CTI*		> 400	
RTI Elec.	*RTI*	housing	140	°C

Table 2 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Stray inductance module	L_{sCE}				12		nH
Storage temperature	T_{stg}			-40		125	°C
Mounting torque for modul mounting	*M*	- Mounting according to valid application note	M5, Screw	1.3		1.5	Nm
Weight	*G*				78		g

Note: The current under continuous operation is limited to 25A rms per connector pin.

2 IGBT, T1.1 / T1.2 / T4.1 / T4.2

Table 3 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Collector-emitter voltage	V_{CES}		T_{vj} = 25 °C	650	V
Implemented collector current	I_{CN}			200	A
Continous DC collector current	I_{CDC}	$T_{vj\,max}$ = 175 °C	T_H = 65 °C	130	A
Repetitive peak collector current	I_{CRM}	t_P = 1 ms		400	A
Gate-emitter peak voltage	V_{GES}			±20	V

Table 4 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Collector-emitter saturation voltage	$V_{CE\,sat}$	I_C = 100 A, V_{GE} = 15 V	T_{vj} = 25 °C		1.17	1.50	V
			T_{vj} = 125 °C		1.20		
			T_{vj} = 150 °C		1.21		
Gate threshold voltage	V_{GEth}	I_C = 2 mA, V_{CE} = V_{GE}, T_{vj} = 25 °C		3.25	4	4.75	V
Gate charge	Q_G	V_{GE} = ±15 V, V_{CE} = 400 V			0.84		µC
Internal gate resistor	R_{Gint}	T_{vj} = 25 °C			0		Ω
Input capacitance	C_{ies}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			14.3		nF
Reverse transfer capacitance	C_{res}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			0.05		nF
Collector-emitter cut-off current	I_{CES}	V_{CE} = 650 V, V_{GE} = 0 V	T_{vj} = 25 °C			0.019	mA
Gate-emitter leakage current	I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V, T_{vj} = 25 °C				100	nA
Turn-on delay time (inductive load)	t_{don}	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Gon} = 4.7 Ω	T_{vj} = 25 °C		0.022		µs
			T_{vj} = 125 °C		0.021		
			T_{vj} = 150 °C		0.021		
Rise time (inductive load)	t_r	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Gon} = 4.7 Ω	T_{vj} = 25 °C		0.013		µs
			T_{vj} = 125 °C		0.015		
			T_{vj} = 150 °C		0.015		
Turn-off delay time (inductive load)	t_{doff}	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Goff} = 4.7 Ω	T_{vj} = 25 °C		0.117		µs
			T_{vj} = 125 °C		0.145		
			T_{vj} = 150 °C		0.158		
Fall time (inductive load)	t_f	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Goff} = 4.7 Ω	T_{vj} = 25 °C		0.044		µs
			T_{vj} = 125 °C		0.046		
			T_{vj} = 150 °C		0.047		
Turn-on energy loss per pulse	E_{on}	I_C = 100 A, V_{CE} = 300 V, L_σ = 35 nH, V_{GE} = ±15 V, R_{Gon} = 4.7 Ω, di/dt = 12.5 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		1		mJ
			T_{vj} = 125 °C		1.4		
			T_{vj} = 150 °C		1.49		
Turn-off energy loss per pulse	E_{off}	I_C = 100 A, V_{CE} = 300 V, L_σ = 35 nH, V_{GE} = ±15 V, R_{Goff} = 4.7 Ω, dv/dt = 4400 V/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		0.78		mJ
			T_{vj} = 125 °C		1.28		
			T_{vj} = 150 °C		1.4		
Thermal resistance, junction to heatsink	R_{thJH}	per IGBT, λ_{grease}= 3.3 W/(m*K)			0.478		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		150	°C

3 IGBT, T2 / T3

Table 5 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Collector-emitter voltage	V_{CES}		T_{vj} = 25 °C	650	V
Implemented collector current	I_{CN}			300	A
Continous DC collector current	I_{CDC}	$T_{vj\,max}$ = 175 °C	T_H = 65 °C	255	A
Repetitive peak collector current	I_{CRM}	t_P = 1 ms		600	A
Gate-emitter peak voltage	V_{GES}			±20	V

Table 6 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Collector-emitter saturation voltage	$V_{CE\,sat}$	I_C = 100 A, V_{GE} = 15 V	T_{vj} = 25 °C		0.88	1.13	V
			T_{vj} = 125 °C		0.80		
			T_{vj} = 150 °C		0.77		
Gate threshold voltage	V_{GEth}	I_C = 4 mA, V_{CE} = 20 V, T_{vj} = 25 °C		4.25	5	5.75	V
Gate charge	Q_G	V_{GE} = ±15 V, V_{CE} = 400 V			3.7		µC
Internal gate resistor	R_{Gint}	T_{vj} = 25 °C			0		Ω
Input capacitance	C_{ies}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			47.1		nF
Reverse transfer capacitance	C_{res}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			0.168		nF
Collector-emitter cut-off current	I_{CES}	V_{CE} = 650 V, V_{GE} = 0 V	T_{vj} = 25 °C			0.019	mA
Gate-emitter leakage current	I_{GES}	V_{CE} = 0 V, V_{GE} = 20 V, T_{vj} = 25 °C				100	nA
Turn-on delay time (inductive load)	t_{don}	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Gon} = 6.8 Ω	T_{vj} = 25 °C		0.128		µs
			T_{vj} = 125 °C		0.108		
			T_{vj} = 150 °C		0.103		
Rise time (inductive load)	t_r	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Gon} = 6.8 Ω	T_{vj} = 25 °C		0.025		µs
			T_{vj} = 125 °C		0.030		
			T_{vj} = 150 °C		0.031		
Turn-off delay time (inductive load)	t_{doff}	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Goff} = 6.8 Ω	T_{vj} = 25 °C		0.693		µs
			T_{vj} = 125 °C		0.821		
			T_{vj} = 150 °C		0.853		

Table 6 Characteristic values (continued)

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Fall time (inductive load)	t_f	I_C = 100 A, V_{CE} = 300 V, V_{GE} = ±15 V, R_{Goff} = 6.8 Ω	T_{vj} = 25 °C		0.129		µs
			T_{vj} = 125 °C		0.213		
			T_{vj} = 150 °C		0.234		
Turn-on energy loss per pulse	E_{on}	I_C = 100 A, V_{CE} = 300 V, L_σ = 35 nH, V_{GE} = ±15 V, R_{Gon} = 6.8 Ω, di/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		1.06		mJ
			T_{vj} = 125 °C		1.44		
			T_{vj} = 150 °C		1.54		
Turn-off energy loss per pulse	E_{off}	I_C = 100 A, V_{CE} = 300 V, L_σ = 35 nH, V_{GE} = ±15 V, R_{Goff} = 6.8 Ω, dv/dt = 760 V/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		5.24		mJ
			T_{vj} = 125 °C		8.18		
			T_{vj} = 150 °C		8.84		
Thermal resistance, junction to heatsink	R_{thJH}	per IGBT, λ_{grease}= 3.3 W/(m*K)			0.300		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		150	°C

4 Diode, D1 / D4

Table 7 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Repetitive peak reverse voltage	V_{RRM}		T_{vj} = 25 °C	650	V
Implemented forward current	I_{FN}			225	A
Continous DC forward current	I_F			100	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		450	A
I^2t - value	I^2t	V_R = 0 V, t_P = 10 ms	T_{vj} = 125 °C	3030	A^2s
			T_{vj} = 150 °C	2760	

Table 8 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 100 A, V_{GE} = 0 V	T_{vj} = 25 °C		1.26	1.55	V
			T_{vj} = 125 °C		1.16		
			T_{vj} = 150 °C		1.11		

Table 8 Characteristic values (continued)

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Peak reverse recovery current	I_{RM}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		105		A
			T_{vj} = 125 °C		141		
			T_{vj} = 150 °C		151		
Recovered charge	Q_r	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		5.94		µC
			T_{vj} = 125 °C		11.6		
			T_{vj} = 150 °C		13.5		
Reverse recovery energy	E_{rec}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		1.3		mJ
			T_{vj} = 125 °C		2.58		
			T_{vj} = 150 °C		3.01		
Thermal resistance, junction to heatsink	R_{thJH}	per diode, λ_{grease}= 3.3 W/(m*K)			0.431		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		150	°C

5 Diode, D2 / D3

Table 9 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Repetitive peak reverse voltage	V_{RRM}		T_{vj} = 25 °C	650	V
Implemented forward current	I_{FN}			225	A
Continous DC forward current	I_F			100	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		450	A
I^2t - value	I^2t	V_R = 0 V, t_P = 10 ms	T_{vj} = 125 °C	3030	A^2s
			T_{vj} = 150 °C	2760	

Table 10 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 100 A, V_{GE} = 0 V	T_{vj} = 25 °C		1.26	1.55	V
			T_{vj} = 125 °C		1.16		
			T_{vj} = 150 °C		1.11		

Table 10 Characteristic values (continued)

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Peak reverse recovery current	I_{RM}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		105		A
			T_{vj} = 125 °C		141		
			T_{vj} = 150 °C		151		
Recovered charge	Q_r	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		5.94		µC
			T_{vj} = 125 °C		11.6		
			T_{vj} = 150 °C		13.5		
Reverse recovery energy	E_{rec}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 2700 A/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		1.3		mJ
			T_{vj} = 125 °C		2.58		
			T_{vj} = 150 °C		3.01		
Thermal resistance, junction to heatsink	R_{thJH}	per diode, λ_{grease}= 3.3 W/(m*K)			0.390		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		150	°C

6 Diode, D5 / D6

Table 11 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Repetitive peak reverse voltage	V_{RRM}		T_{vj} = 25 °C	650	V
Implemented forward current	I_{FN}			300	A
Continous DC forward current	I_F			100	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		600	A
I^2t - value	I^2t	V_R = 0 V, t_P = 10 ms	T_{vj} = 125 °C	6610	A^2s
			T_{vj} = 150 °C	6050	

Table 12 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 100 A, V_{GE} = 0 V	T_{vj} = 25 °C		1.19	1.47	V
			T_{vj} = 125 °C		1.07		
			T_{vj} = 150 °C		1.02		

Table 12 Characteristic values (continued)

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Peak reverse recovery current	I_{RM}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 12.5 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		135		A
			T_{vj} = 125 °C		186		
			T_{vj} = 150 °C		199		
Recovered charge	Q_r	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 12.5 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		5.05		µC
			T_{vj} = 125 °C		12		
			T_{vj} = 150 °C		14.4		
Reverse recovery energy	E_{rec}	I_F = 100 A, V_R = 300 V, V_{GE} = -15 V, -di$_F$/dt = 12.5 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		0.931		mJ
			T_{vj} = 125 °C		2.64		
			T_{vj} = 150 °C		3.26		
Thermal resistance, junction to heatsink	R_{thJH}	per diode, λ_{grease}= 3.3 W/(m*K)			0.479		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		150	°C

7 NTC-Thermistor

Table 13 Characteristic values

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Rated resistance	R_{25}	T_{NTC} = 25 °C		5		kΩ
Deviation of R_{100}	$\Delta R/R$	T_{NTC} = 100 °C, R_{100} = 493 Ω	-5		5	%
Power dissipation	P_{25}	T_{NTC} = 25 °C			20	mW
B-value	$B_{25/50}$	$R_2 = R_{25} \exp[B_{25/50}(1/T_2\text{-}1/(298{,}15\ K))]$		3375		K
B-value	$B_{25/80}$	$R_2 = R_{25} \exp[B_{25/80}(1/T_2\text{-}1/(298{,}15\ K))]$		3411		K
B-value	$B_{25/100}$	$R_2 = R_{25} \exp[B_{25/100}(1/T_2\text{-}1/(298{,}15\ K))]$		3433		K

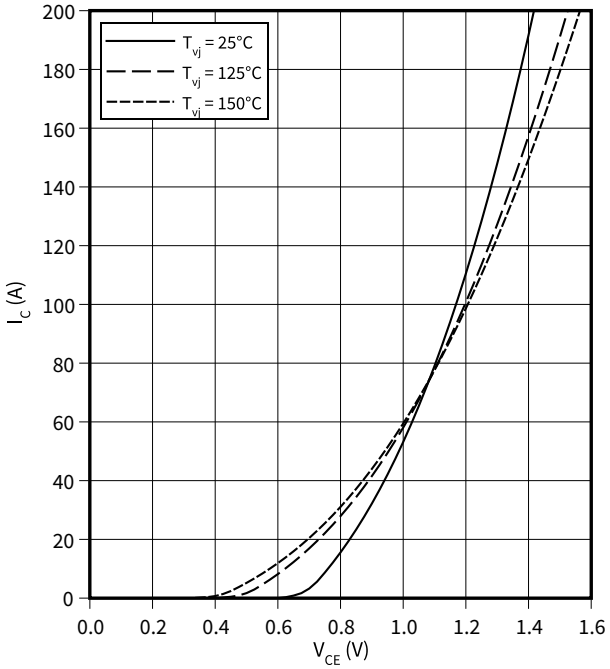
Note: Specification according to the valid application note.

8 Characteristics diagrams

output characteristic (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$I_C = f(V_{CE})$

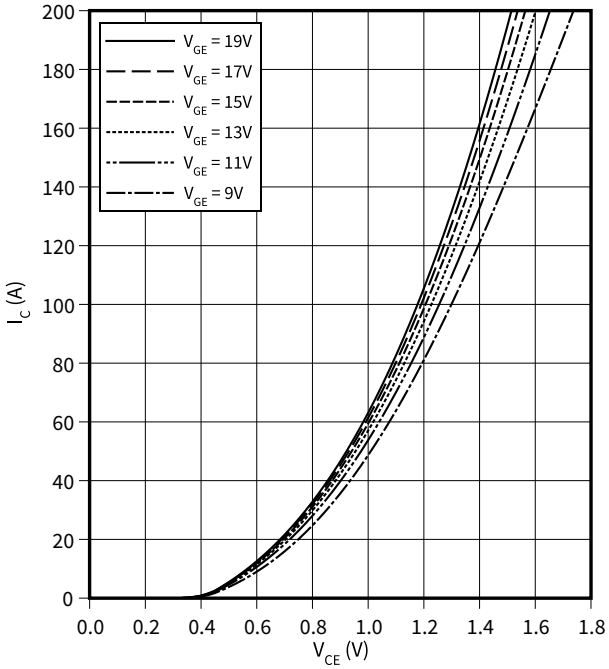
V_{GE} = 15 V



output characteristic (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$I_C = f(V_{CE})$

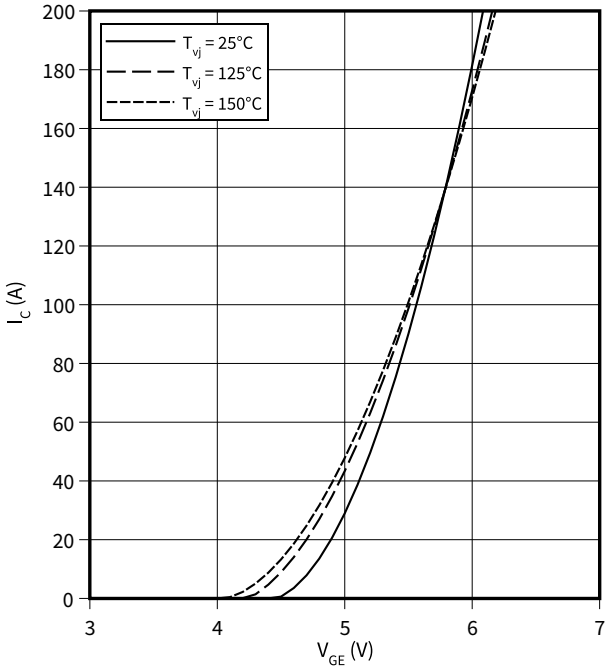
T_{vj} = 150 °C



transfer characteristic (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$I_C = f(V_{GE})$

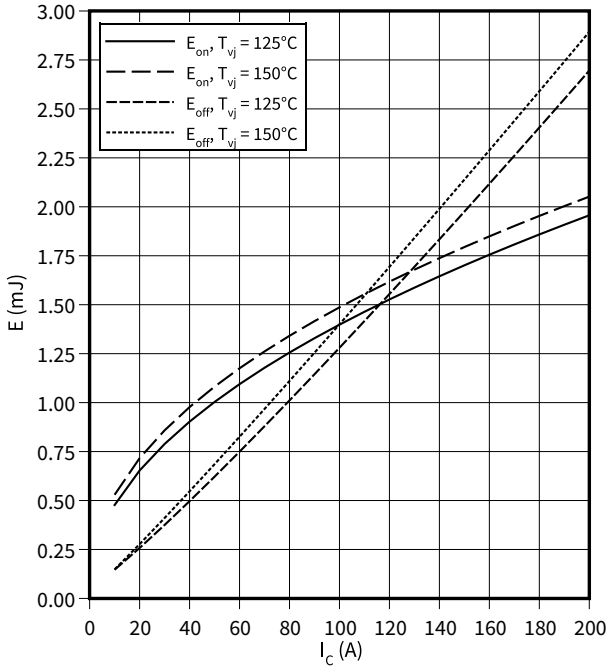
V_{CE} = 20 V



switching losses (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$E = f(I_C)$

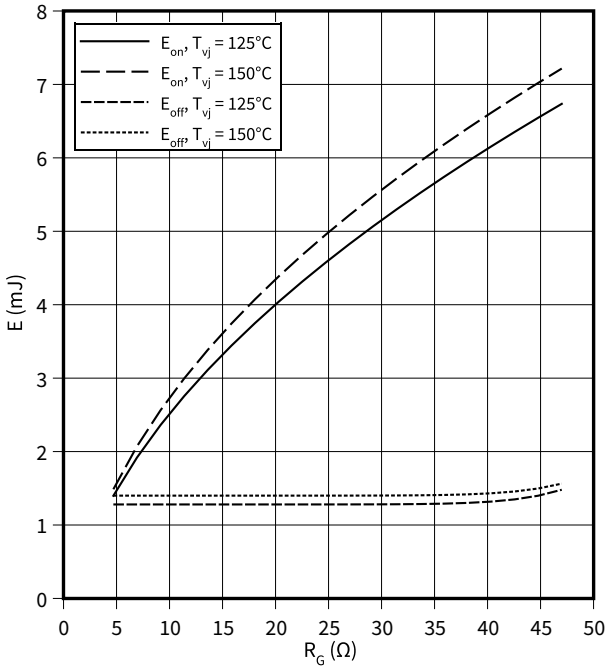
R_{Goff} = 4.7 Ω, R_{Gon} = 4.7 Ω, V_{CE} = 300 V, V_{GE} = ± 15 V



switching losses (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$E = f(R_G)$

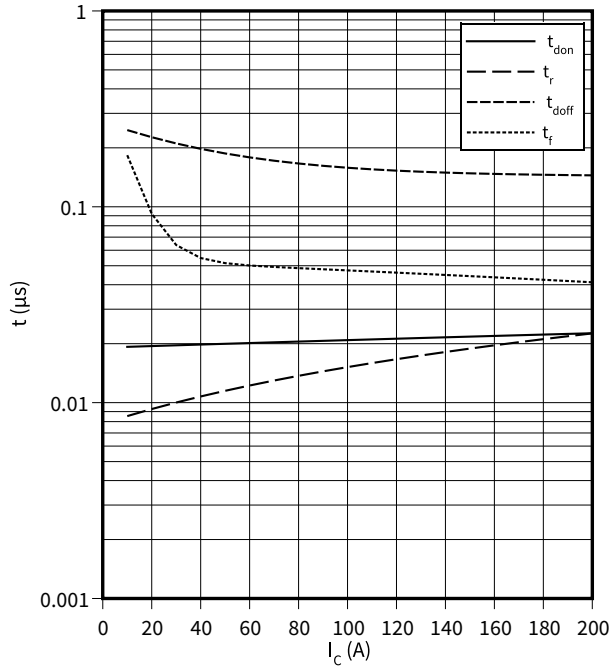
$I_C = 100\ A$, $V_{CE} = 300\ V$, $V_{GE} = \pm 15\ V$



switching times (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$t = f(I_C)$

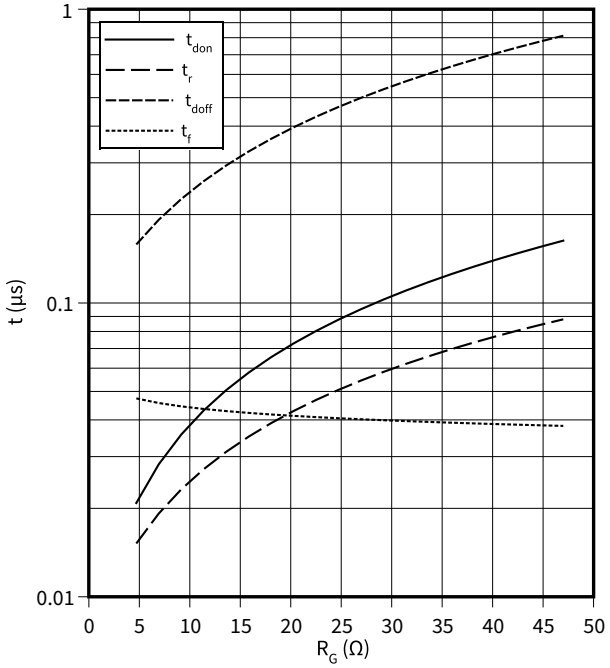
$R_{Goff} = 4.7\ \Omega$, $R_{Gon} = 4.7\ \Omega$, $V_{CE} = 300\ V$, $V_{GE} = \pm 15\ V$, $T_{vj} = 150\ °C$



switching times (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

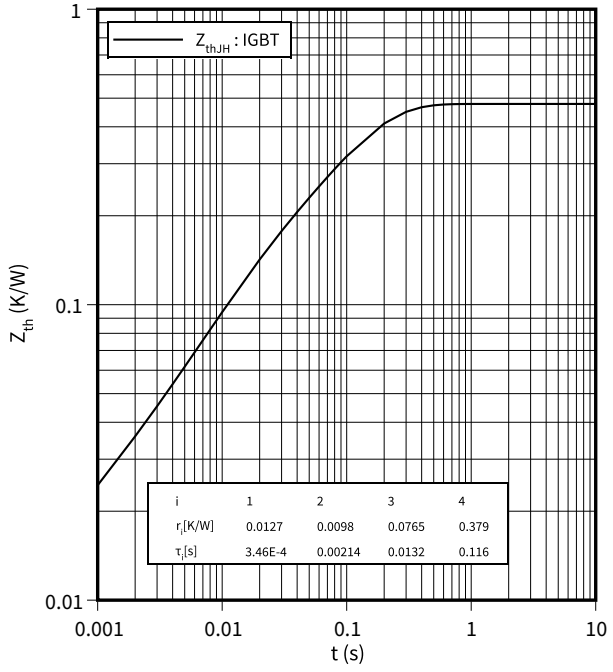
$t = f(R_G)$

$I_C = 100\ A$, $V_{CE} = 300\ V$, $V_{GE} = \pm 15\ V$, $T_{vj} = 150\ °C$



transient thermal impedance , IGBT, T1.1 / T1.2 / T4.1 / T4.2

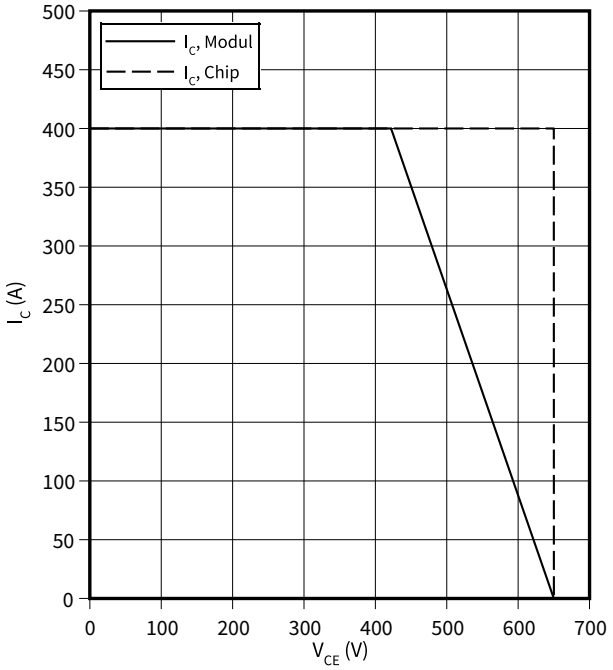
$Z_{th} = f(t)$



reverse bias safe operating area (RBSOA), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$I_C = f(V_{CE})$

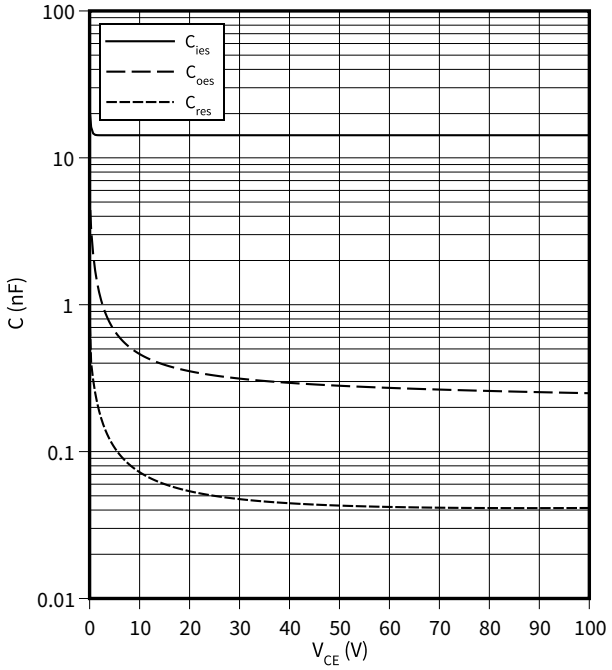
$R_{Goff} = 4.7\ \Omega$, $V_{GE} = \pm 15$ V, $T_{vj} = 150$ °C



capacity characteristic (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$C = f(V_{CE})$

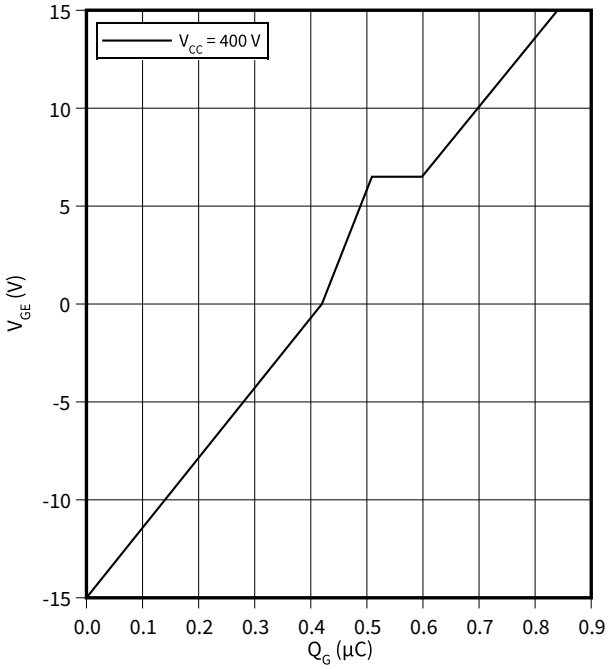
$f = 100$ kHz, $V_{GE} = 0$ V, $T_{vj} = 25$ °C



gate charge characteristic (typical), IGBT, T1.1 / T1.2 / T4.1 / T4.2

$V_{GE} = f(Q_G)$

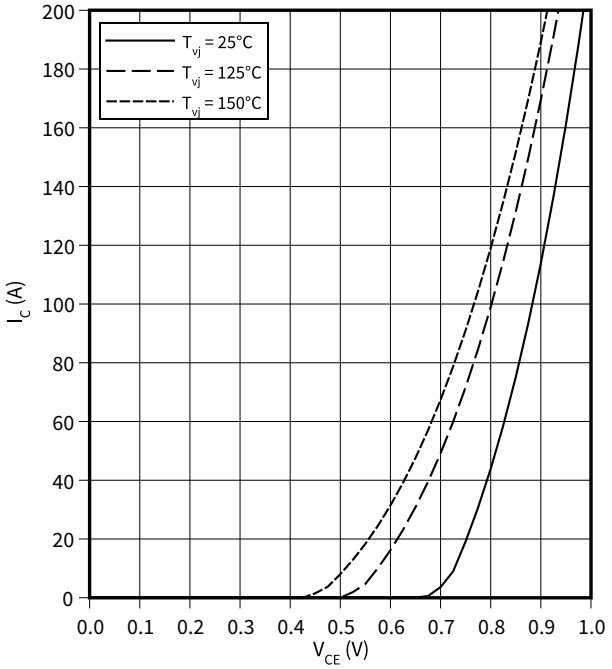
$I_C = 200$ A, $T_{vj} = 25$ °C



output characteristic (typical), IGBT, T2 / T3

$I_C = f(V_{CE})$

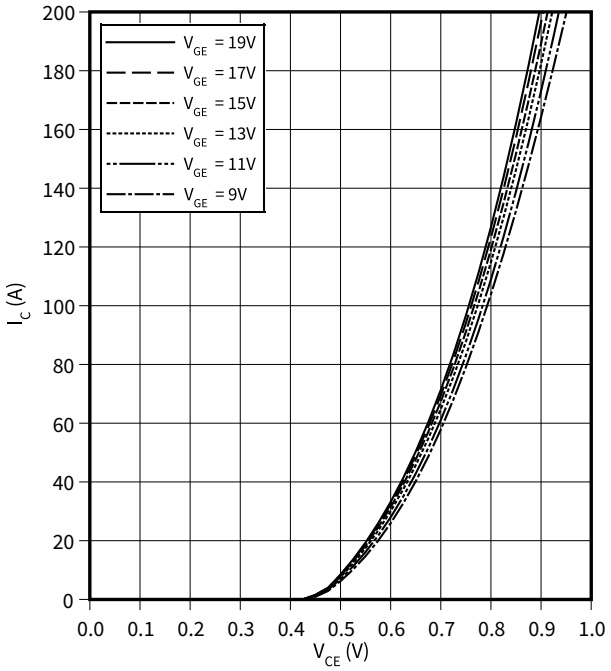
$V_{GE} = 15$ V



output characteristic (typical), IGBT, T2 / T3

$I_C = f(V_{CE})$

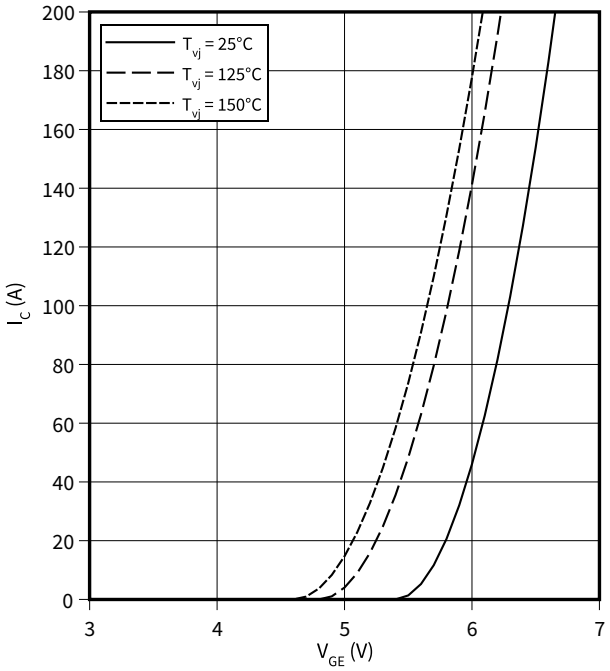
$T_{vj} = 150\ °C$



transfer characteristic (typical), IGBT, T2 / T3

$I_C = f(V_{GE})$

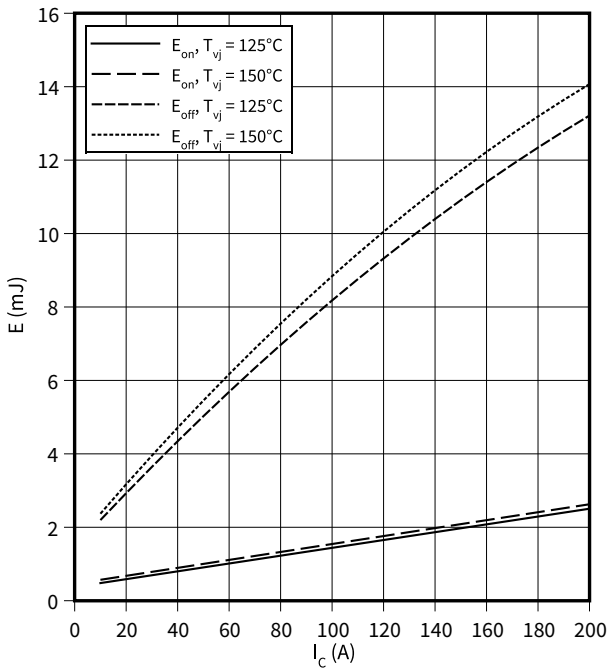
$V_{CE} = 20\ V$



switching losses (typical), IGBT, T2 / T3

$E = f(I_C)$

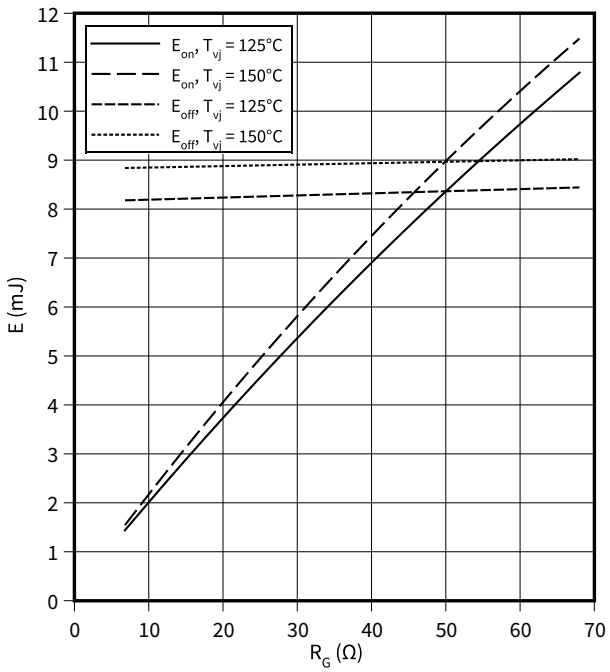
$R_{Goff} = 6.8\ \Omega$, $R_{Gon} = 6.8\ \Omega$, $V_{CE} = 300\ V$, $V_{GE} = \pm 15\ V$



switching losses (typical), IGBT, T2 / T3

$E = f(R_G)$

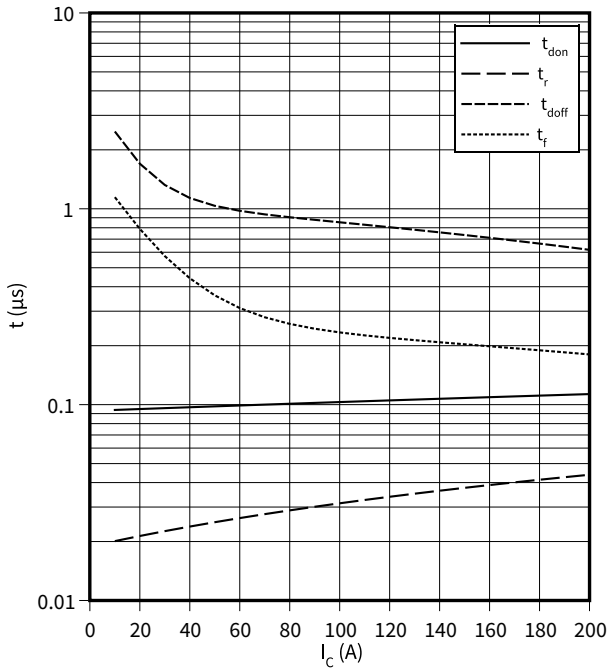
$I_C = 100\ A$, $V_{CE} = 300\ V$, $V_{GE} = \pm 15\ V$



switching times (typical), IGBT, T2 / T3

$t = f(I_C)$

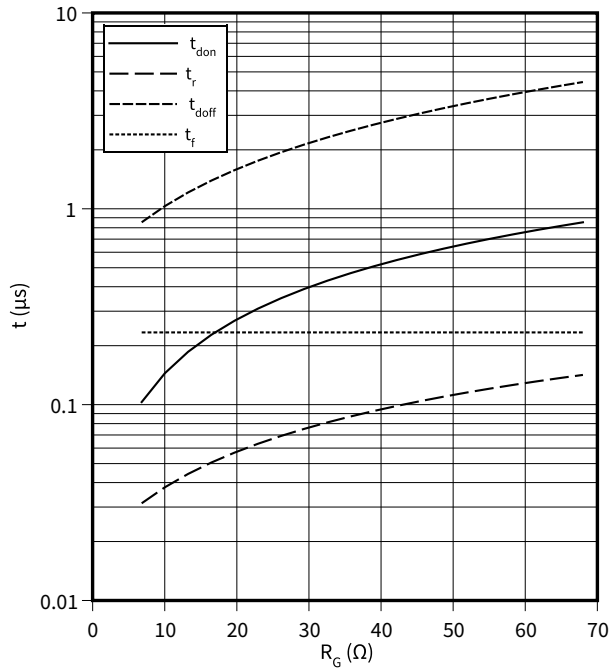
$R_{Goff} = 6.8\ \Omega$, $R_{Gon} = 6.8\ \Omega$, $V_{CE} = 300$ V, $V_{GE} = \pm 15$ V, $T_{vj} = 150$ °C



switching times (typical), IGBT, T2 / T3

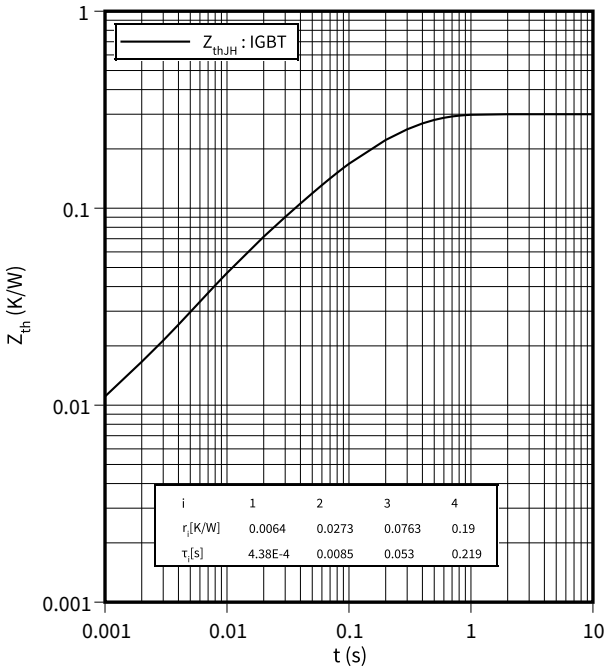
$t = f(R_G)$

$I_C = 100$ A, $V_{CE} = 300$ V, $V_{GE} = \pm 15$ V, $T_{vj} = 150$ °C



transient thermal impedance , IGBT, T2 / T3

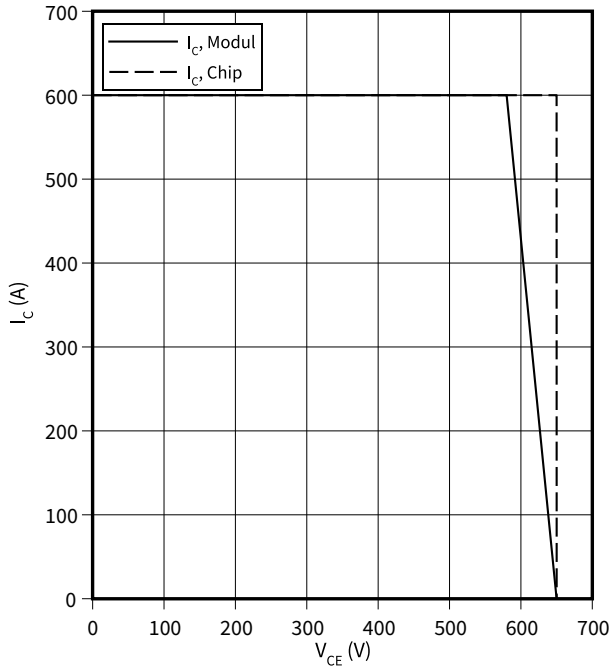
$Z_{th} = f(t)$



reverse bias safe operating area (RBSOA), IGBT, T2 / T3

$I_C = f(V_{CE})$

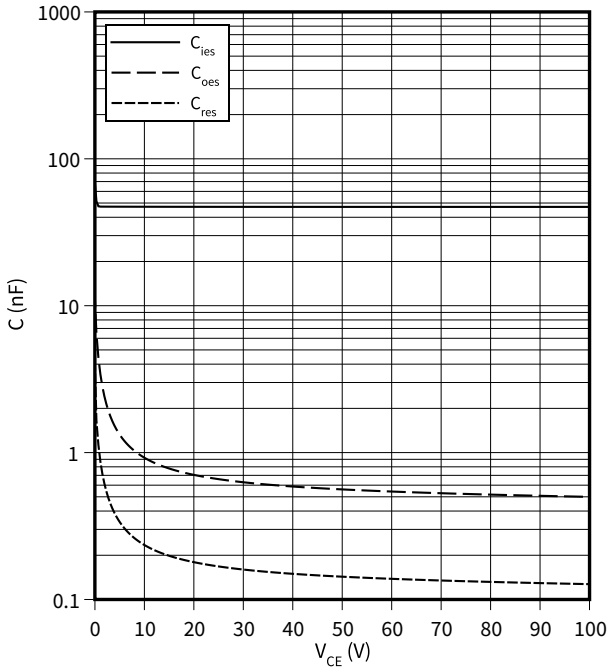
$R_{Goff} = 6.8\ \Omega$, $V_{GE} = \pm 15$ V, $T_{vj} = 150$ °C



capacity characteristic (typical), IGBT, T2 / T3

$C = f(V_{CE})$

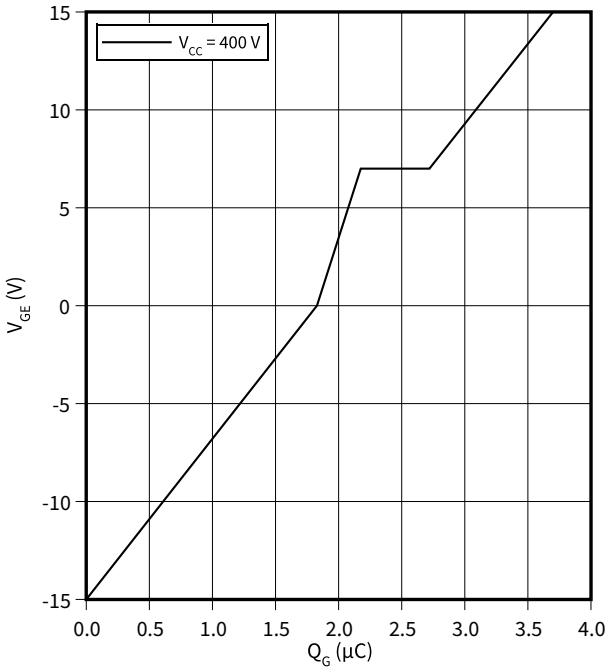
$f = 100\ kHz$, $V_{GE} = 0\ V$, $T_{vj} = 25\ °C$



gate charge characteristic (typical), IGBT, T2 / T3

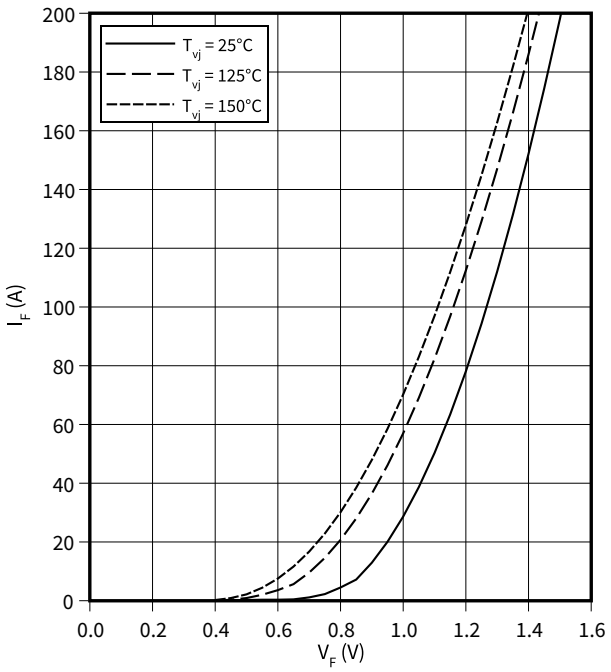
$V_{GE} = f(Q_G)$

$I_C = 200\ A$, $T_{vj} = 25\ °C$



forward characteristic (typical), Diode, D1 / D4

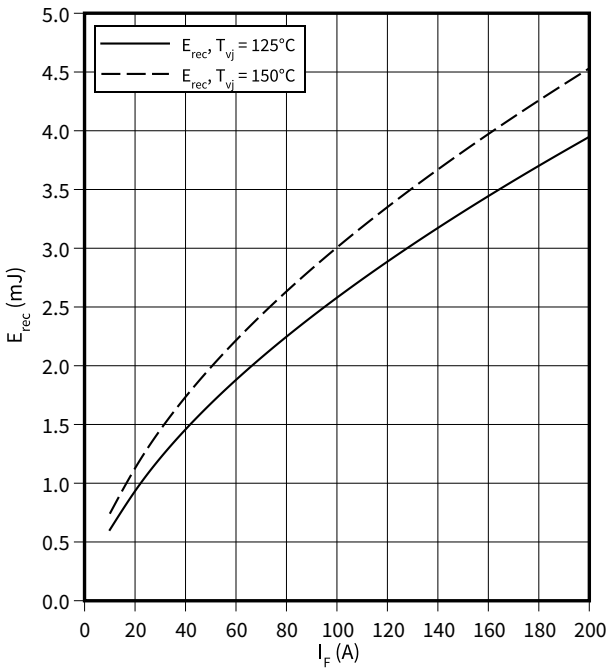
$I_F = f(V_F)$



switching losses (typical), Diode, D1 / D4

$E_{rec} = f(I_F)$

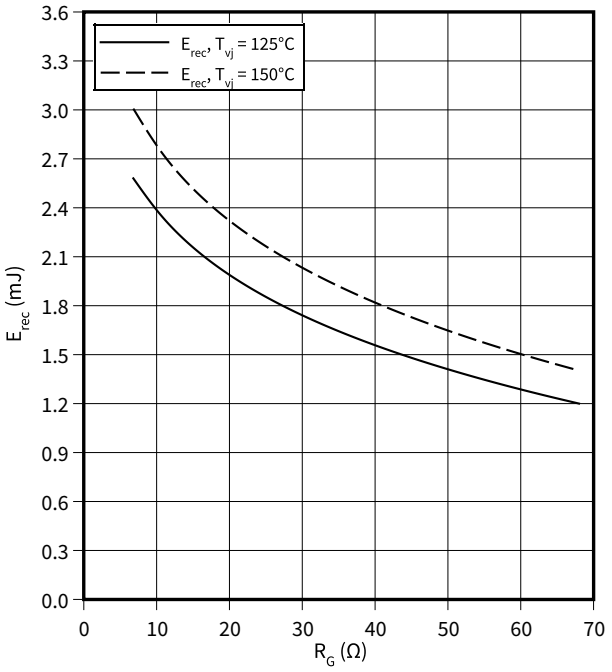
$R_{Gon} = 6.8\ \Omega$, $V_{CE} = 300\ V$



switching losses (typical), Diode, D1 / D4

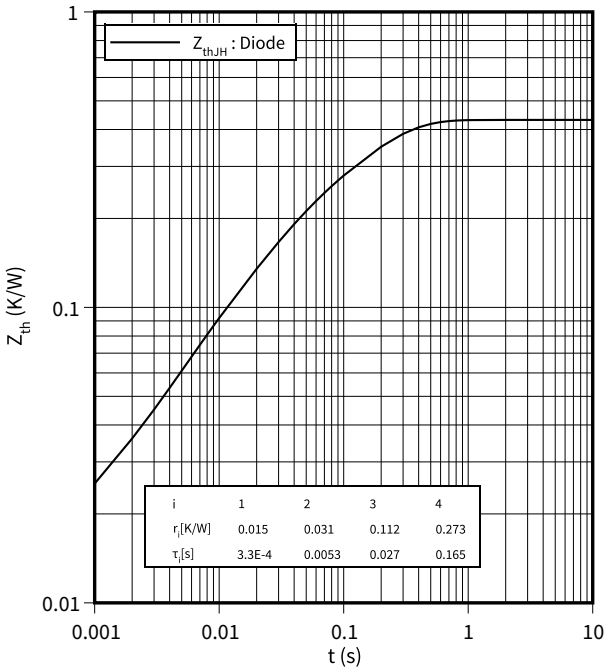
$E_{rec} = f(R_G)$

$V_{CE} = 300\ V$, $I_F = 100\ A$



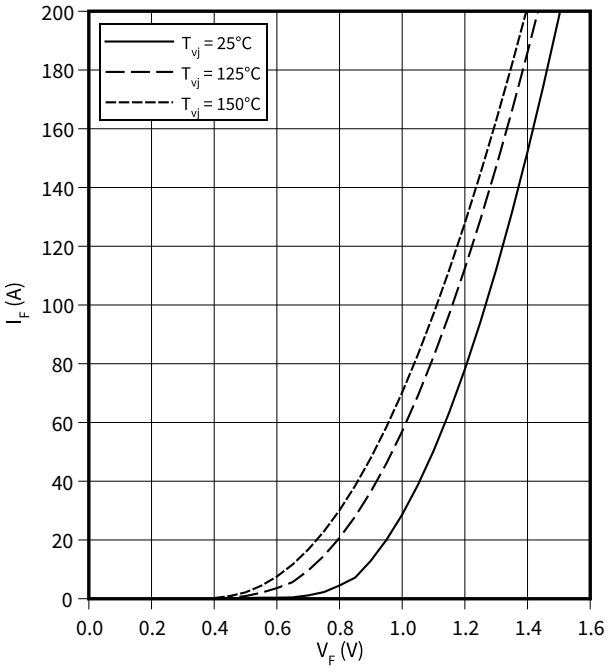
transient thermal impedance , Diode, D1 / D4

$Z_{th} = f(t)$



forward characteristic (typical), Diode, D2 / D3

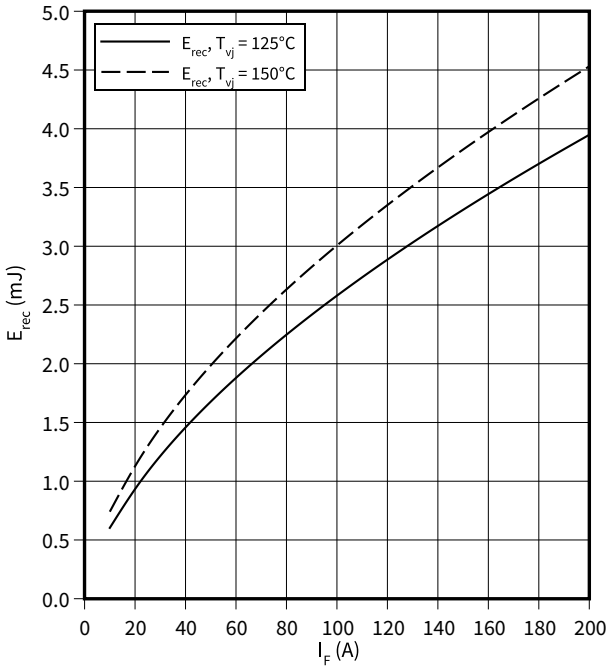
$I_F = f(V_F)$



switching losses (typical), Diode, D2 / D3

$E_{rec} = f(I_F)$

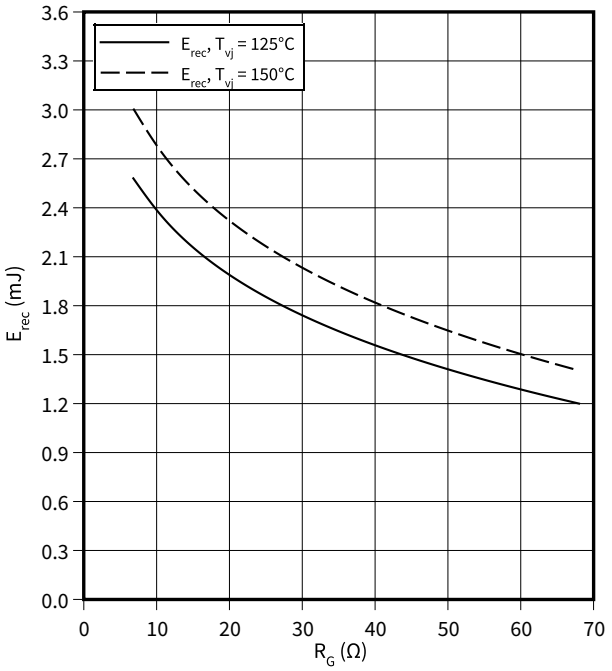
$R_{Gon} = 6.8\ \Omega$, $V_{CE} = 300\ V$



switching losses (typical), Diode, D2 / D3

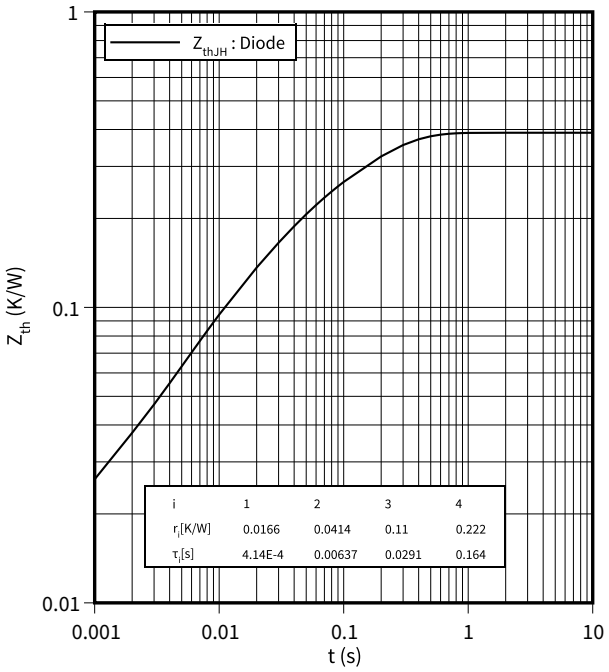
$E_{rec} = f(R_G)$

$V_{CE} = 300\ V$, $I_F = 100\ A$



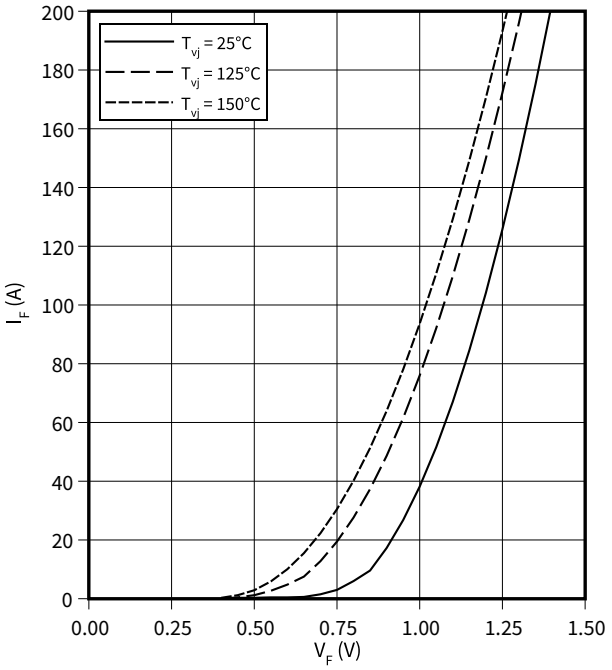
transient thermal impedance , Diode, D2 / D3

$Z_{th} = f(t)$



forward characteristic of (typical), Diode, D5 / D6

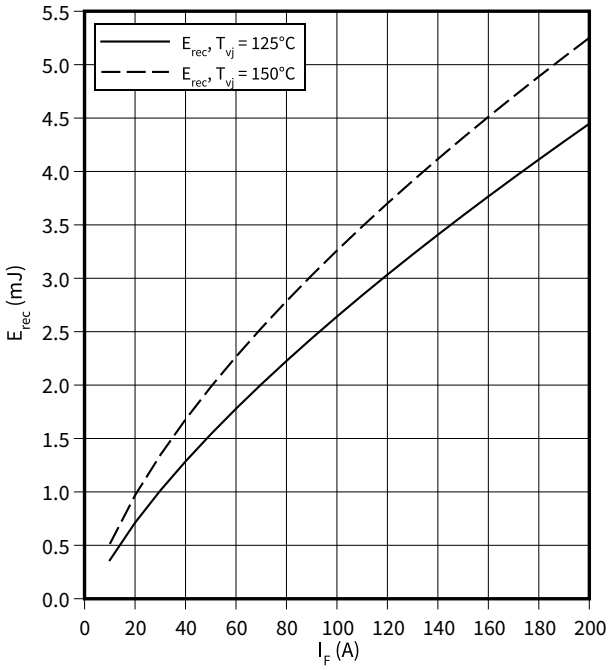
$I_F = f(V_F)$



switching losses (typical), Diode, D5 / D6

$E_{rec} = f(I_F)$

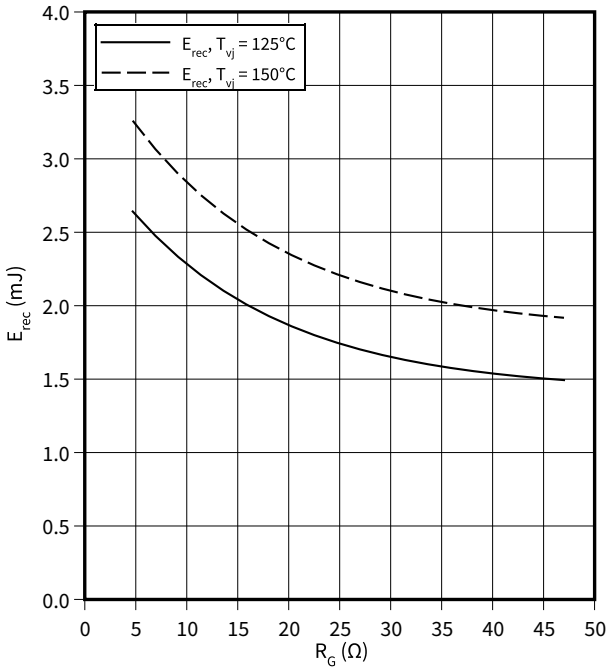
$R_{Gon} = 4.7\ \Omega$, $V_{CE} = 300\ V$



switching losses (typical), Diode, D5 / D6

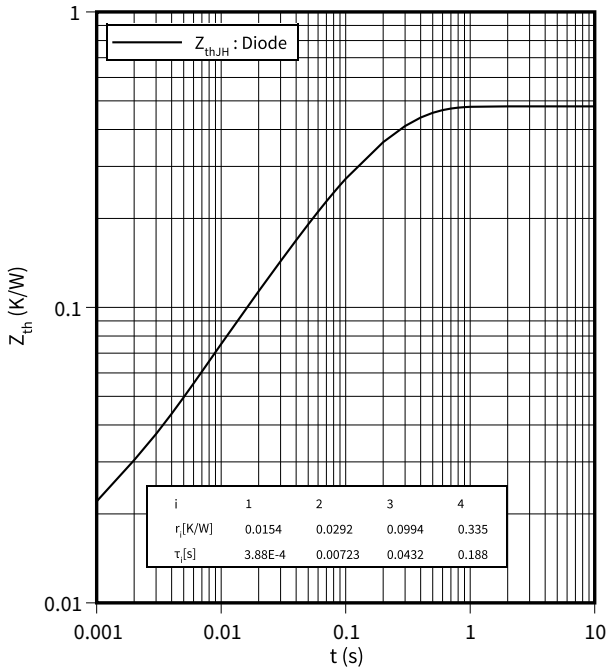
$E_{rec} = f(R_G)$

$V_{CE} = 300\ V$, $I_F = 100\ A$



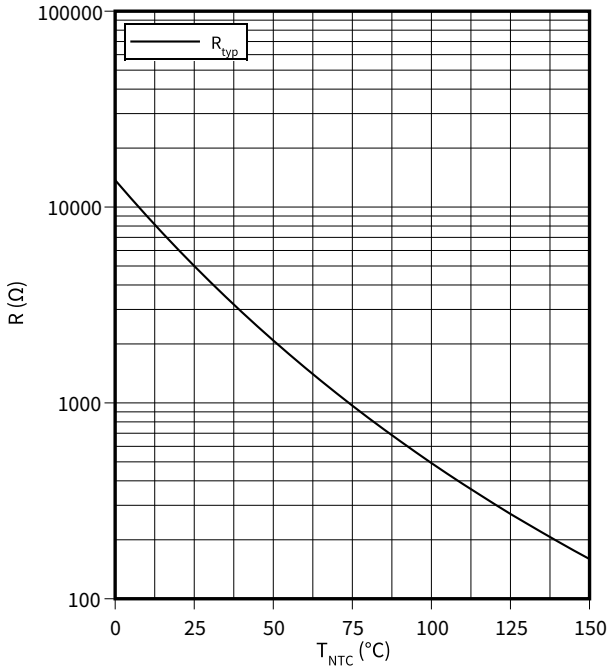
transient thermal impedance , Diode, D5 / D6

$Z_{th} = f(t)$



temperature characteristic (typical), NTC-Thermistor

$R = f(T_{NTC})$



9 Circuit diagram

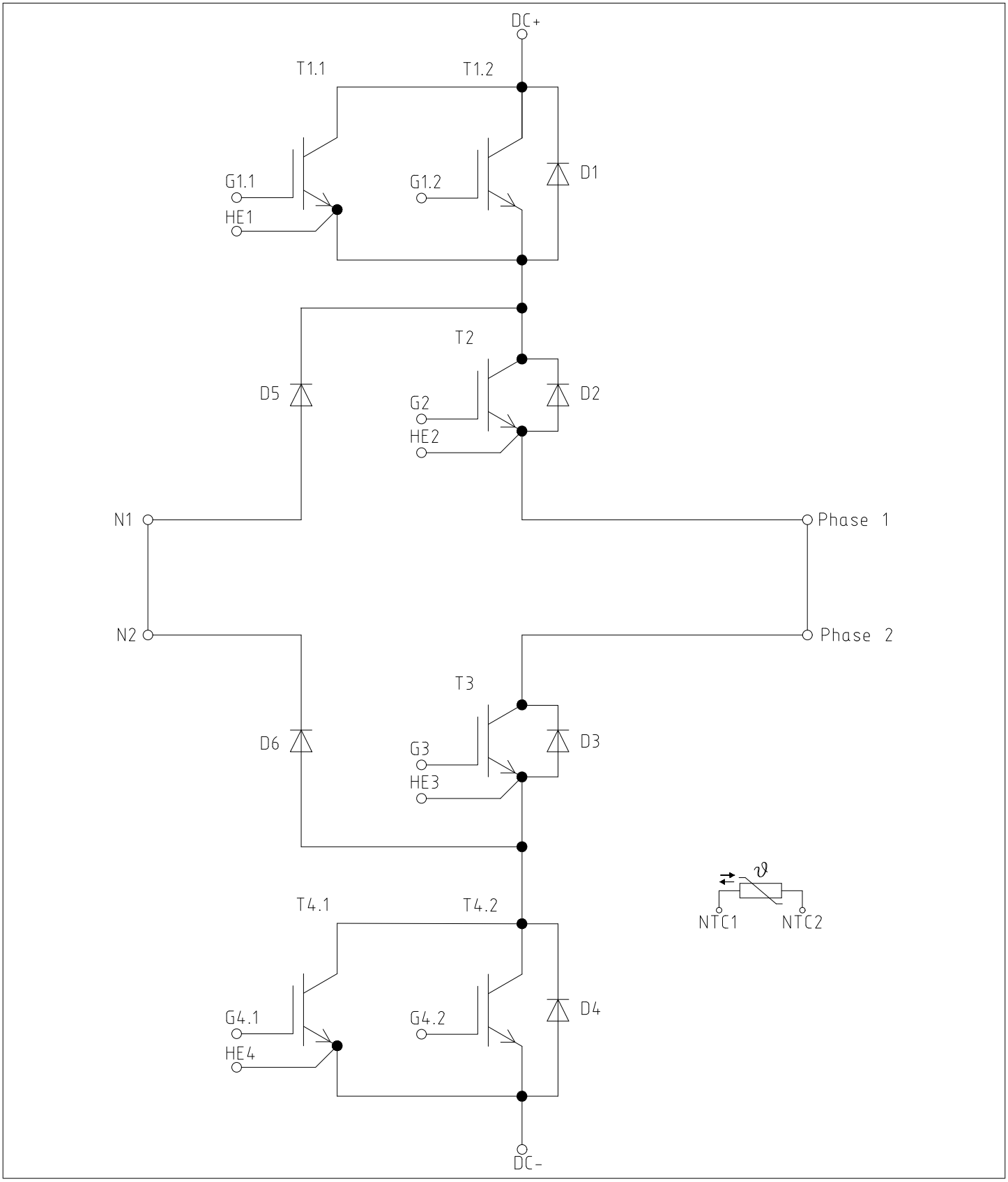


Figure 2

10 Package outlines

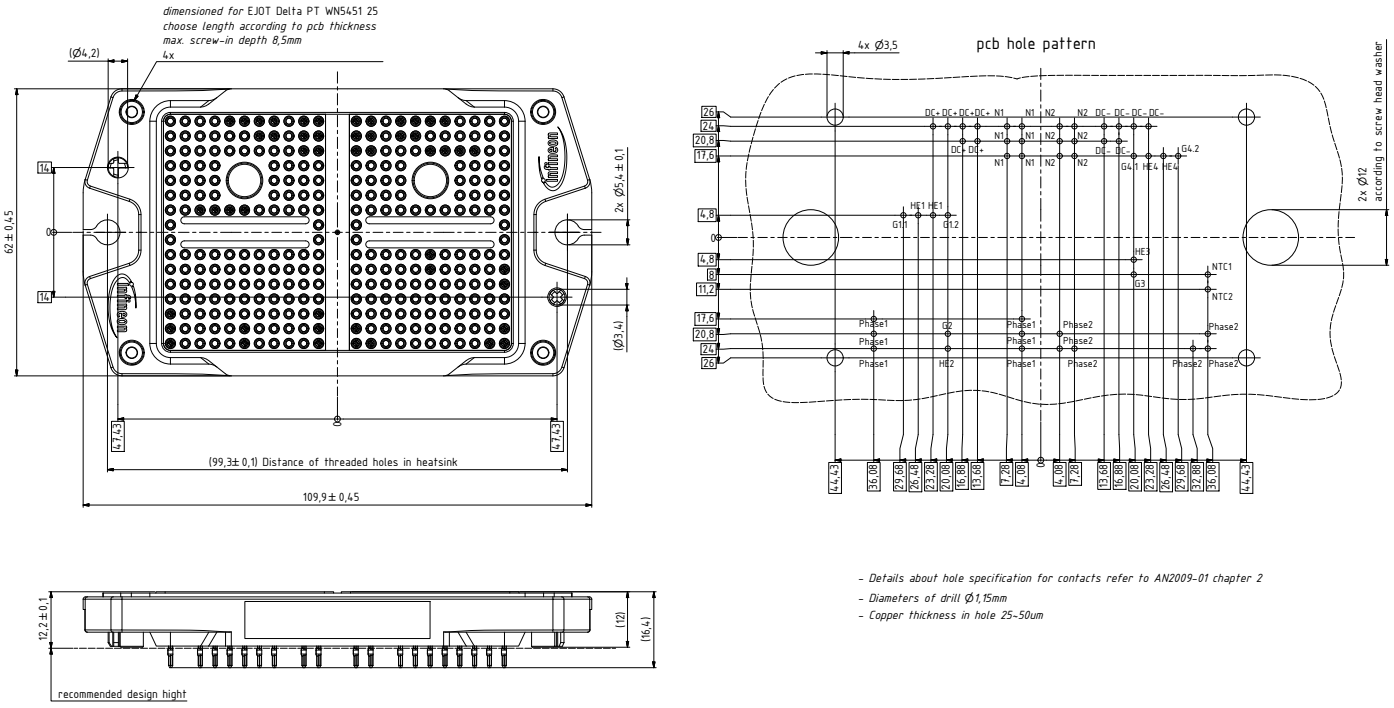


Figure 3

11 Module label code

Module label code			
Code format	Data Matrix		Barcode Code128
Encoding	ASCII text		Code Set A
Symbol size	16x16		23 digits
Standard	IEC24720 and IEC16022		IEC8859-1
Code content	*Content* Module serial number Module material number Production order number Date code (production year) Date code (production week)	*Digit* 1 – 5 6 - 11 12 - 19 20 – 21 22 – 23	*Example* 71549 142846 55054991 15 30
Example	715491428465505499115 30		715491428465505499115 30

Figure 4

Revision history

Document revision	Date of release	Description of changes
0.10	2021-04-28	Target datasheet
1.00	2021-06-25	Final datasheet

Trademarks

All referenced product or service names and trademarks are the property of their respective owners.

Edition 2021-06-25

Published by

Infineon Technologies AG

81726 Munich, Germany

Do you have a question about any aspect of this document?

Email: erratum@infineon.com

Document reference
IFX-AAS474-002

IMPORTANT NOTICE

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie").

With respect to any examples, hints or any typical values stated herein and/or any information regarding the application of the product, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

In addition, any information given in this document is subject to customer's compliance with its obligations stated in this document and any applicable legal requirements, norms and standards concerning customer's products and any use of the product of Infineon Technologies in customer's applications.

The data contained in this document is exclusively intended for technically trained staff. It is the responsibility of customer's technical departments to evaluate the suitability of the product for the intended application and the completeness of the product information given in this document with respect to such application.

Please note that this product is not qualified according to the AEC Q100 or AEC Q101 documents of the Automotive Electronics Council.

WARNINGS

Due to technical requirements products may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by Infineon Technologies in a written document signed by authorized representatives of Infineon Technologies, Infineon Technologies' products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury.