

Low loss Duopack: IGBT 7 with Trench and Fieldstop technology

Features

- $V_{CE} = 650\text{ V}$
- $I_C = 50\text{ A}$
- Very low $V_{CE,sat}$
- Low turn-off losses
- Short tail current
- Reduced EMI
- Very soft, fast recovery antiparallel diode
- Maximum junction temperature $T_{vjmax} = 175^\circ\text{C}$
- Qualified according to JEDEC for target applications
- Pb-free lead plating; RoHS compliant
- Complete product spectrum and PSpice Models: <http://www.infineon.com/igbt7/>

Potential applications

- Servo drives
- General purpose drives (GPD)
- Industrial UPS
- Industrial SMPS
- Solar optimizer
- Solar string inverter

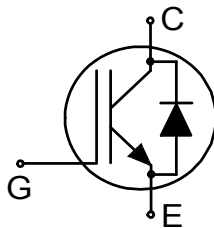
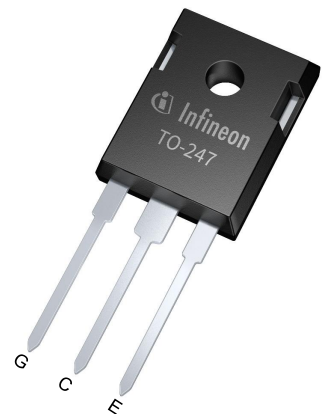
Product validation

- Qualified for industrial applications according to the relevant tests of JEDEC47/20/22

Description

Package pin definition:

- Pin C & backside - Collector
- Pin E - Emitter
- Pin G - Gate



| Type | Package | Marking |
|-------------|------------|---------|
| IKW50N65ET7 | PG-TO247-3 | K50EET7 |

Table of contents

| | | |
|----------|---------------------------------------|----|
| | Description | 1 |
| | Features | 1 |
| | Potential applications | 1 |
| | Product validation | 1 |
| | Table of contents | 2 |
| 1 | Package | 3 |
| 2 | IGBT | 3 |
| 3 | Diode | 6 |
| 4 | Characteristics diagrams | 9 |
| 5 | Package outlines | 16 |
| 6 | Testing conditions | 17 |
| | Revision history | 18 |
| | Disclaimer | 19 |

1 Package

Table 1 Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit |
|---|---------------|--|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| Internal emitter inductance measured 5 mm (0.197 in.) from case | L_E | | | 13 | | nH |
| Storage temperature | T_{stg} | | -55 | | 150 | °C |
| Soldering temperature | T_{sold} | wave soldering 1.6 mm (0.063 in.) from case for 10 s | | | 260 | °C |
| Mounting torque | M | M3 screw, Maximum of mounting processes: 3 | | | 0.6 | Nm |
| Thermal resistance, junction-ambient | $R_{th(j-a)}$ | | | | 40 | K/W |
| IGBT thermal resistance, junction-case | $R_{th(j-c)}$ | | | | 0.55 | K/W |
| Diode thermal resistance, junction-case | $R_{th(j-c)}$ | | | | 0.8 | K/W |

2 IGBT

Table 2 Maximum rated values

| Parameter | Symbol | Note or test condition | Values | Unit | |
|--|--------------|---|---|------|---------------|
| Collector-emitter voltage | V_{CE} | $T_{vj} \geq 25\text{ °C}$ | 650 | V | |
| DC collector current, limited by T_{vjmax} | I_C | limited by bondwire | $T_c = 25\text{ °C}$ | 80 | A |
| | | | $T_c = 100\text{ °C}$ | 59.7 | |
| Pulsed collector current, t_p limited by T_{vjmax} ¹⁾ | I_{Cpulse} | | 150 | A | |
| Turn-off safe operating area ²⁾ | | $V_{CE} \leq 650\text{ V}$, $t_p = 1\text{ }\mu\text{s}$, $T_{vj} \leq 175\text{ °C}$ | 150 | A | |
| Gate-emitter voltage | V_{GE} | | ± 20 | V | |
| Transient gate-emitter voltage | V_{GE} | $t_p \leq 10\text{ }\mu\text{s}$, $D < 0.01$ | ± 30 | V | |
| Short-circuit withstand time | t_{SC} | $V_{GE} = 15\text{ V}$, Allowed number of short circuits < 1000, Time between short circuits $\geq 1.0\text{ s}$ | $V_{CC} \leq 330\text{ V}$, $T_{vj} = 100\text{ °C}$ | 5 | μs |
| | | | $V_{CC} \leq 400\text{ V}$, $T_{vj} = 150\text{ °C}$ | 3 | |
| Power dissipation | P_{tot} | | $T_c = 25\text{ °C}$ | 273 | W |
| | | | $T_c = 100\text{ °C}$ | 136 | |

1) Defined by design. Not subject to production test.

2) Clamped inductive load current test for each device, $I_C = 150\text{ A}$, $V_{CC} = 400\text{ V}$, $T_c = 25\text{ °C}$, $V_{GE} = 20\text{ V}$, $L = 80\text{ }\mu\text{H}$, $R_G = 10\text{ }\Omega$

Table 3 Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit | |
|--------------------------------------|-------------|--|---|------|------|------|---------------|
| | | | Min. | Typ. | Max. | | |
| Collector-emitter saturation voltage | V_{CEsat} | $I_C = 50\text{ A}, V_{GE} = 15\text{ V}$ | $T_{vj} = 25\text{ °C}$ | | 1.35 | 1.65 | V |
| | | | $T_{vj} = 125\text{ °C}$ | | 1.5 | | |
| | | | $T_{vj} = 175\text{ °C}$ | | 1.6 | | |
| Gate-emitter threshold voltage | V_{GETh} | $I_C = 0.5\text{ mA}, V_{CE} = V_{GE}$ | | 4.3 | 5 | 5.7 | V |
| Zero gate-voltage collector current | I_{CES} | $V_{CE} = 650\text{ V}, V_{GE} = 0\text{ V}$ | $T_{vj} = 25\text{ °C}$ | | | 40 | μA |
| | | | $T_{vj} = 175\text{ °C}$ | | 1000 | | |
| Gate-emitter leakage current | I_{GES} | $V_{CE} = 0\text{ V}, V_{GE} = 20\text{ V}$ | | | | 100 | nA |
| Transconductance | g_{fs} | $I_C = 50\text{ A}, V_{CE} = 20\text{ V}$ | | | 26 | | S |
| Short-circuit collector current | I_{SC} | $V_{CC} \leq 400\text{ V}, V_{GE} = 15\text{ V}, t_{SC} \leq 3\text{ }\mu\text{s}$, Allowed number of short circuits < 1000, Time between short circuits $\geq 1.0\text{ s}$, $T_{vj} = 150\text{ °C}$ | | | 255 | | A |
| Input capacitance | C_{ies} | $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1000\text{ kHz}$ | | | 3050 | | pF |
| Output capacitance | C_{oes} | $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1000\text{ kHz}$ | | | 92 | | pF |
| Reverse transfer capacitance | C_{res} | $V_{CE} = 25\text{ V}, V_{GE} = 0\text{ V}, f = 1000\text{ kHz}$ | | | 31 | | pF |
| Gate charge | Q_G | $I_C = 50\text{ A}, V_{GE} = 15\text{ V}, V_{CC} = 520\text{ V}$ | | | 290 | | nC |
| Turn-on delay time | $t_{d(on)}$ | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V}, R_{G(on)} = 9\text{ }\Omega, R_{G(off)} = 9\text{ }\Omega, L_\sigma = 32\text{ nH}, C_\sigma = 30\text{ pF}$ | $T_{vj} = 25\text{ °C}, I_C = 50\text{ A}$ | | 26 | | ns |
| | | | $T_{vj} = 25\text{ °C}, I_C = 25\text{ A}$ | | 24 | | |
| | | | $T_{vj} = 175\text{ °C}, I_C = 50\text{ A}$ | | 30 | | |
| | | | $T_{vj} = 175\text{ °C}, I_C = 25\text{ A}$ | | 27 | | |
| Rise time (inductive load) | t_r | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V}, R_{G(on)} = 9\text{ }\Omega, R_{G(off)} = 9\text{ }\Omega, L_\sigma = 32\text{ nH}, C_\sigma = 30\text{ pF}$ | $T_{vj} = 25\text{ °C}, I_C = 50\text{ A}$ | | 20 | | ns |
| | | | $T_{vj} = 25\text{ °C}, I_C = 25\text{ A}$ | | 11 | | |
| | | | $T_{vj} = 175\text{ °C}, I_C = 50\text{ A}$ | | 23 | | |
| | | | $T_{vj} = 175\text{ °C}, I_C = 25\text{ A}$ | | 14 | | |

(table continues...)

Table 3 (continued) Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit | |
|----------------------------|--------------|--|--|------|------|------|----|
| | | | Min. | Typ. | Max. | | |
| Turn-off delay time | $t_{d(off)}$ | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V},$ $R_{G(on)} = 9\ \Omega, R_{G(off)} = 9\ \Omega,$ $L_{\sigma} = 32\text{ nH}, C_{\sigma} = 30\text{ pF}$ | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 350 | | ns |
| | | | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 370 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 410 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 450 | | |
| Fall time (inductive load) | t_f | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V},$ $R_{G(on)} = 9\ \Omega, R_{G(off)} = 9\ \Omega,$ $L_{\sigma} = 32\text{ nH}, C_{\sigma} = 30\text{ pF}$ | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 14 | | ns |
| | | | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 12 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 30 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 40 | | |
| Turn-on energy | E_{on} | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V},$ $R_{G(on)} = 9\ \Omega, R_{G(off)} = 9\ \Omega,$ $L_{\sigma} = 32\text{ nH}, C_{\sigma} = 30\text{ pF}$ | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 1.2 | | mJ |
| | | | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 0.51 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 1.91 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 0.88 | | |
| Turn-off energy | E_{off} | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V},$ $R_{G(on)} = 9\ \Omega, R_{G(off)} = 9\ \Omega,$ $L_{\sigma} = 32\text{ nH}, C_{\sigma} = 30\text{ pF}$ | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 0.85 | | mJ |
| | | | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 0.38 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 1.4 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 0.69 | | |

(table continues...)

Table 3 (continued) Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit | |
|--------------------------------|----------|--|--|------|------|--------------------|----|
| | | | Min. | Typ. | Max. | | |
| Total switching energy | E_{ts} | $V_{CC} = 400\text{ V}, V_{GE} = 0/15\text{ V},$ $R_{G(on)} = 9\ \Omega, R_{G(off)} = 9\ \Omega,$ $L_{\sigma} = 32\text{ nH}, C_{\sigma} = 30\text{ pF}$ | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 2.05 | | mJ |
| | | | $T_{vj} = 25\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 0.89 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 50\text{ A}$ | | 3.31 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C},$ $I_C = 25\text{ A}$ | | 1.57 | | |
| Operating junction temperature | T_{vj} | | -40 | | 175 | $^{\circ}\text{C}$ | |

3 Diode

Table 4 Maximum rated values

| Parameter | Symbol | Note or test condition | Values | Unit | |
|--|--------------|--|-------------------------------------|------|---|
| Repetitive peak reverse voltage | V_{RRM} | $T_{vj} \geq 25\text{ }^{\circ}\text{C}$ | 650 | V | |
| Diode forward current, limited by T_{vjmax} | I_F | limited by bondwire | $T_c = 25\text{ }^{\circ}\text{C}$ | 80 | A |
| | | | $T_c = 100\text{ }^{\circ}\text{C}$ | 50 | |
| Diode pulsed current, t_p limited by T_{vjmax} ¹⁾ | I_{Fpulse} | | 150 | A | |

1) Defined by design. Not subject to production test.

Table 5 Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit | |
|-----------------------|--------|------------------------|--|------|------|------|---|
| | | | Min. | Typ. | Max. | | |
| Diode forward voltage | V_F | $I_F = 50\text{ A}$ | $T_{vj} = 25\text{ }^{\circ}\text{C}$ | | 1.65 | 2 | V |
| | | | $T_{vj} = 125\text{ }^{\circ}\text{C}$ | | 1.6 | | |
| | | | $T_{vj} = 175\text{ }^{\circ}\text{C}$ | | 1.55 | | |

(table continues...)

Table 5 (continued) Characteristic values

| Parameter | Symbol | Note or test condition | Values | | | Unit | |
|-------------------------------------|-----------|------------------------|---|------|------|------|---------------|
| | | | Min. | Typ. | Max. | | |
| Diode reverse recovery time | t_{rr} | $V_R = 400\text{ V}$ | $T_{vj} = 25\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1720\text{ A}/\mu\text{s}$ | | 93 | | ns |
| | | | $T_{vj} = 25\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2340\text{ A}/\mu\text{s}$ | | 62 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1680\text{ A}/\mu\text{s}$ | | 140 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2000\text{ A}/\mu\text{s}$ | | 105 | | |
| Diode reverse recovery charge | Q_{rr} | $V_R = 400\text{ V}$ | $T_{vj} = 25\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1720\text{ A}/\mu\text{s}$ | | 1.05 | | μC |
| | | | $T_{vj} = 25\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2340\text{ A}/\mu\text{s}$ | | 0.74 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1680\text{ A}/\mu\text{s}$ | | 2.7 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2000\text{ A}/\mu\text{s}$ | | 1.95 | | |
| Diode peak reverse recovery current | I_{rrm} | $V_R = 400\text{ V}$ | $T_{vj} = 25\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1720\text{ A}/\mu\text{s}$ | | 21 | | A |
| | | | $T_{vj} = 25\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2340\text{ A}/\mu\text{s}$ | | 25 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 50\text{ A}$, $-di_F/dt = 1680\text{ A}/\mu\text{s}$ | | 33 | | |
| | | | $T_{vj} = 175\text{ °C}$, $I_F = 25\text{ A}$, $-di_F/dt = 2000\text{ A}/\mu\text{s}$ | | 34 | | |

(table continues...)

Table 5 (continued) Characteristic values

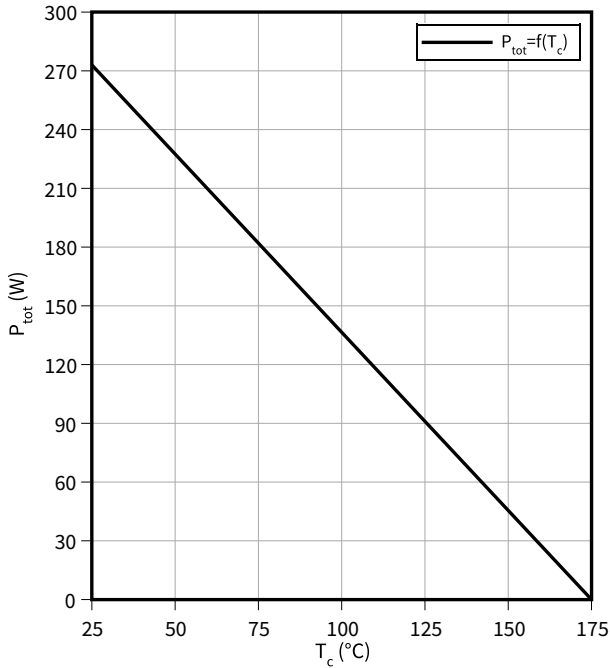
| Parameter | Symbol | Note or test condition | | Values | | | Unit |
|---|--------------|------------------------|--|--------|------|------|------------------|
| | | | | Min. | Typ. | Max. | |
| Diode peak rate of fall of reverse recovery current | di_{rr}/dt | $V_R = 400 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C},$ $I_F = 50 \text{ A},$ $-di_F/dt = 1720 \text{ A}/\mu\text{s}$ | | 260 | | A/ μs |
| | | | $T_{vj} = 25 \text{ }^\circ\text{C},$ $I_F = 25 \text{ A},$ $-di_F/dt = 2340 \text{ A}/\mu\text{s}$ | | 490 | | |
| | | | $T_{vj} = 175 \text{ }^\circ\text{C},$ $I_F = 50 \text{ A},$ $-di_F/dt = 1680 \text{ A}/\mu\text{s}$ | | 290 | | |
| | | | $T_{vj} = 175 \text{ }^\circ\text{C},$ $I_F = 25 \text{ A},$ $-di_F/dt = 2000 \text{ A}/\mu\text{s}$ | | 415 | | |
| Operating junction temperature | T_{vj} | | | -40 | | 175 | $^\circ\text{C}$ |

Note: *Maximum rated values: For optimum lifetime and reliability, Infineon recommends operating conditions that do not exceed 80% of the maximum ratings stated in this datasheet.*
Electrical Characteristic, at $T_{vj} = 25^\circ\text{C}$, unless otherwise specified.
Dynamic test circuit, L_σ, C_σ from Fig. E. Energy losses include “tail” and diode reverse recovery.

4 Characteristics diagrams

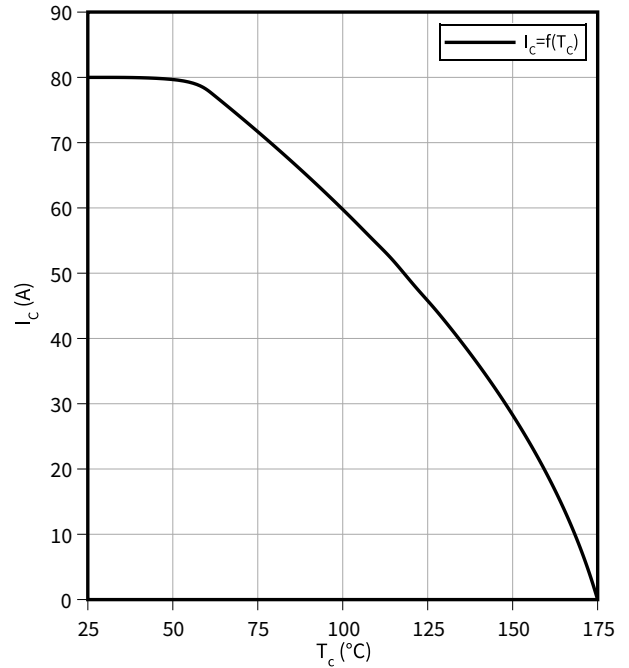
Power dissipation as a function of case temperature

$P_{tot} = f(T_c)$
 $T_{vj} \leq 175\text{ °C}$



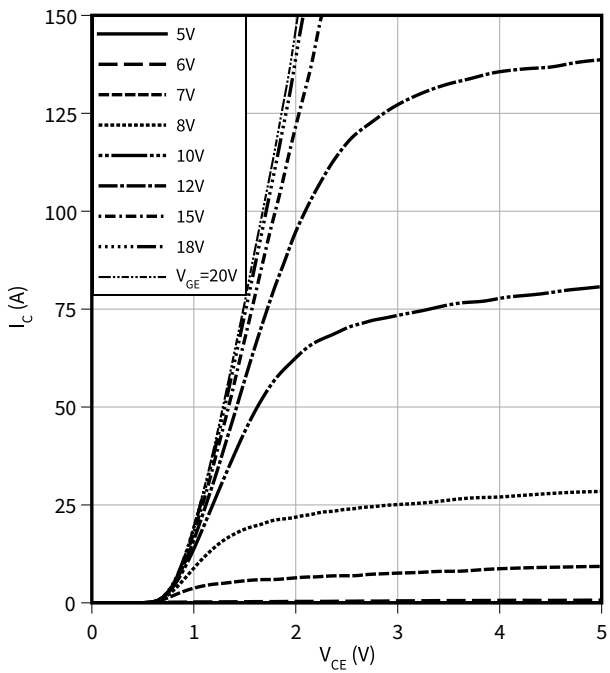
Collector current as a function of case temperature

$I_C = f(T_c)$
 $T_{vj} \leq 175\text{ °C}, V_{GE} \geq 15\text{ V}$



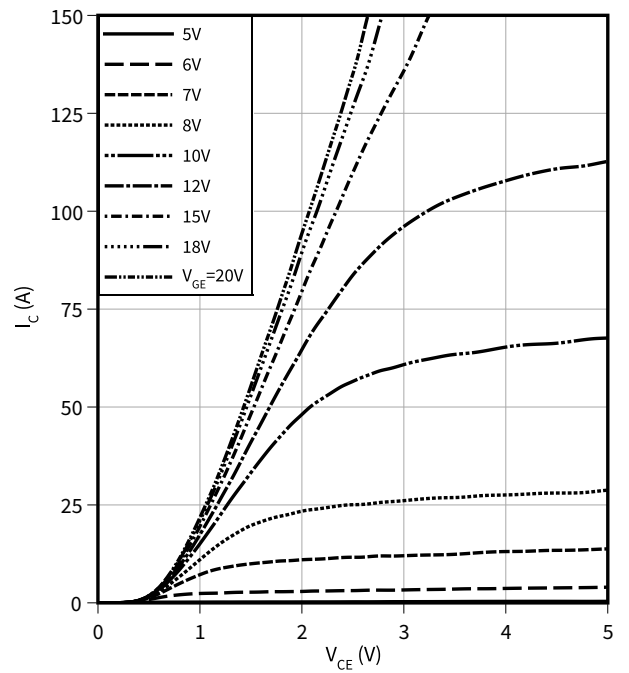
Typical output characteristic

$I_C = f(V_{CE})$
 $T_{vj} = 25\text{ °C}$



Typical output characteristic

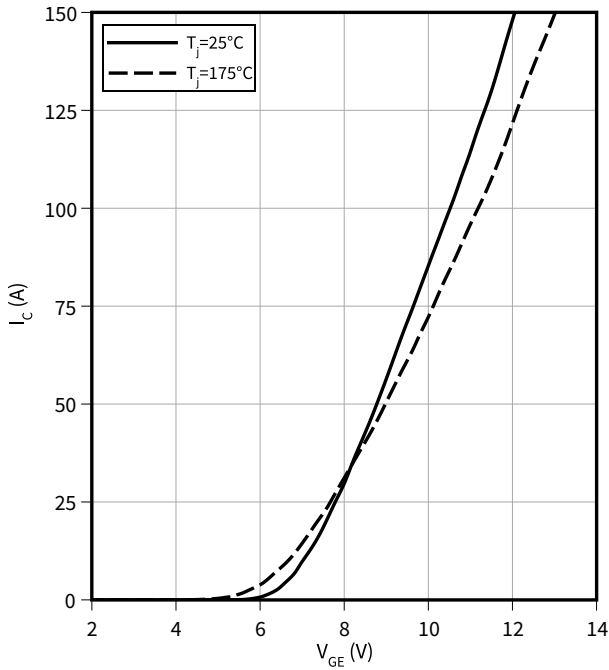
$I_C = f(V_{CE})$
 $T_{vj} = 175\text{ °C}$



4 Characteristics diagrams

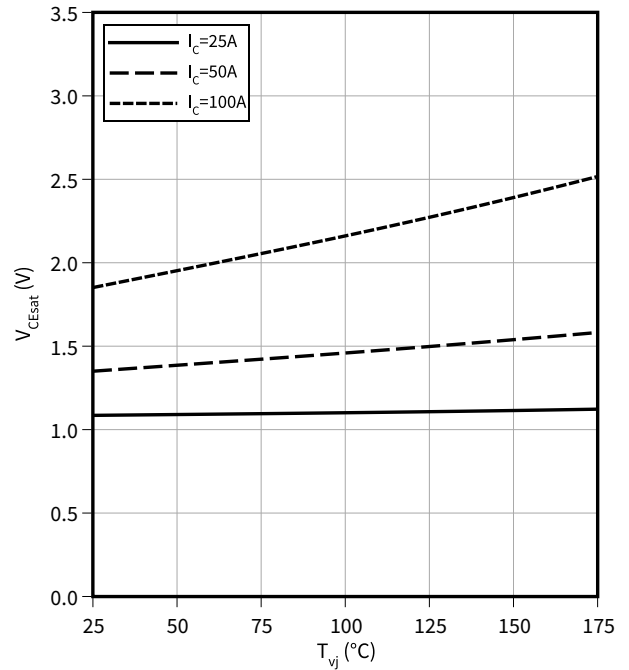
Typical transfer characteristic

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



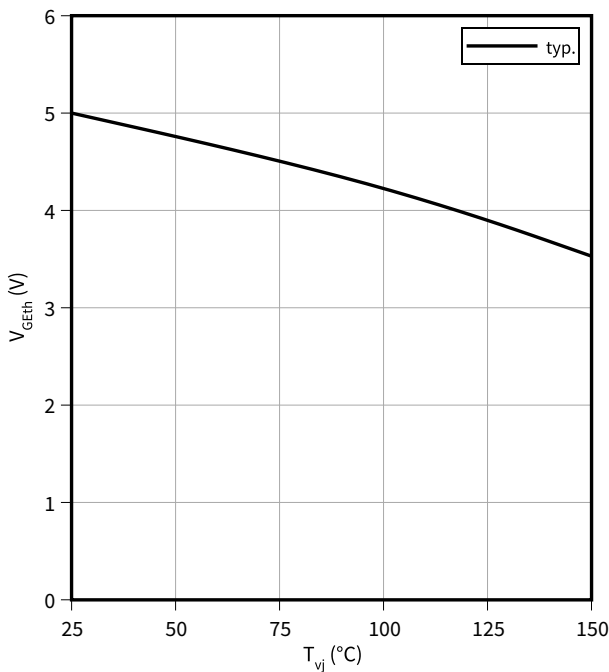
Typical collector-emitter saturation voltage as a function of junction temperature

$V_{CEsat} = f(T_{vj})$
 $V_{GE} = 15 \text{ V}$



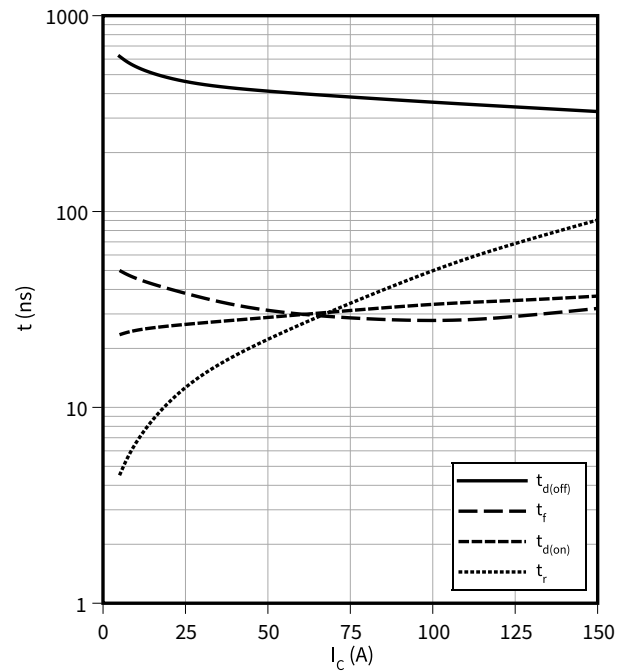
Gate-emitter threshold voltage as a function of junction temperature

$V_{GEth} = f(T_{vj})$
 $I_C = 0.5 \text{ mA}$



Typical switching times as a function of collector current

$t = f(I_C)$
 $V_{CC} = 400 \text{ V}, T_{vj} = 175^\circ\text{C}, V_{GE} = 0/15 \text{ V}, R_G = 9 \Omega$

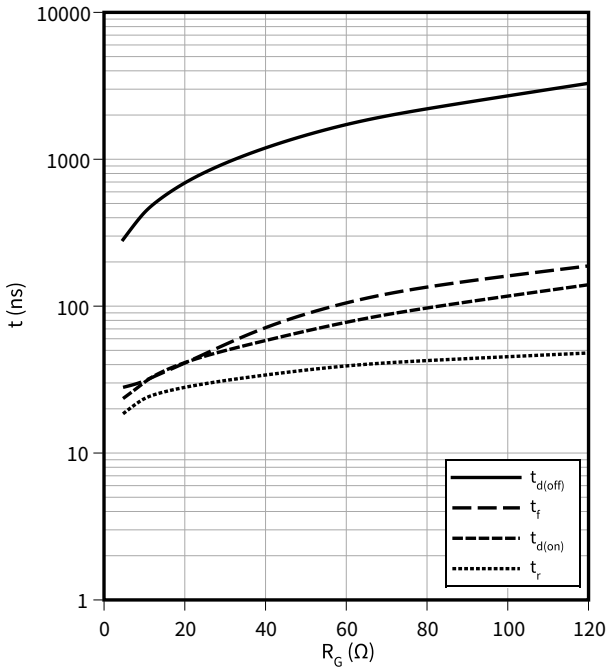


4 Characteristics diagrams

Typical switching times as a function of gate resistor

$t = f(R_G)$

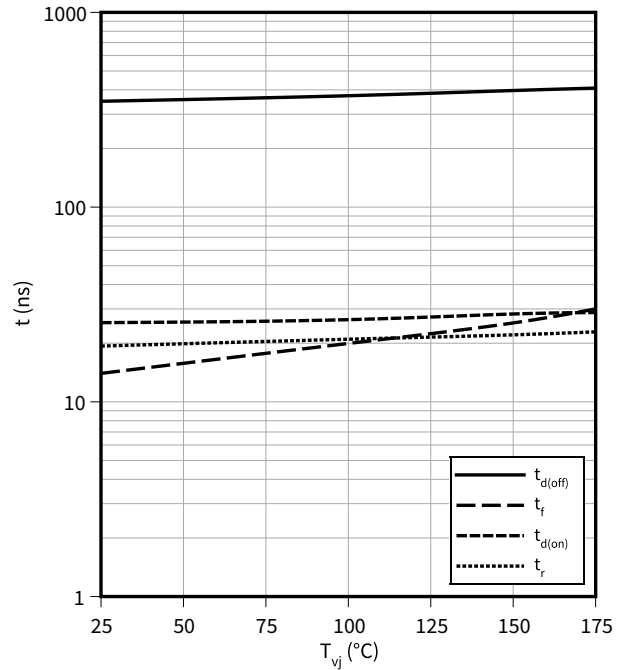
$I_C = 50 \text{ A}, V_{CC} = 400 \text{ V}, T_{vj} = 175 \text{ }^\circ\text{C}, V_{GE} = 0/15 \text{ V}$



Typical switching times as a function of junction temperature

$t = f(T_{vj})$

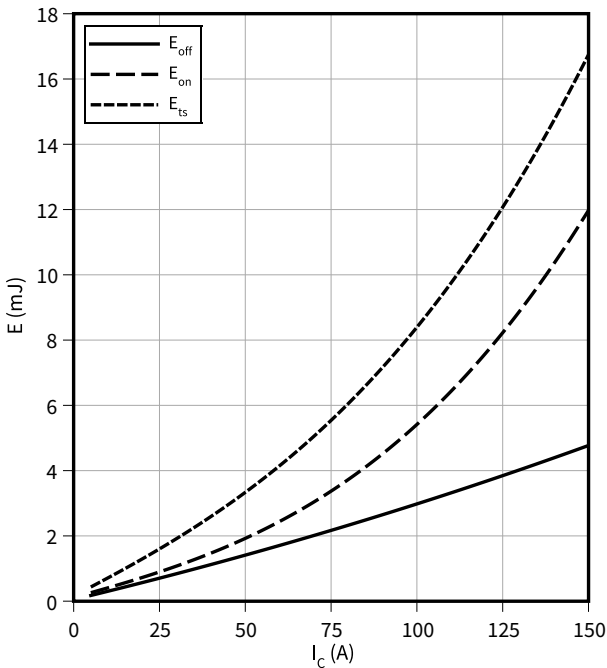
$I_C = 50 \text{ A}, V_{CC} = 400 \text{ V}, V_{GE} = 0/15 \text{ V}, R_G = 9 \text{ } \Omega$



Typical switching energy losses as a function of collector current

$E = f(I_C)$

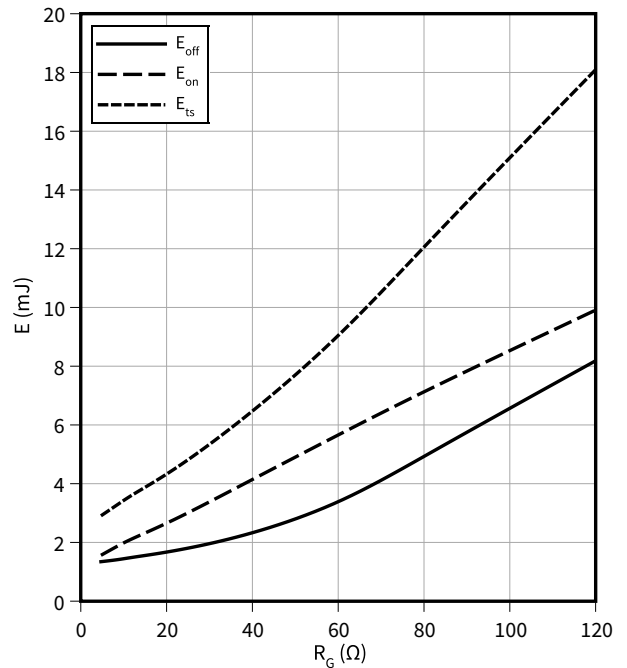
$V_{CC} = 400 \text{ V}, T_{vj} = 175 \text{ }^\circ\text{C}, V_{GE} = 0/15 \text{ V}, R_G = 9 \text{ } \Omega$



Typical switching energy losses as a function of gate resistor

$E = f(R_G)$

$I_C = 50 \text{ A}, V_{CC} = 400 \text{ V}, T_{vj} = 175 \text{ }^\circ\text{C}, V_{GE} = 0/15 \text{ V}$

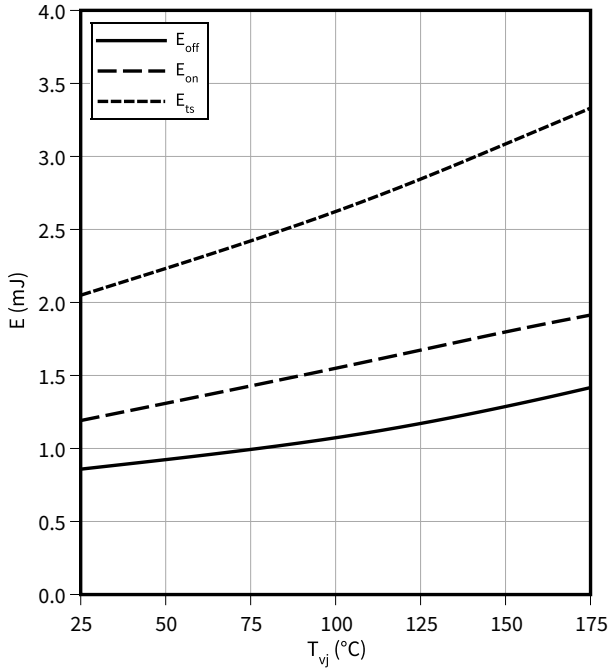


4 Characteristics diagrams

Typical switching energy losses as a function of junction temperature

$E = f(T_{vj})$

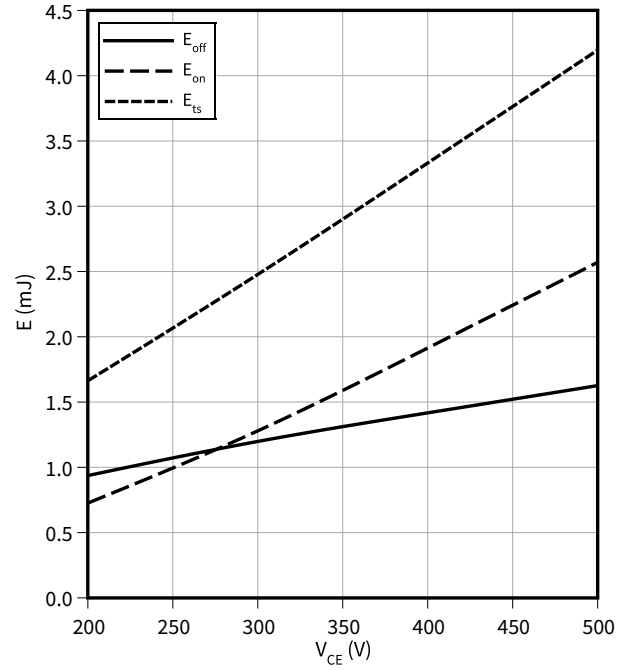
$I_C = 50\text{ A}$, $V_{CC} = 400\text{ V}$, $V_{GE} = 0/15\text{ V}$, $R_G = 9\ \Omega$



Typical switching energy losses as a function of collector emitter voltage

$E = f(V_{CE})$

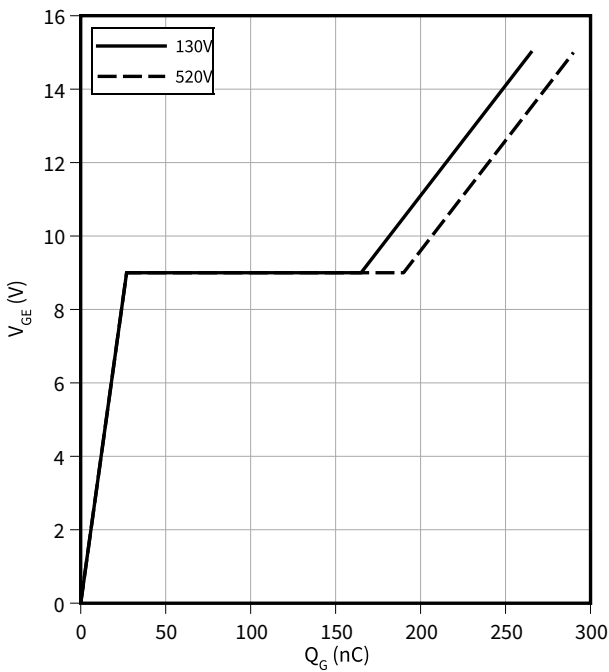
$I_C = 50\text{ A}$, $T_{vj} = 175\text{ °C}$, $V_{GE} = 0/15\text{ V}$, $R_G = 9\ \Omega$



Typical gate charge

$V_{GE} = f(Q_G)$

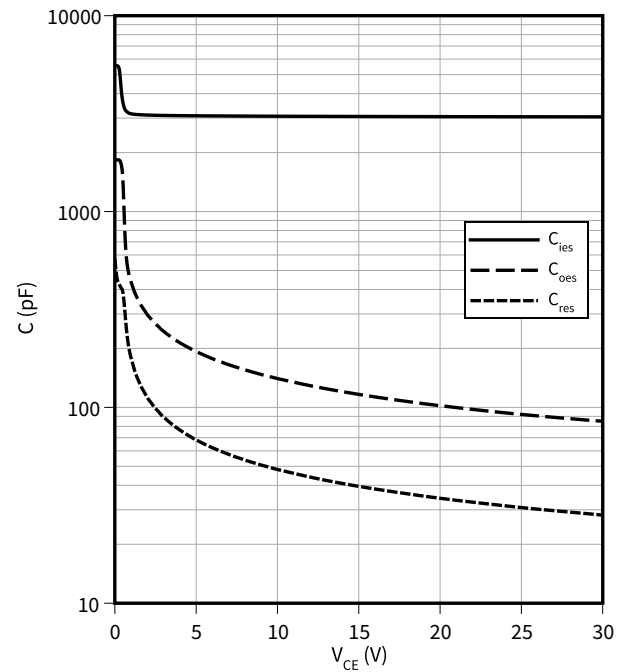
$I_C = 50\text{ A}$



Typical capacitance as a function of collector-emitter voltage

$C = f(V_{CE})$

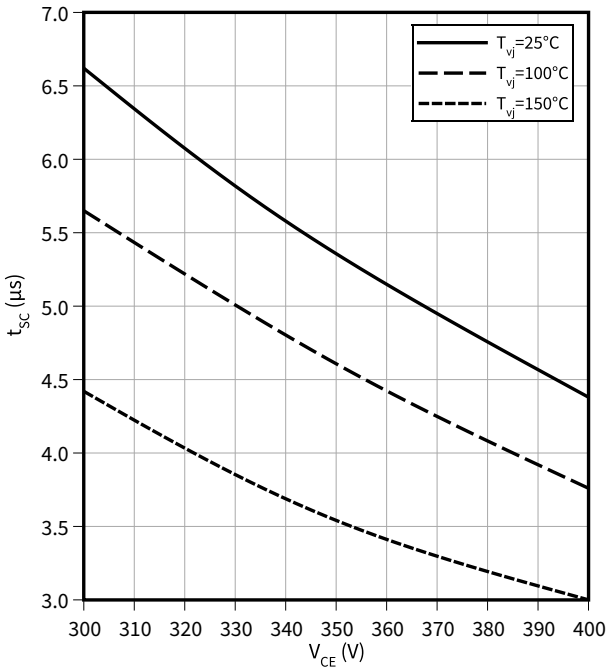
$f = 1000\text{ kHz}$, $V_{GE} = 0\text{ V}$



4 Characteristics diagrams

Typical short circuit safe operating range as a function of collector-emitter voltage

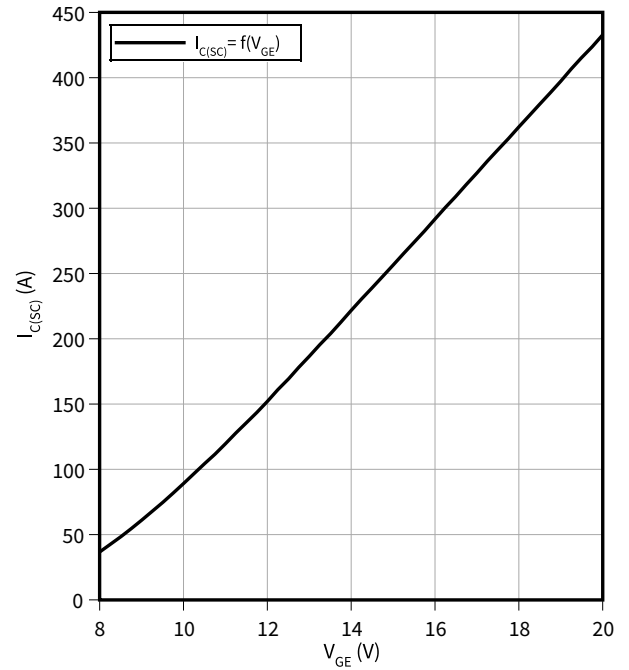
$$t_{SC} = f(V_{CE})$$



Typical short circuit collector current as a function of gate-emitter voltage

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

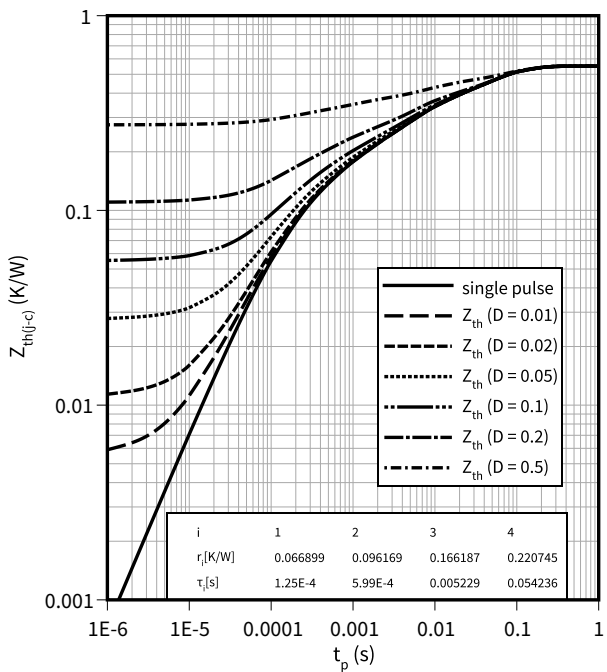
$V_{CE} \leq 400 V, T_{vj} = 150^\circ C$



IGBT transient thermal impedance as a function of pulse width

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

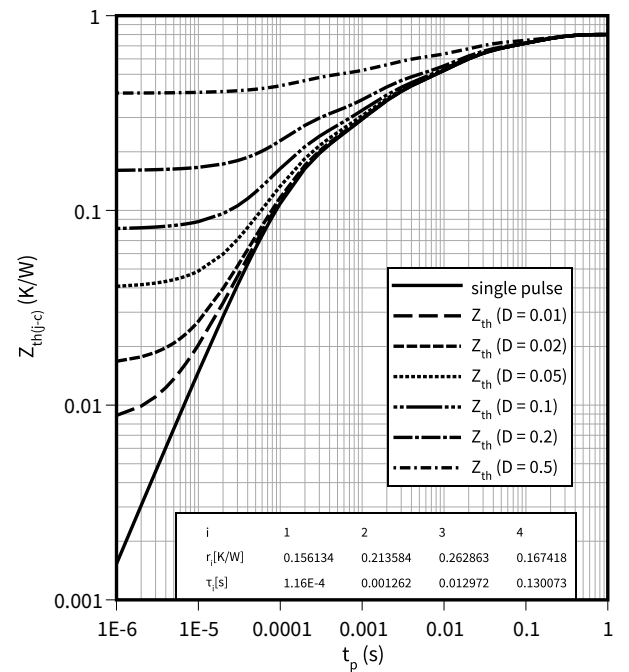
$$D = t_p/T$$



Diode transient thermal impedance as a function of pulse width

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

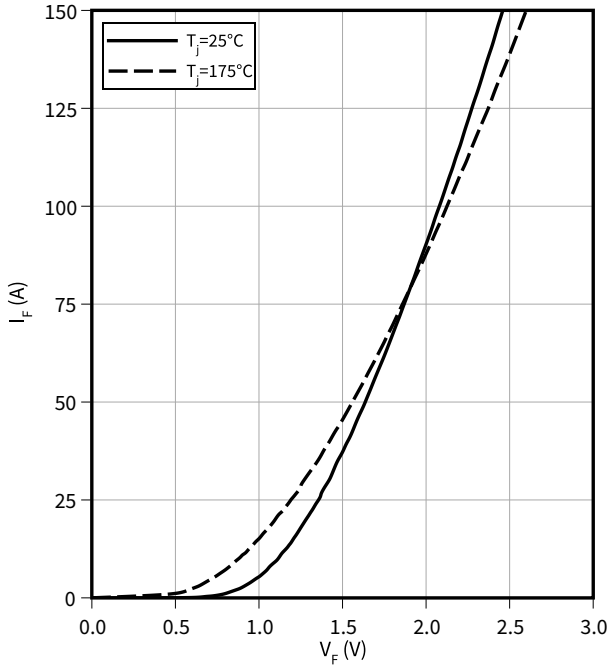
$$D = t_p/T$$



4 Characteristics diagrams

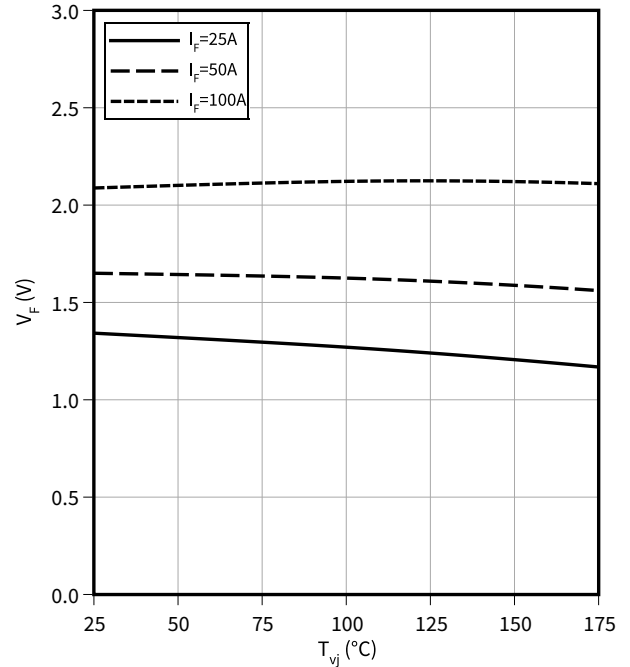
Typical diode forward current as a function of forward voltage

$I_F = f(V_F)$



Typical diode forward voltage as a function of junction temperature

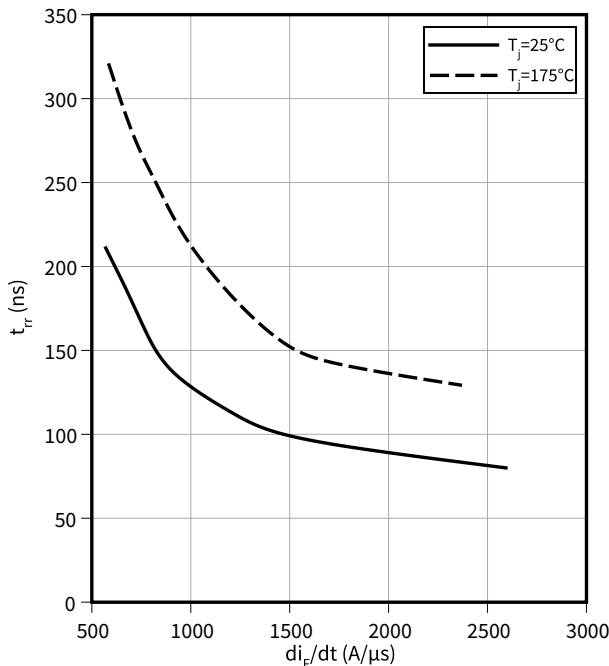
$V_F = f(T_{vj})$



Typical reverse recovery time as a function of diode current slope

$t_{rr} = f(di_F/dt)$

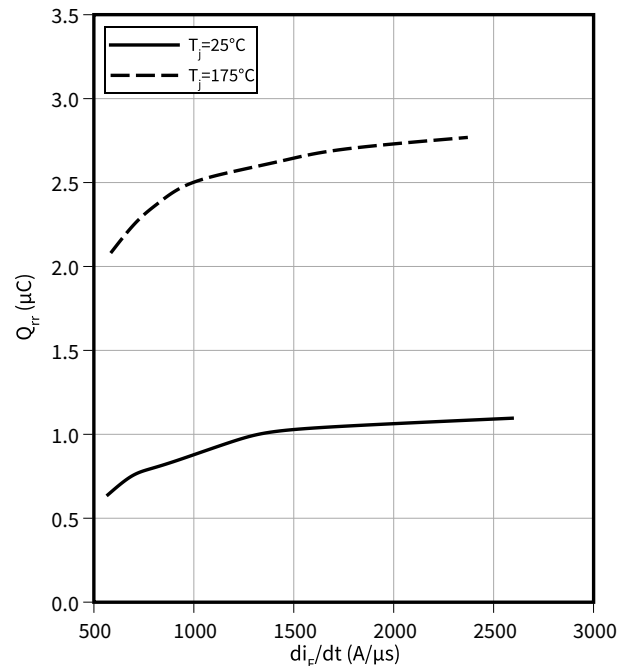
$V_R = 400\text{ V}, I_F = 50\text{ A}$



Typical reverse recovery charge as a function of diode current slope

$Q_{rr} = f(di_F/dt)$

$V_R = 400\text{ V}, I_F = 50\text{ A}$

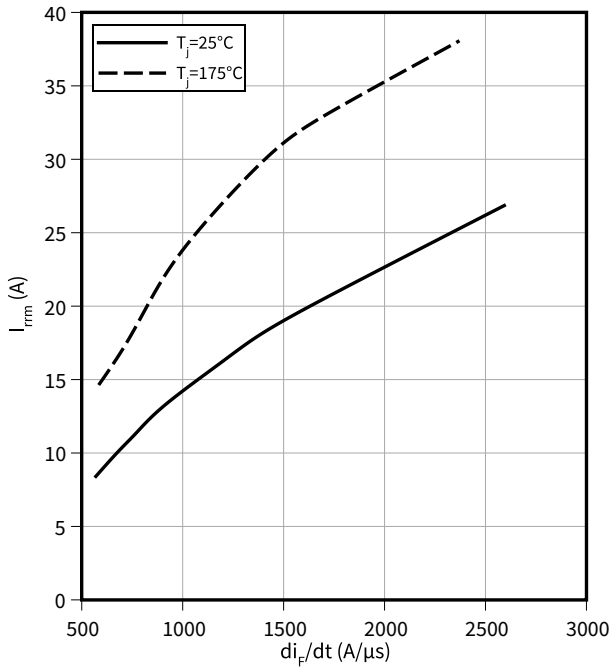


4 Characteristics diagrams

Typical reverse recovery current as a function of diode current slope

$$I_{rrm} = f(di_F/dt)$$

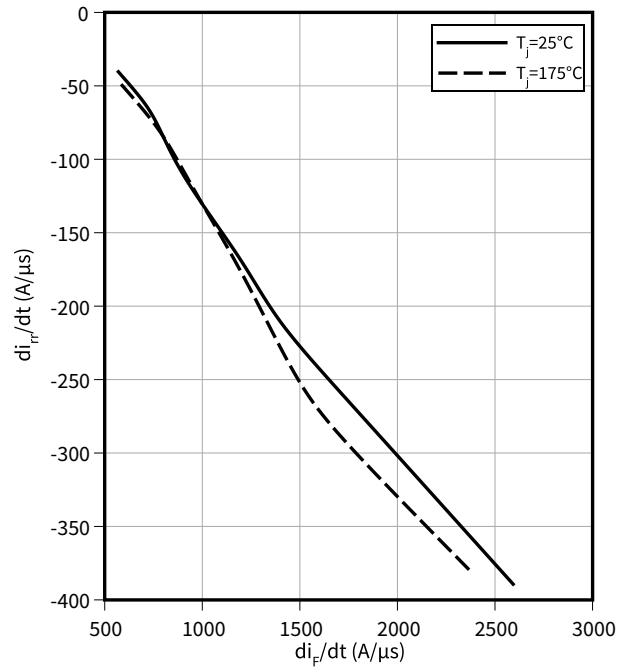
$V_R = 400\text{ V}$, $I_F = 50\text{ A}$



Typical diode peak rate of fall of reverse recovery current as a function of diode current slope

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

$V_R = 400\text{ V}$, $I_F = 50\text{ A}$



5 Package outlines

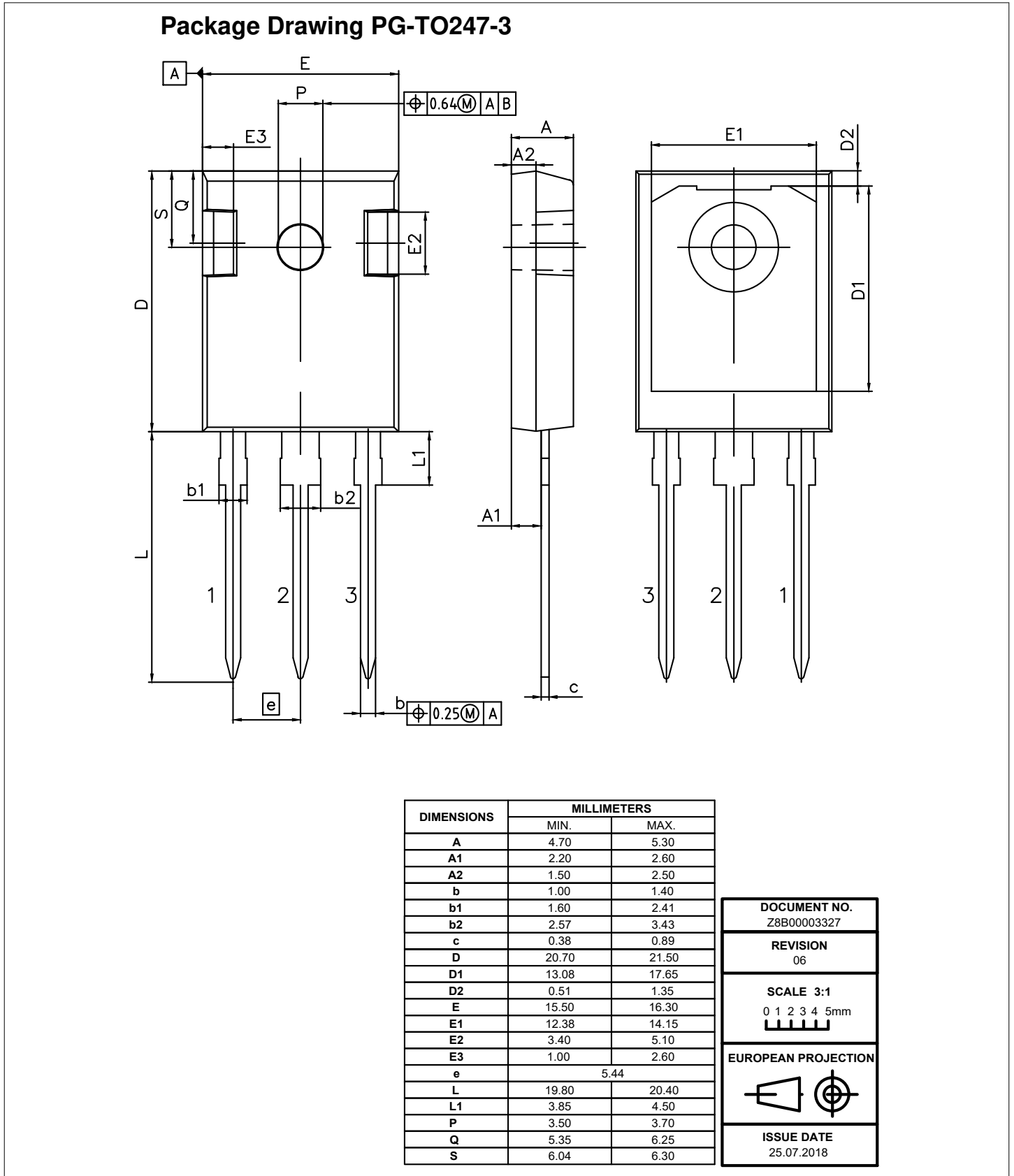


Figure 1

6 Testing conditions

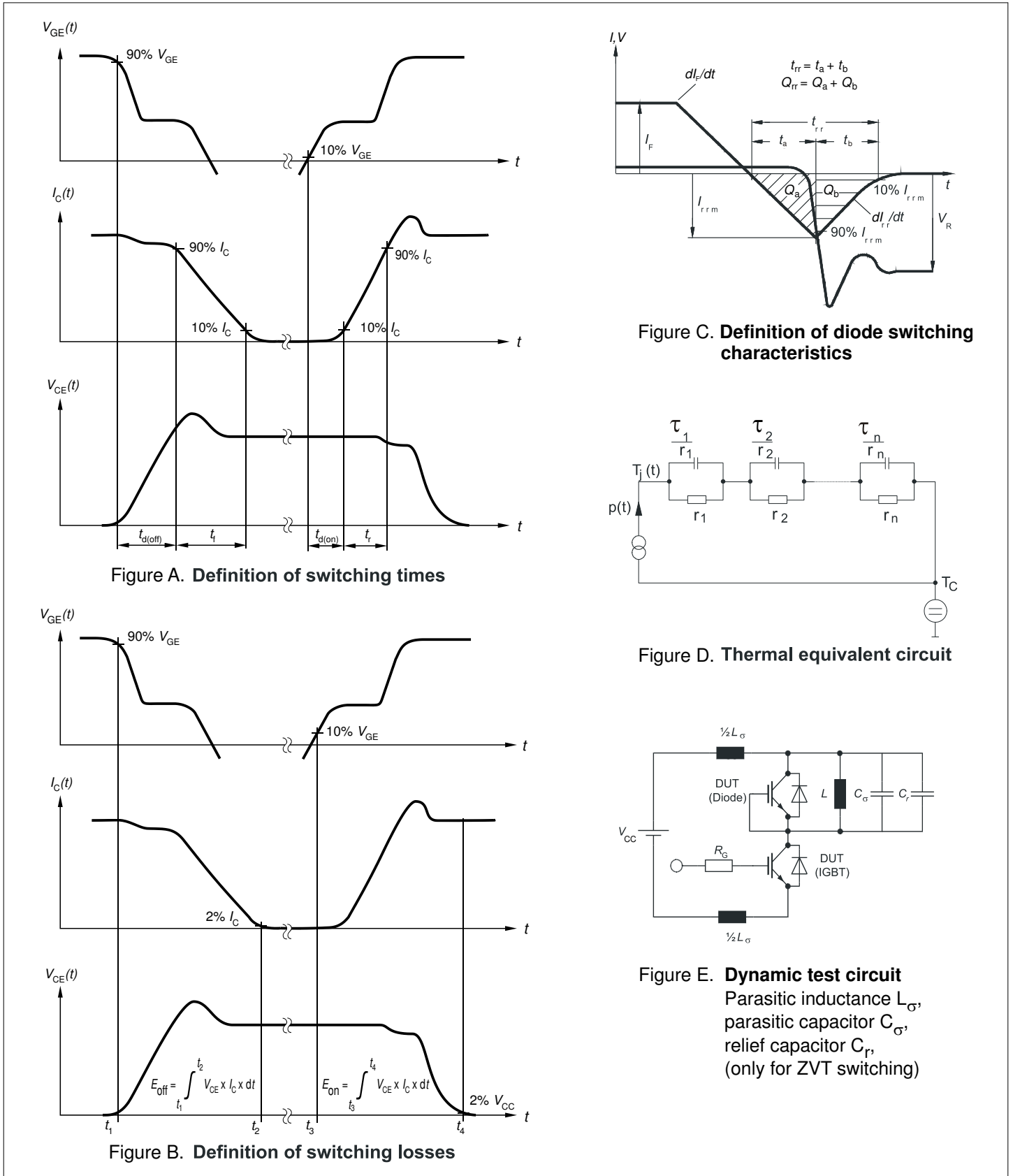


Figure 2

Revision history

| Document revision | Date of release | Description of changes |
|-------------------|-----------------|---|
| V0.1 | 2019-10-25 | Target Data Sheet |
| V1.1 | 2020-04-20 | Preliminary data sheet |
| V2.1 | 2020-05-12 | Final data sheet |
| n/a | 2020-11-30 | Datasheet migrated to a new system with a new layout and new revision number schema: target or preliminary datasheet = 0.xy; final datasheet = 1.xy |
| 1.00 | 2021-06-29 | Change of potential applications and new diagram added (t_{SC} as function of V_{CE}) |
| 1.10 | 2023-01-26 | Feature list corrections Editorial changes |

Trademarks

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

Edition 2023-01-26

Published by

Infineon Technologies AG

81726 Munich, Germany

© 2023 Infineon Technologies AG

All Rights Reserved.

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

Email: erratum@infineon.com

Document reference

IFX-AAL329-005

Important notice

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

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.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Infineon:](#)

[IKW50N65ET7XKSA1](#)