Final datasheet

EconoPACK™3 module with TRENCHSTOP™IGBT7 and emitter controlled 7 diode and NTC

Features


Typical appearance

- Electrical features
  - V_{CES} = 950 V
  - $I_{C\ nom}$ = 600 A / I_{CRM} = 600 A
  - Low switching losses
  - TRENCHSTOP™ IGBT7
  - Suitable Infineon gate drivers can be found under https://www.infineon.com/gdfinder
- Mechanical features
  - Compact design
  - Copper base plate
  - Integrated NTC temperature sensor
  - High power density

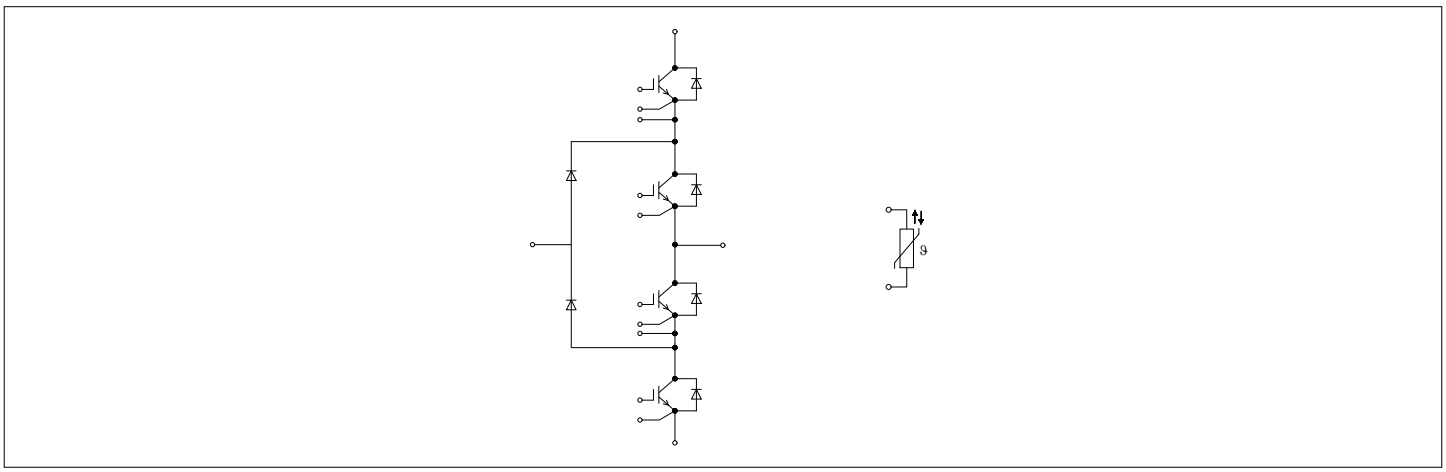
Potential applications

- Solar applications
- Three-level applications

Product validation

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

Description



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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
Isolation test voltage NTC	$V_{ISOL(NTC)}$	RMS, f = 50 Hz, *t* = 1 min	3.2	kV
Material of module baseplate			Cu	
Internal isolation		basic insulation (class 1, IEC 61140)	Al_2O_3	
Creepage distance	$d_{Creep\ nom}$	terminal to baseplate, nom.	10.0	mm
Creepage distance	$d_{Creep\ min}$	terminal to baseplate, min.	7.5	mm
Comparative tracking index	*CTI*		> 200	
Relative thermal index (electrical)	*RTI*	housing	140	°C

Table 2 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Stray inductance module	L_{sCE}				20		nH
Module lead resistance, terminals - chip	$R_{AA'+CC'}$	T_C = 25 °C, per switch			2		mΩ
Module lead resistance, terminals - chip	$R_{CC'+EE'}$	T_C = 25 °C, per switch			1.5		mΩ
Storage temperature	T_{stg}			-40		125	°C
Mounting torque for module mounting	*M*	- Mounting according to valid application note	M5, Screw	3		6	Nm
Weight	*G*				300		g

***Note**: The current under continuous operation is limited to 50A rms per connector pin*

2 IGBT, T1 / T4

Table 3 Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
Collector-emitter voltage	V_{CES}		T_{vj} = 25 °C	950	V
Implemented collector current	I_{CN}			600	A
Continuous DC collector current	I_{CDC}	$T_{vj\ max}$ = 175 °C	T_C = 115 °C	290	A

(table continues...)

Table 3 (continued) Maximum rated values

Parameter	Symbol	Note or test condition	Values	Unit
Repetitive peak collector current	I_{CRM}	t_p limited by $T_{vj\,op}$	600	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 = 250 A, V_{GE} = 15 V	T_{vj} = 25 °C		1.43	1.64	V
			T_{vj} = 125 °C		1.53		
			T_{vj} = 150 °C		1.55		
Gate threshold voltage	V_{GEth}	I_C = 9.75 mA, V_{CE} = V_{GE}, T_{vj} = 25 °C		4.35	5.1	5.85	V
Gate charge	Q_G	V_{GE} = ±15 V, V_{CC} = 600 V, T_{vj} = 25 °C			1.35		µC
Internal gate resistor	R_{Gint}	T_{vj} = 25 °C			0.5		Ω
Input capacitance	C_{ies}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			37.9		nF
Reverse transfer capacitance	C_{res}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			0.117		nF
Collector-emitter cut-off current	I_{CES}	V_{CE} = 950 V, V_{GE} = 0 V	T_{vj} = 25 °C			0.11	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 = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Gon} = 1.8 Ω	T_{vj} = 25 °C		0.059		µs
			T_{vj} = 125 °C		0.070		
			T_{vj} = 150 °C		0.070		
Rise time (inductive load)	t_r	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Gon} = 1.8 Ω	T_{vj} = 25 °C		0.020		µs
			T_{vj} = 125 °C		0.022		
			T_{vj} = 150 °C		0.023		
Turn-off delay time (inductive load)	t_{doff}	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Goff} = 0.75 Ω	T_{vj} = 25 °C		0.190		µs
			T_{vj} = 125 °C		0.240		
			T_{vj} = 150 °C		0.250		
Fall time (inductive load)	t_f	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Goff} = 0.75 Ω	T_{vj} = 25 °C		0.040		µs
			T_{vj} = 125 °C		0.080		
			T_{vj} = 150 °C		0.090		
Turn-on energy loss per pulse	E_{on}	I_C = 250 A, V_{CC} = 500 V, L_σ = 15 nH, V_{GE} = ±15 V, R_{Gon} = 1.8 Ω, di/dt = 8.8 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		3.1		mJ
			T_{vj} = 125 °C		3.88		
			T_{vj} = 150 °C		3.88		

(table continues...)

Table 4 (continued) Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Turn-off energy loss per pulse	E_{off}	I_C = 250 A, V_{CC} = 500 V, L_σ = 15 nH, V_{GE} = ±15 V, R_{Goff} = 0.75 Ω, dv/dt = 4910 V/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		6.1		mJ
			T_{vj} = 125 °C		10.2		
			T_{vj} = 150 °C		11.5		
Thermal resistance, junction to case	R_{thJC}	per IGBT				0.108	K/W
Thermal resistance, case to heat sink	R_{thCH}	per IGBT, λ_{grease} = 5 W/(m·K)			0.0240		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	1200	V
Implemented collector current	I_{CN}			450	A
Continuous DC collector current	I_{CDC}	$T_{vj\,max}$ = 175 °C	T_C = 115 °C	335	A
Repetitive peak collector current	I_{CRM}	t_p limited by $T_{vj\,op}$		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 = 250 A, V_{GE} = 15 V	T_{vj} = 25 °C		1.33	1.50	V
			T_{vj} = 125 °C		1.34		
			T_{vj} = 175 °C		1.35		
Gate threshold voltage	V_{GEth}	I_C = 10.5 mA, V_{CE} = V_{GE}, T_{vj} = 25 °C		5.15	5.8	6.45	V
Gate charge	Q_G	V_{GE} = ±15 V, V_{CC} = 600 V, T_{vj} = 25 °C			7.5		µC
Internal gate resistor	R_{Gint}	T_{vj} = 25 °C			0.33		Ω
Input capacitance	C_{ies}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			90.4		nF
Reverse transfer capacitance	C_{res}	f = 100 kHz, T_{vj} = 25 °C, V_{CE} = 25 V, V_{GE} = 0 V			0.315		nF

(table continues...)

Table 6 (continued) Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Collector-emitter cut-off current	I_{CES}	V_{CE} = 1200 V, V_{GE} = 0 V	T_{vj} = 25 °C			0.024	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 = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Gon} = 0.47 Ω	T_{vj} = 25 °C		0.120		µs
			T_{vj} = 125 °C		0.130		
			T_{vj} = 175 °C		0.138		
Rise time (inductive load)	t_r	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Gon} = 0.47 Ω	T_{vj} = 25 °C		0.030		µs
			T_{vj} = 125 °C		0.034		
			T_{vj} = 175 °C		0.035		
Turn-off delay time (inductive load)	t_{doff}	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Goff} = 0.47 Ω	T_{vj} = 25 °C		0.360		µs
			T_{vj} = 125 °C		0.490		
			T_{vj} = 175 °C		0.560		
Fall time (inductive load)	t_f	I_C = 250 A, V_{CC} = 500 V, V_{GE} = ±15 V, R_{Goff} = 0.47 Ω	T_{vj} = 25 °C		0.065		µs
			T_{vj} = 125 °C		0.150		
			T_{vj} = 175 °C		0.210		
Turn-on energy loss per pulse	E_{on}	I_C = 250 A, V_{CC} = 500 V, L_σ = 15 nH, V_{GE} = ±15 V, R_{Gon} = 0.47 Ω, di/dt = 7.68 kA/µs (T_{vj} = 175 °C)	T_{vj} = 25 °C		4.45		mJ
			T_{vj} = 125 °C		6.96		
			T_{vj} = 150 °C		8.6		
Turn-off energy loss per pulse	E_{off}	I_C = 250 A, V_{CC} = 500 V, L_σ = 15 nH, V_{GE} = ±15 V, R_{Goff} = 0.47 Ω, dv/dt = 2200 V/µs (T_{vj} = 175 °C)	T_{vj} = 25 °C		16.5		mJ
			T_{vj} = 125 °C		28		
			T_{vj} = 150 °C		35.7		
Thermal resistance, junction to case	R_{thJC}	per IGBT				0.0930	K/W
Thermal resistance, case to heat sink	R_{thCH}	per IGBT, λ_{grease} = 5 W/(m·K)			0.0220		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		175	°C

***Note**: $T_{vj\,op}$ > 150°C is allowed for operation at overload conditions. For detailed specifications, please refer to AN 2018-14.*

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	950	V
Implemented forward current	I_{FN}			300	A
Continuous DC forward current	I_F			250	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		600	A
I^2t - value	I^2t	t_P = 10 ms, V_R = 0 V	T_{vj} = 125 °C	3100	A^2s
			T_{vj} = 150 °C	2900	

Table 8 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 250 A, V_{GE} = 0 V	T_{vj} = 25 °C		2.42	2.67	V
			T_{vj} = 125 °C		2.22		
			T_{vj} = 150 °C		2.16		
Peak reverse recovery current	I_{RM}	V_{CC} = 500 V, I_F = 250 A, V_{GE} = -15 V, -di$_F$/dt = 7.8 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		208		A
			T_{vj} = 125 °C		290		
			T_{vj} = 150 °C		312		
Recovered charge	Q_r	V_{CC} = 500 V, I_F = 250 A, V_{GE} = -15 V, -di$_F$/dt = 7.8 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		8.6		µC
			T_{vj} = 125 °C		18		
			T_{vj} = 150 °C		22		
Reverse recovery energy	E_{rec}	V_{CC} = 500 V, I_F = 250 A, V_{GE} = -15 V, -di$_F$/dt = 7.8 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		3		mJ
			T_{vj} = 125 °C		6.6		
			T_{vj} = 150 °C		8		
Thermal resistance, junction to case	R_{thJC}	per diode				0.257	K/W
Thermal resistance, case to heat sink	R_{thCH}	per diode, λ_{grease} = 5 W/(m·K)			0.0300		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	1200	V
Implemented forward current	I_{FN}			300	A
Continuous DC forward current	I_F			250	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		600	A
I^2t - value	I^2t	t_P = 10 ms, V_R = 0 V	T_{vj} = 125 °C	4150	A^2s
			T_{vj} = 175 °C	3600	

Table 10 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 250 A, V_{GE} = 0 V	T_{vj} = 25 °C		1.62	1.93	V
			T_{vj} = 125 °C		1.49		
			T_{vj} = 175 °C		1.42		
Thermal resistance, junction to case	R_{thJC}	per diode				0.204	K/W
Thermal resistance, case to heat sink	R_{thCH}	per diode, λ_{grease} = 5 W/(m·K)			0.0290		K/W
Temperature under switching conditions	$T_{vj\,op}$			-40		175	°C

***Note**: $T_{vj\,op}$ > 150°C is allowed for operation at overload conditions. For detailed specifications, please refer to AN 2018-14.*

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	1200	V
Continuous DC forward current	I_F			200	A
Repetitive peak forward current	I_{FRM}	t_P = 1 ms		400	A

(table continues...)

Table 11 (continued) Maximum rated values

Parameter	Symbol	Note or test condition		Values	Unit
I^2t - value	I^2t	t_P = 10 ms, V_R = 0 V	T_{vj} = 125 °C	1800	A^2s
			T_{vj} = 150 °C	1460	

Table 12 Characteristic values

Parameter	Symbol	Note or test condition		Values			Unit
				Min.	Typ.	Max.	
Forward voltage	V_F	I_F = 200 A, V_{GE} = 0 V	T_{vj} = 25 °C		1.45	1.75	V
			T_{vj} = 125 °C		1.75		
			T_{vj} = 150 °C		1.85		
Peak reverse recovery current	I_{RM}	V_{CC} = 500 V, I_F = 200 A, V_{GE} = -15 V, -di$_F$/dt = 9.2 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		76		A
			T_{vj} = 125 °C		76		
			T_{vj} = 150 °C		76		
Recovered charge	Q_r	V_{CC} = 500 V, I_F = 200 A, V_{GE} = -15 V, -di$_F$/dt = 9.2 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		1.28		µC
			T_{vj} = 125 °C		1.28		
			T_{vj} = 150 °C		1.28		
Reverse recovery energy	E_{rec}	V_{CC} = 500 V, I_F = 200 A, V_{GE} = -15 V, -di$_F$/dt = 9.2 kA/µs (T_{vj} = 150 °C)	T_{vj} = 25 °C		0.32		mJ
			T_{vj} = 125 °C		0.32		
			T_{vj} = 150 °C		0.32		
Thermal resistance, junction to case	R_{thJC}	per diode				0.231	K/W
Thermal resistance, case to heat sink	R_{thCH}	per diode, λ_{grease} = 5 W/(m·K)			0.0290		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

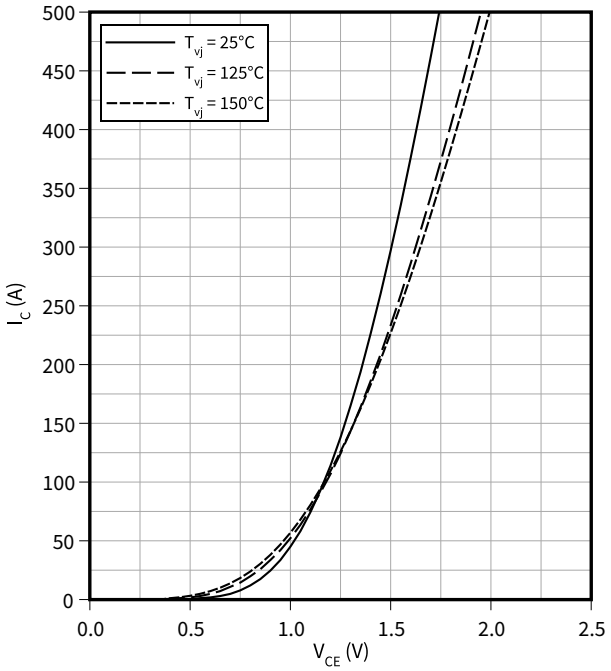
***Note**: For an analytical description of the NTC characteristics please refer to AN2009-10, chapter 4.*

8 Characteristics diagrams

Output characteristic (typical), IGBT, T1 / T4

$I_C = f(V_{CE})$

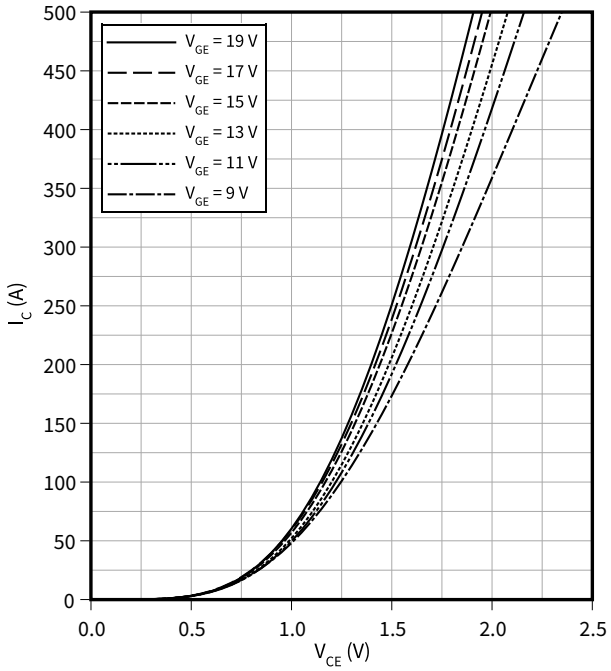
V_{GE} = 15 V



Output characteristic field (typical), IGBT, T1 / T4

$I_C = f(V_{CE})$

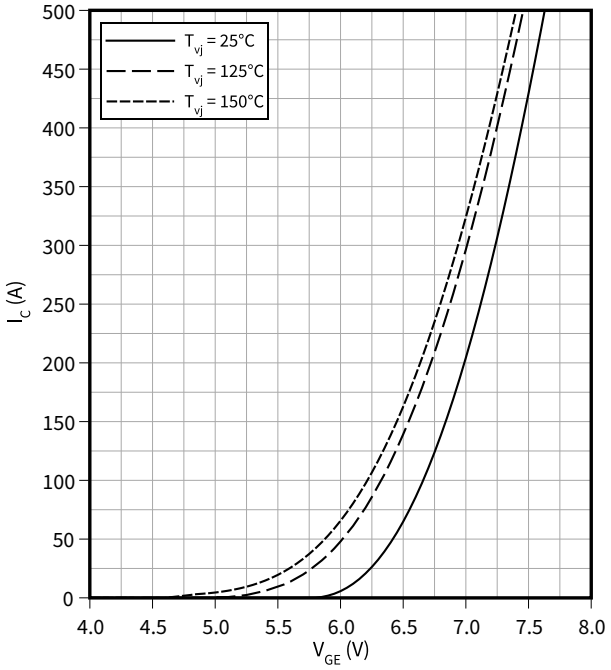
T_{vj} = 150 °C



Transfer characteristic (typical), IGBT, T1 / T4

$I_C = f(V_{GE})$

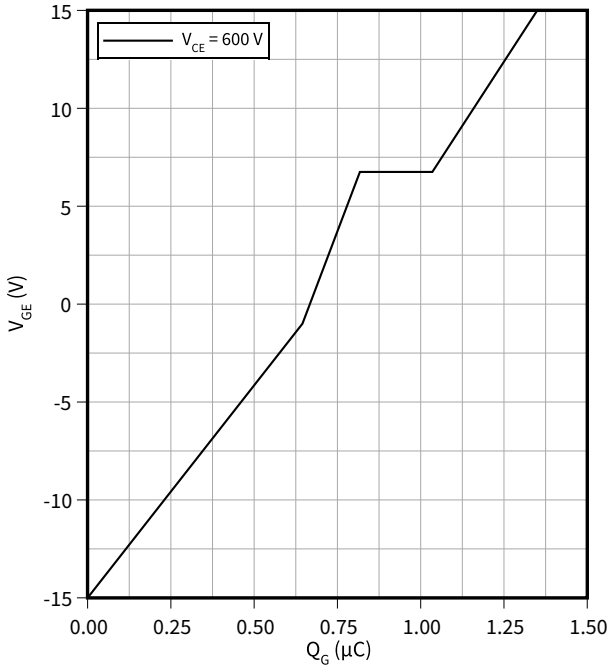
V_{CE} = 20 V



Gate charge characteristic (typical), IGBT, T1 / T4

$V_{GE} = f(Q_G)$

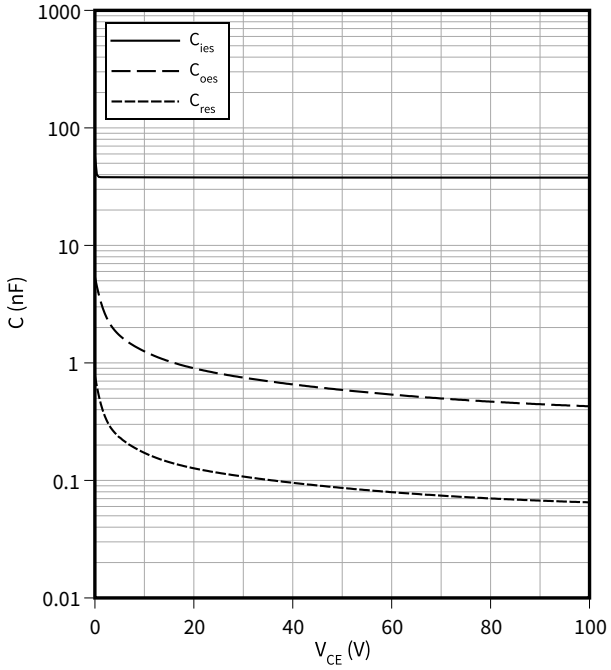
I_C = 600 A, T_{vj} = 25 °C



Capacity characteristic (typical), IGBT, T1 / T4

$C = f(V_{CE})$

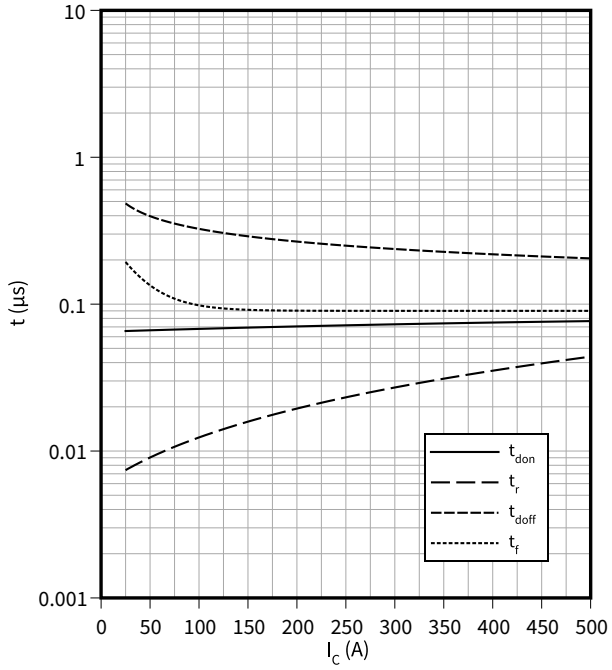
$f = 100\ kHz$, $V_{GE} = 0\ V$, $T_{vj} = 25\ °C$



Switching times (typical), IGBT, T1 / T4

$t = f(I_C)$

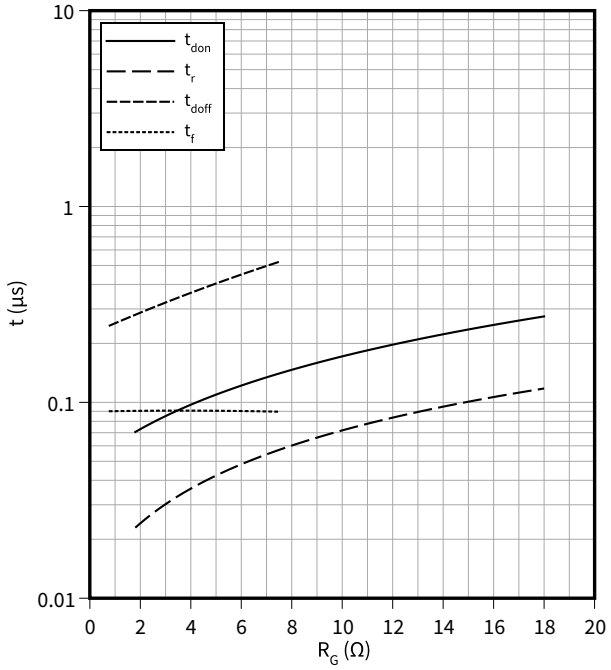
$V_{CC} = 500\ V$, $T_{vj} = 150\ °C$, $R_{Goff} = 0.75\ \Omega$, $R_{Gon} = 1.8\ \Omega$, $V_{GE} = \pm 15\ V$



Switching times (typical), IGBT, T1 / T4

$t = f(R_G)$

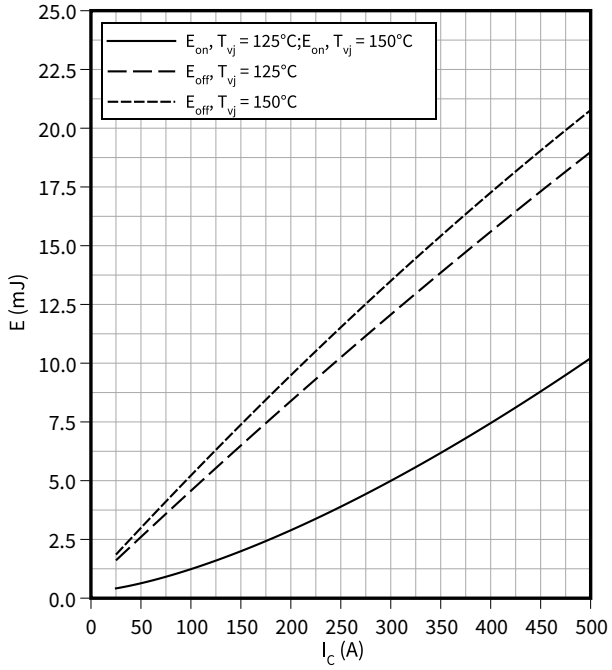
$I_C = 250\ A$, $V_{CC} = 500\ V$, $-15\ /\ 15\ V$, $T_{vj} = 150\ °C$



Switching losses (typical), IGBT, T1 / T4

$E = f(I_C)$

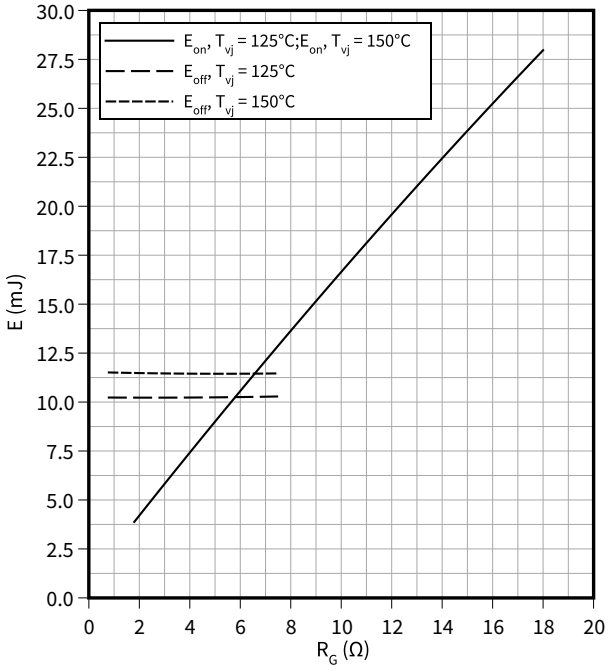
$R_{Goff} = 0.75\ \Omega$, $R_{Gon} = 1.8\ \Omega$, $V_{CC} = 500\ V$, $-15\ /\ 15\ V$



Switching losses (typical), IGBT, T1 / T4

$E = f(R_G)$

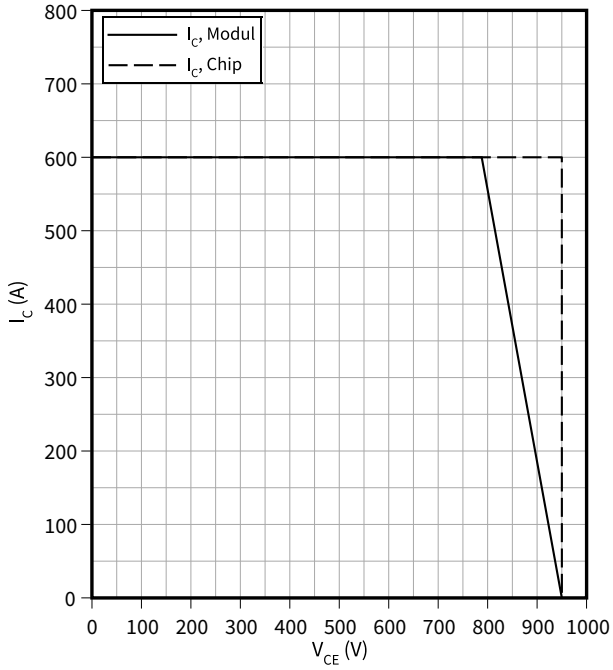
$I_C = 250$ A, $V_{CC} = 500$ V, -15 / 15 V



Reverse bias safe operating area (RBSOA), IGBT, T1 / T4

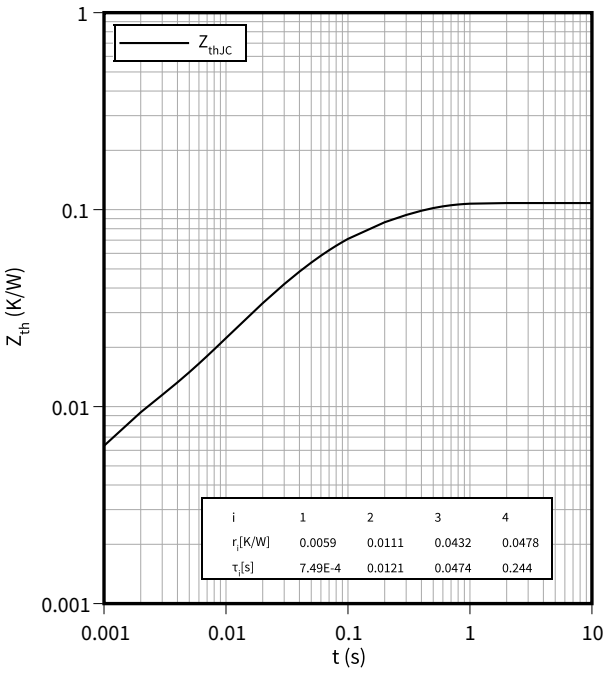
$I_C = f(V_{CE})$

$R_{Goff} = 0.75\ \Omega$, $V_{GE} = \pm 15$ V, $T_{vj} = 150$ °C



Transient thermal impedance, IGBT, T1 / T4

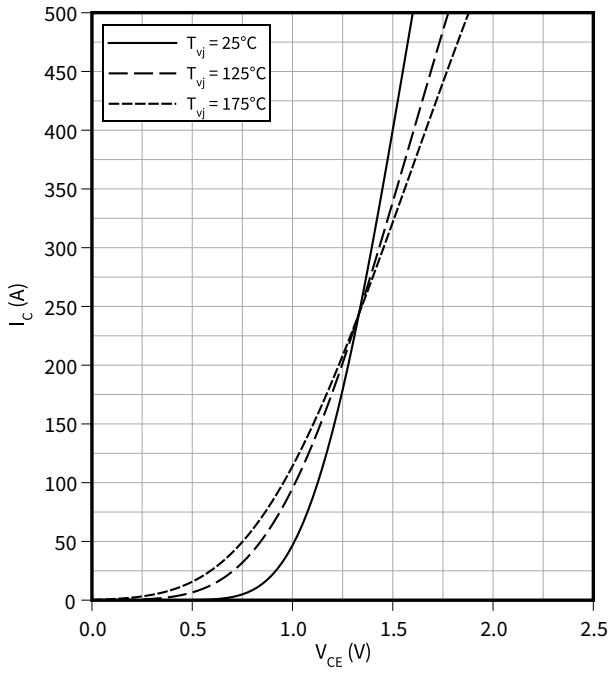
$Z_{th} = f(t)$



Output characteristic (typical), IGBT, T2 / T3

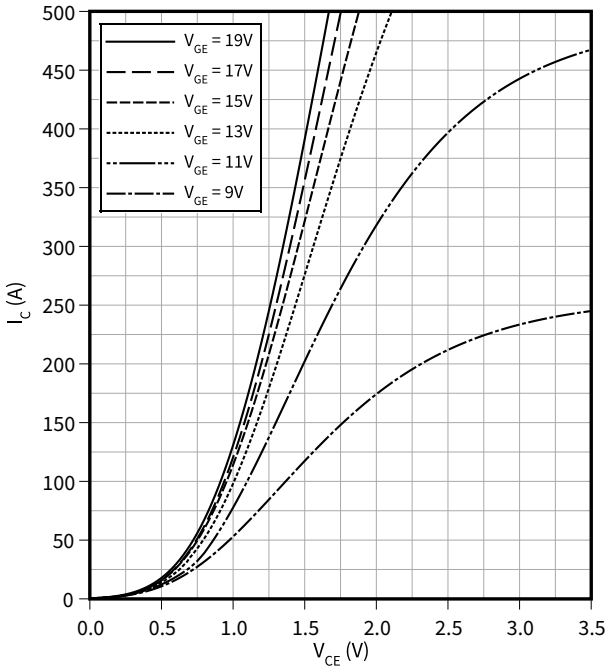
$I_C = f(V_{CE})$

$V_{GE} = 15$ V



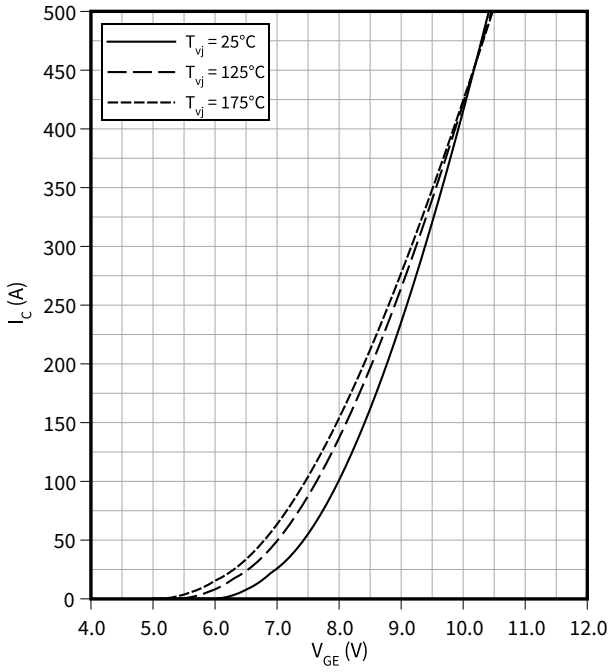
Output characteristic field (typical), IGBT, T2 / T3

$I_C = f(V_{CE})$
$T_{vj} = 175\ °C$



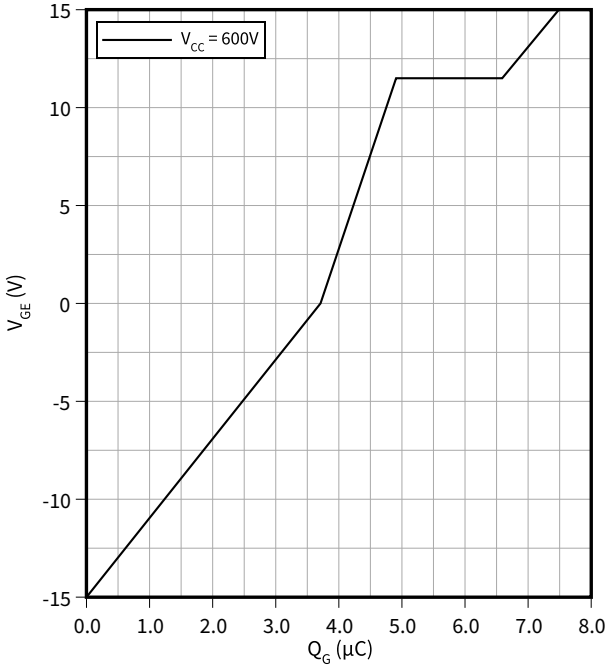
Transfer characteristic (typical), IGBT, T2 / T3

$I_C = f(V_{GE})$
$V_{CE} = 20\ V$



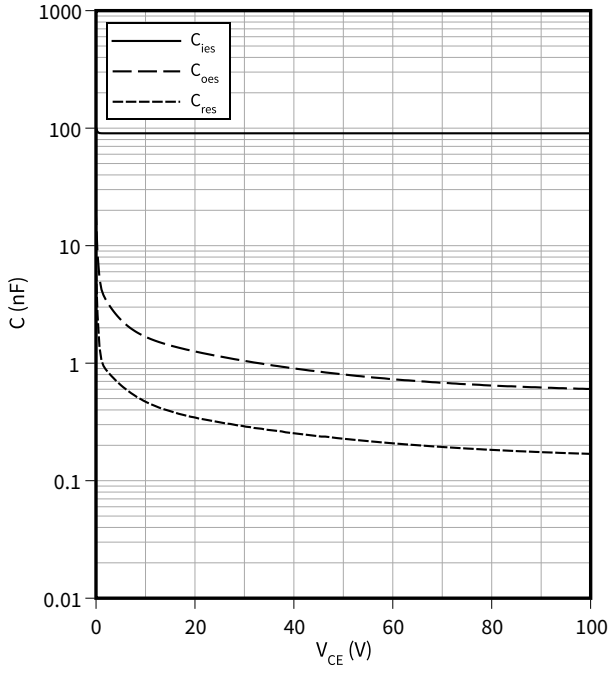
Gate charge characteristic (typical), IGBT, T2 / T3

$V_{GE} = f(Q_G)$
$I_C = 450\ A,\ T_{vj} = 25\ °C$



Capacity characteristic (typical), IGBT, T2 / T3

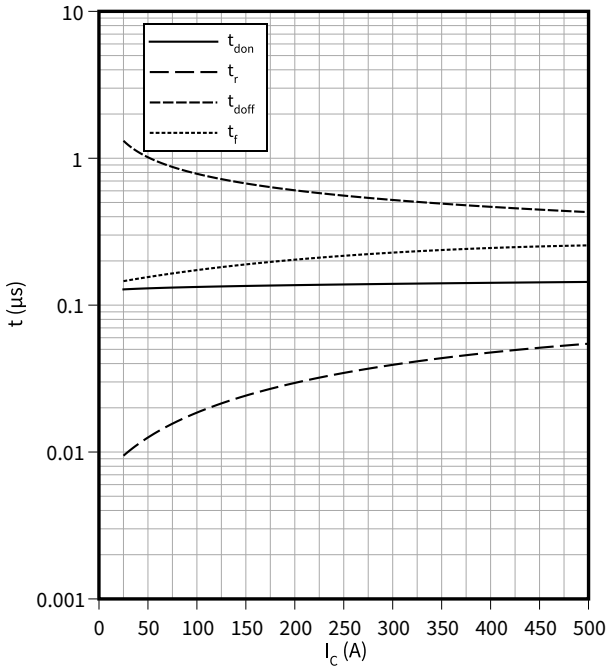
$C = f(V_{CE})$
$f = 100\ kHz,\ V_{GE} = 0\ V,\ T_{vj} = 25\ °C$



Switching times (typical), IGBT, T2 / T3

$t = f(I_C)$

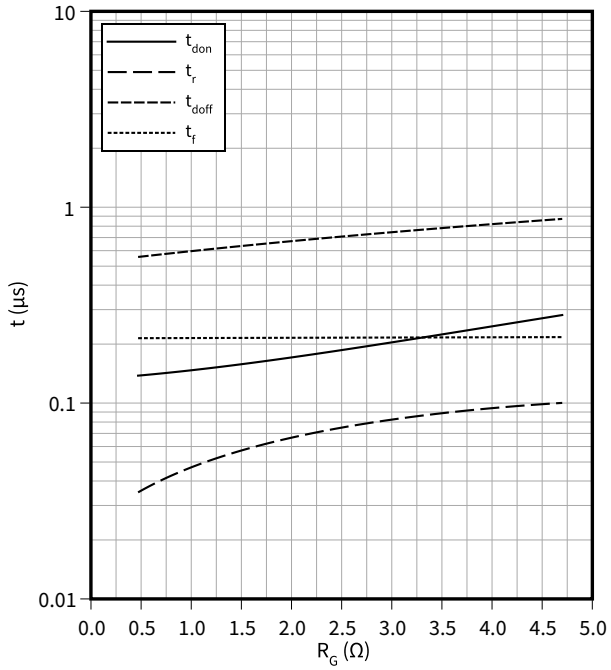
$R_{Goff} = 0.47\ \Omega$, $R_{Gon} = 0.47\ \Omega$, $V_{CC} = 500\ V$, $\pm 15\ V$, $T_{vj} = 175\ °C$



Switching times (typical), IGBT, T2 / T3

$t = f(R_G)$

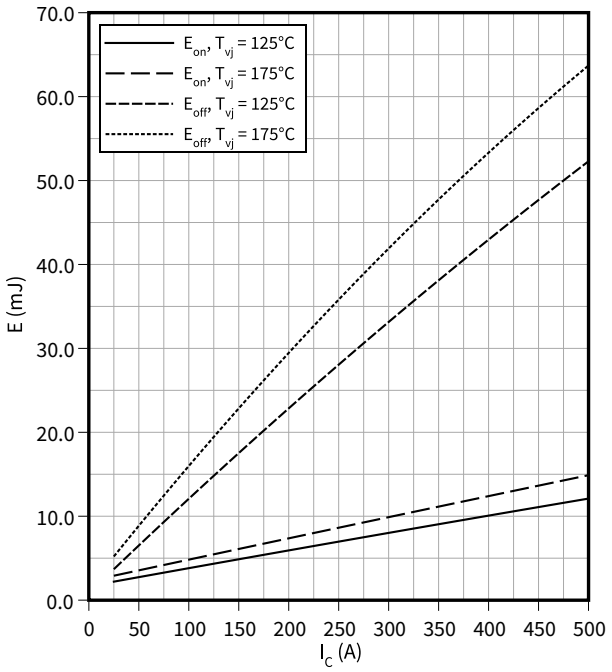
$I_C = 250\ A$, $V_{CC} = 500\ V$, $\pm 15\ V$, $T_{vj} = 175\ °C$



Switching losses (typical), IGBT, T2 / T3

$E = f(I_C)$

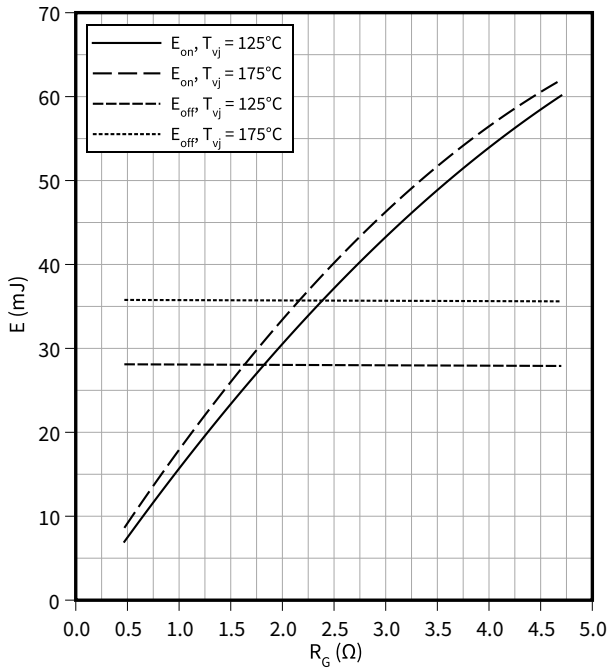
$R_{Goff} = 0.47\ \Omega$, $R_{Gon} = 0.47\ \Omega$, $V_{CC} = 500\ V$, $\pm 15\ V$



Switching losses (typical), IGBT, T2 / T3

$E = f(R_G)$

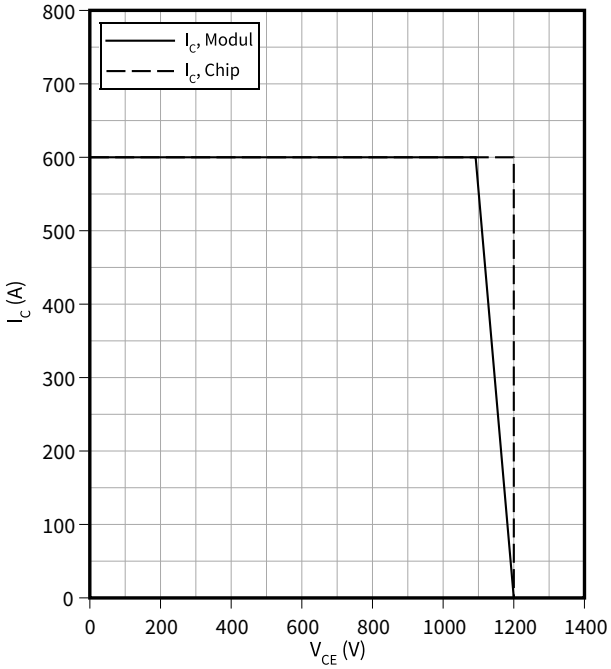
$I_C = 250\ A$, $V_{CC} = 500\ V$, $\pm 15\ V$



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

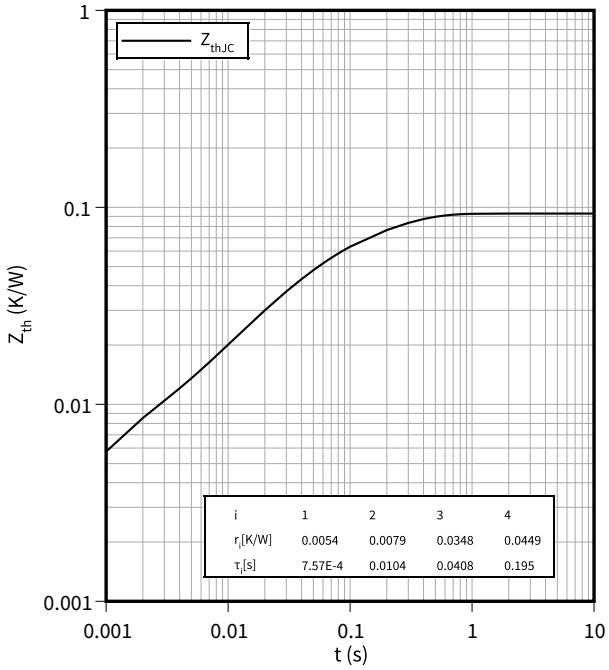
$I_C = f(V_{CE})$

$R_{Goff} = 0.47\ \Omega$, $V_{GE} = \pm 15$ V, $T_{vj} = 175$ °C



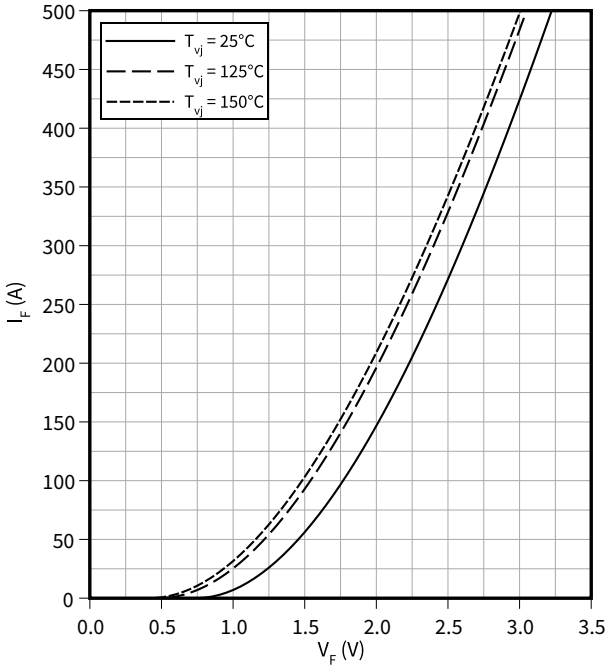
Transient thermal impedance, IGBT, T2 / T3

$Z_{th} = f(t)$



Forward characteristic (typical), Diode, D1 / D4

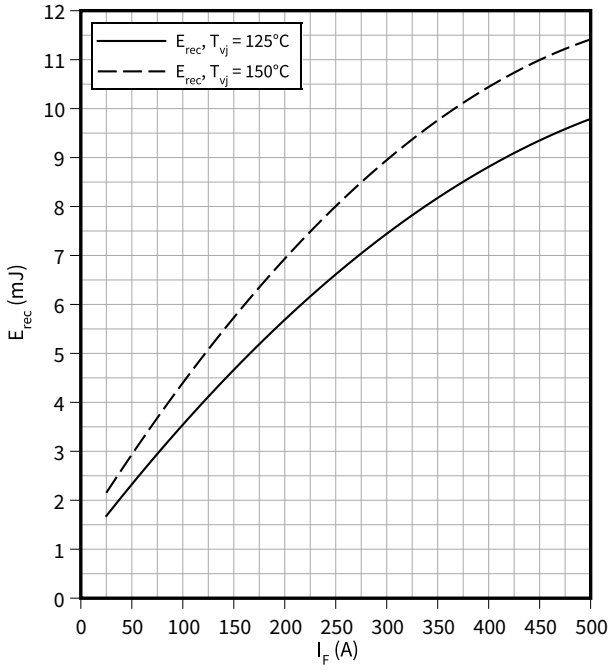
$I_F = f(V_F)$



Switching losses (typical), Diode, D1 / D4

$E_{rec} = f(I_F)$

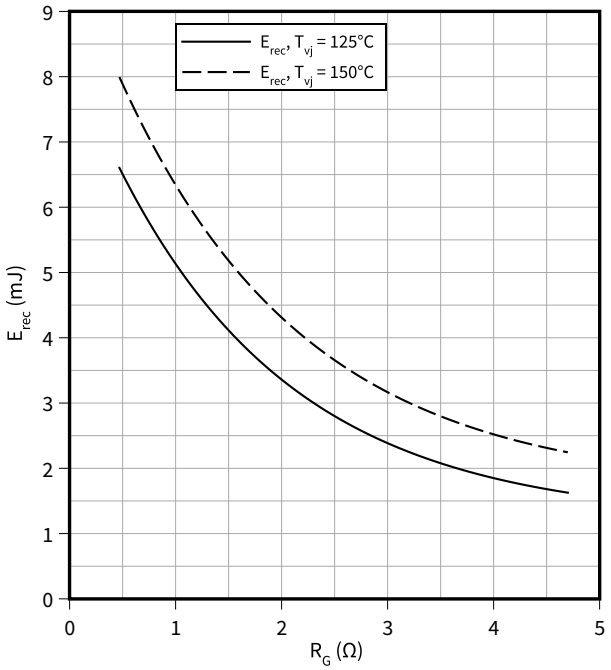
$R_G = 0.47\ \Omega$, $V_{CC} = 500$ V



Switching losses (typical), Diode, D1 / D4

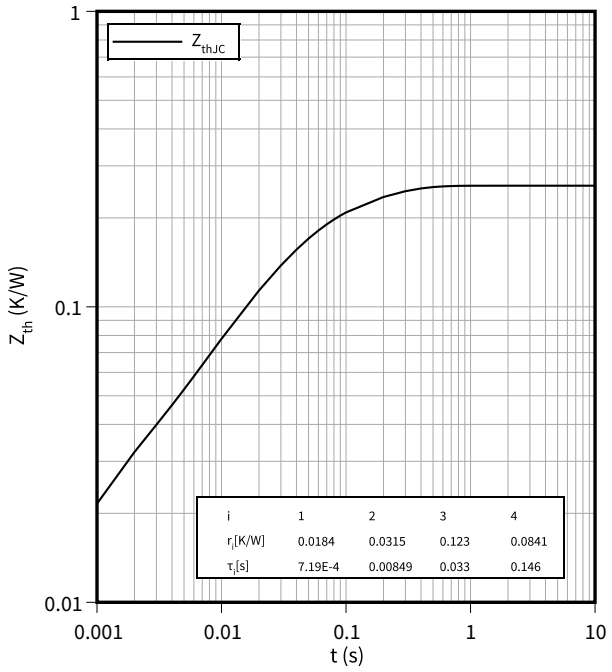
$E_{rec} = f(R_G)$

$I_F = 250\ A$, $V_{CC} = 500\ V$



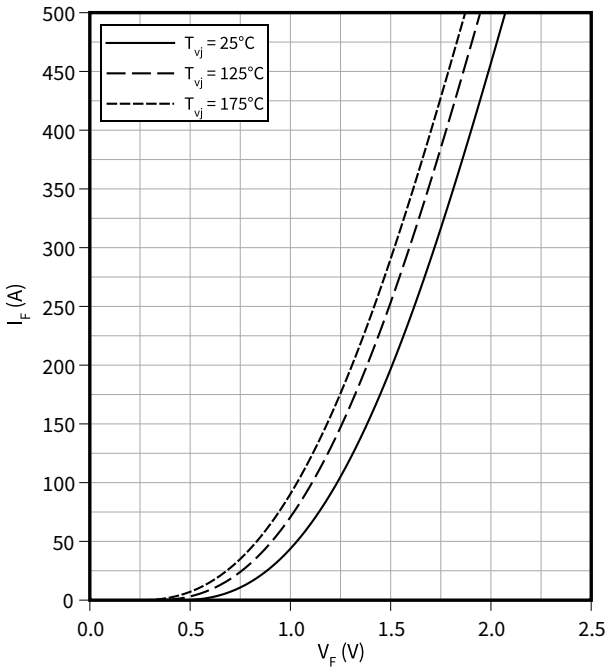
Transient thermal impedance, Diode, D1 / D4

$Z_{th} = f(t)$



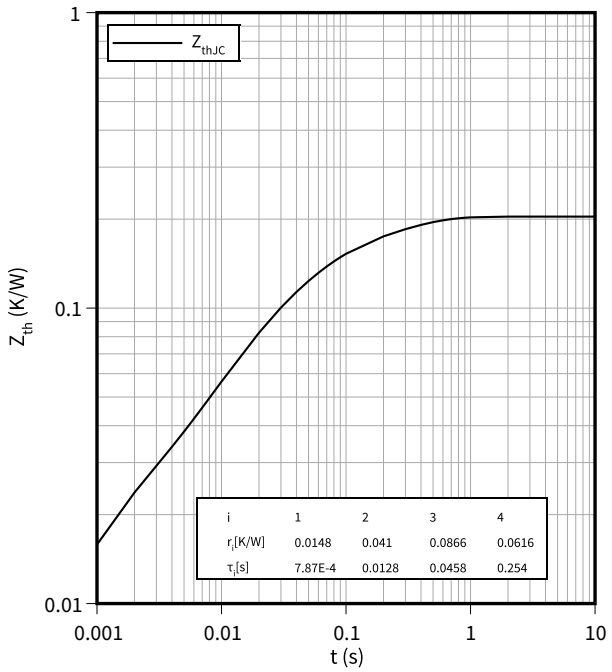
Forward characteristic (typical), Diode, D2 / D3

$I_F = f(V_F)$



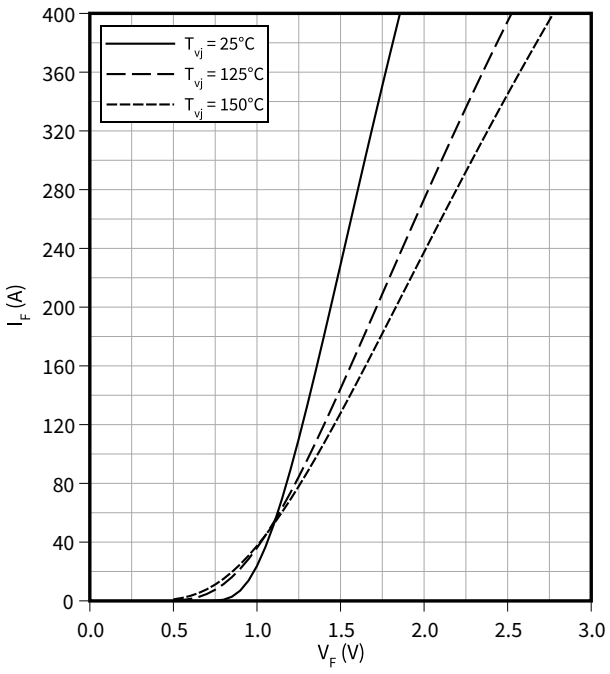
Transient thermal impedance, Diode, D2 / D3

$Z_{th} = f(t)$



Forward characteristic (typical), Diode, D5 / D6

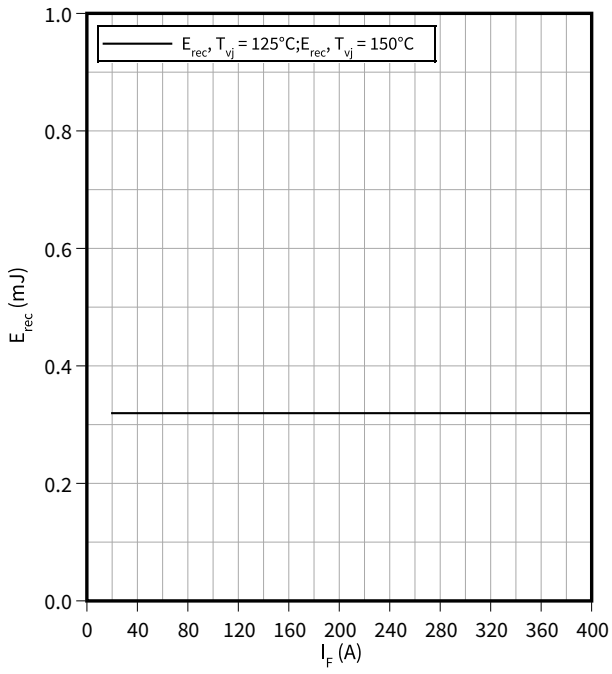
$I_F = f(V_F)$



Switching losses (typical), Diode, D5 / D6

$E_{rec} = f(I_F)$

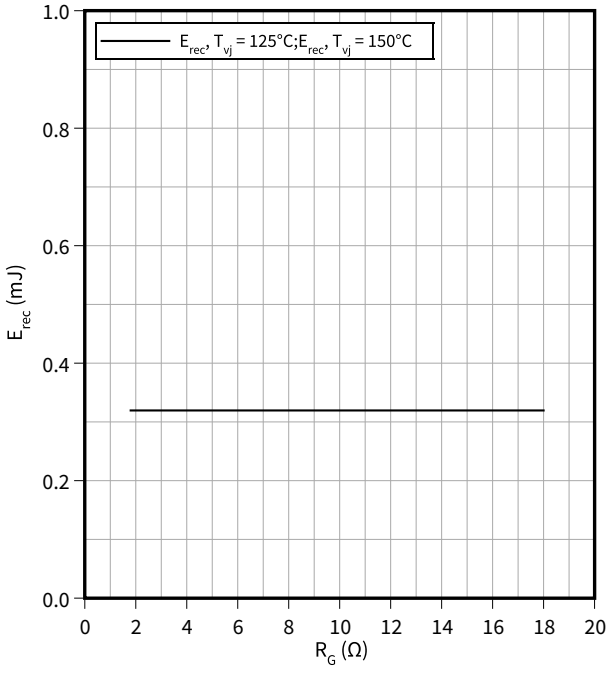
$R_{Gon} = 1.8\ \Omega$, $V_{CE} = 500$ V



Switching losses (typical), Diode, D5 / D6

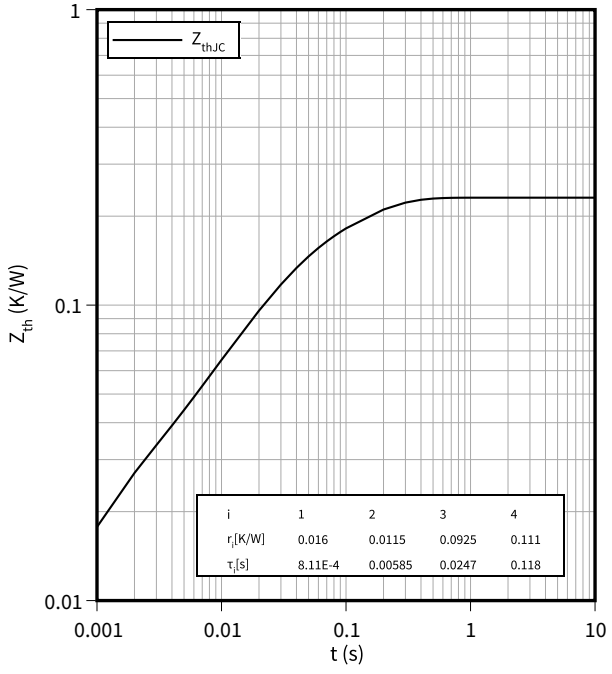
$E_{rec} = f(R_G)$

$V_{CE} = 500$ V, $I_F = 200$ A



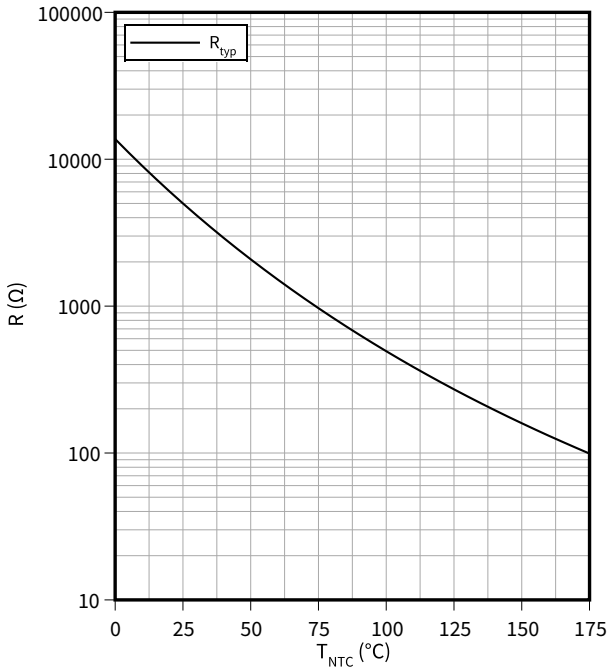
Transient thermal impedance, Diode, D5 / D6

$Z_{th} = f(t)$



Temperature characteristic (typical), NTC-Thermistor

$R = f(T_{NTC})$



9 Circuit diagram

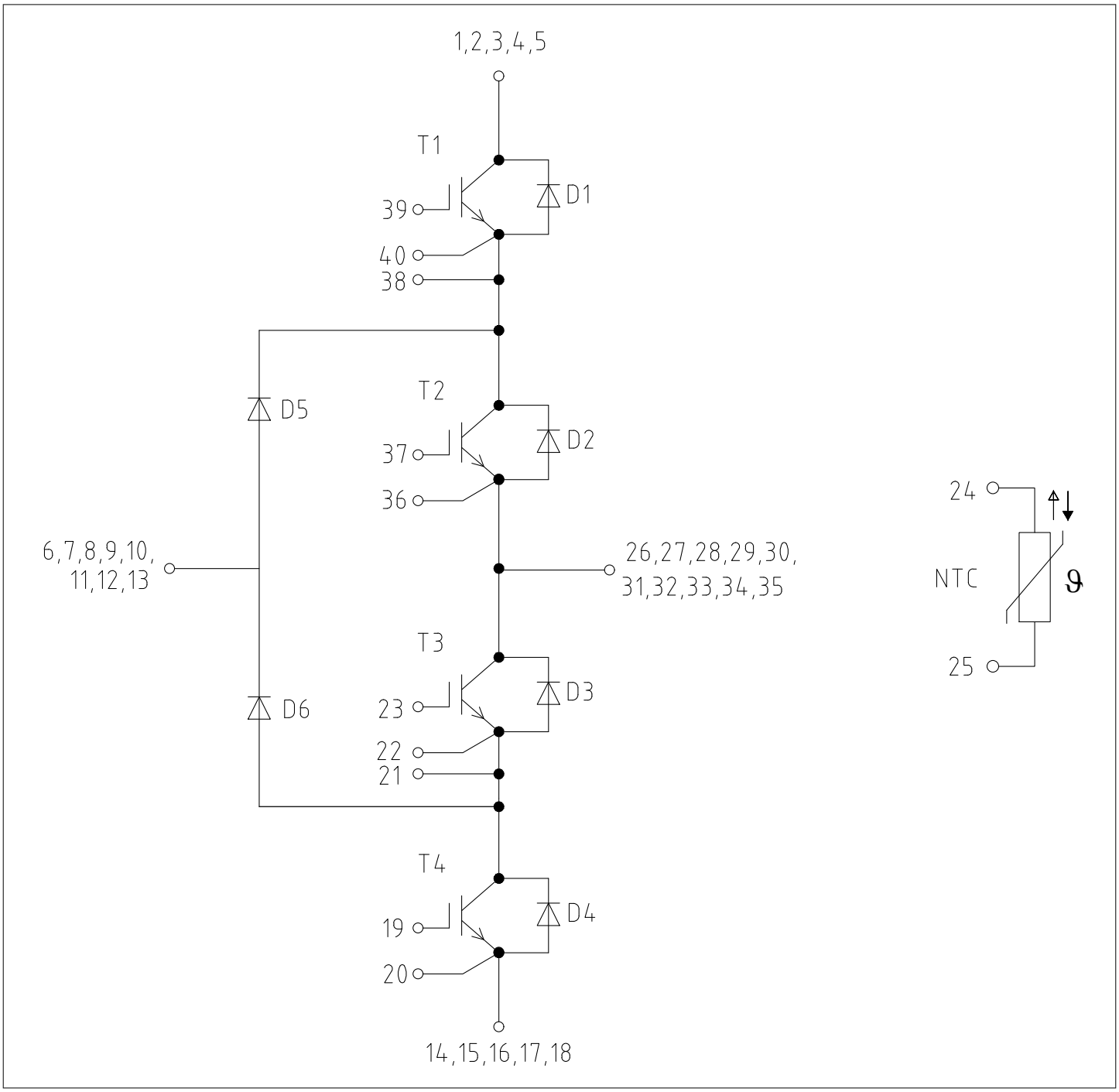


Figure 1

10 Package outlines

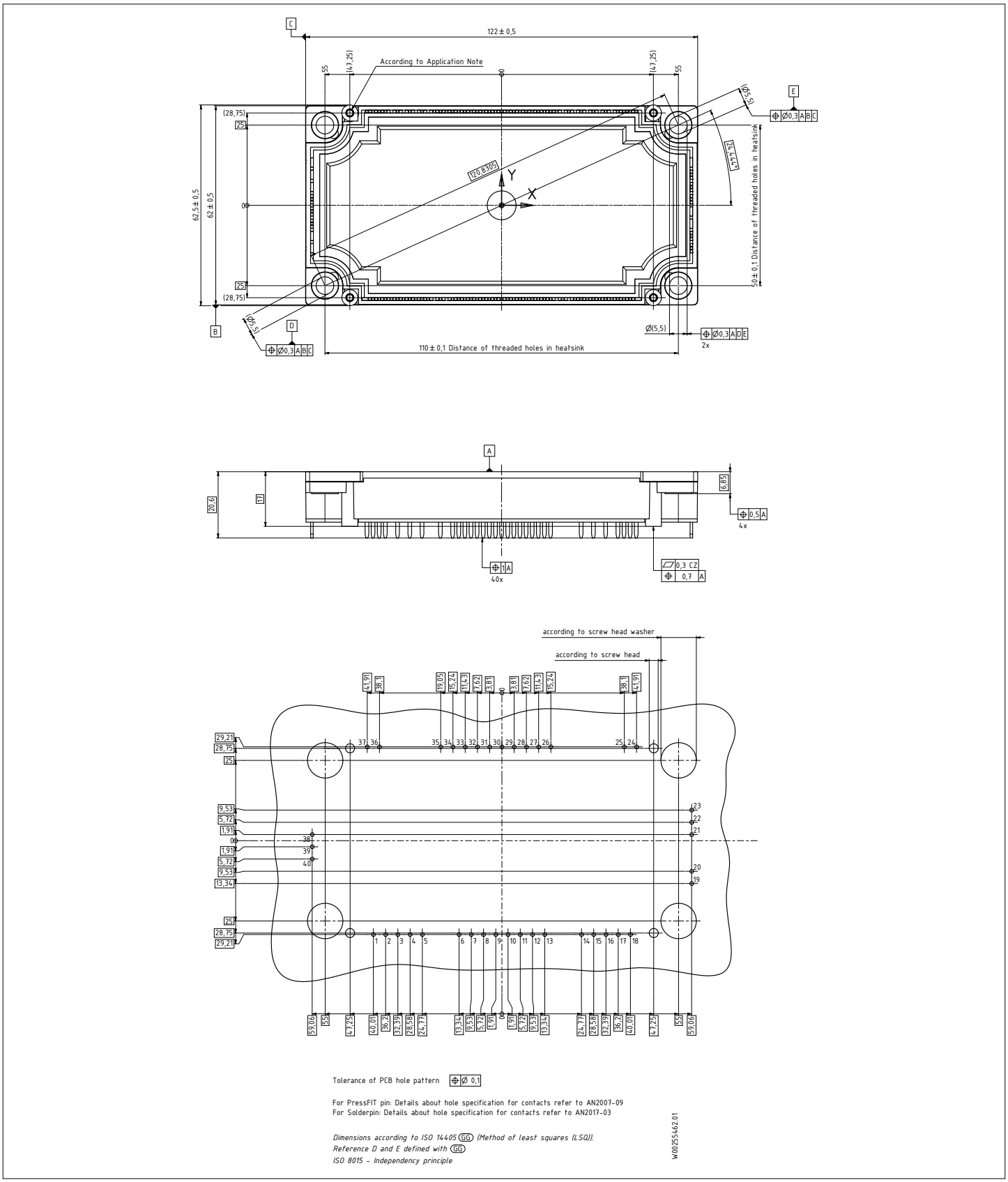


Figure 2

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	7154914284655054991530		7154914284655054991530

Figure 3

Revision history

Document revision	Date of release	Description of changes
0.10	2024-11-05	Initial version
1.00	2024-12-18	Final datasheet

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Edition 2024-12-18

Published by

Infineon Technologies AG

81726 Munich, Germany

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Document reference
IFX-ABK178-002

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