

CoolSiC™ 2000 V SiC Trench MOSFET : Silicon Carbide MOSFET with .XT interconnection technology

Features

- $V_{DS} = 2000\text{ V}$  at  $T_{vj} = 25^{\circ}\text{C}$
- $I_{DC} = 89\text{ A}$  at  $T_c = 25^{\circ}\text{C}$
- $R_{DS(on)} = 24\text{ m}\Omega$  at  $V_{GS} = 18\text{ V}$ ,  $T_{vj} = 25^{\circ}\text{C}$
- Very low switching losses
- Benchmark gate threshold voltage,  $V_{GS(th)} = 4.5\text{ V}$
- Robust body diode for hard commutation
- .XT interconnection technology for best-in-class thermal performance

Potential applications

- String inverter
- Solar power optimizer
- EV-Charging

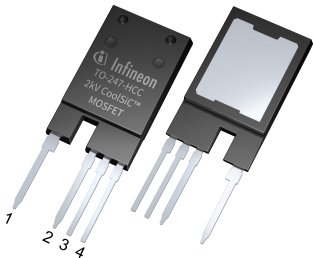
Product validation

- Qualified for industrial applications according to the relevant tests of JEDEC47/20/22
- Please also note the application note AN2019-05 for power and thermal cycling

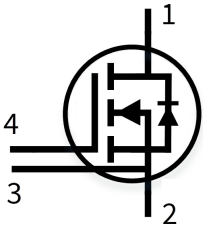
Description

- 1 – drain
- 2 – source
- 3 – Kelvin sense contact
- 4 – gate

Note: the source and sense pins are not exchangeable, their exchange might lead to malfunction (only for 4pin, TO263-7L)



- Halogen-free
- Green
- Lead-free
- RoHS



| Type           | Package              | Marking  |
|----------------|----------------------|----------|
| IMYH200R024M1H | PG-TO247-4-PLUS-NT14 | 20M1H024 |



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## 1 Package

**Table 1** Characteristic values

| Parameter                                           | Symbol        | Note or test condition                               | Values |      |      | Unit |
|-----------------------------------------------------|---------------|------------------------------------------------------|--------|------|------|------|
|                                                     |               |                                                      | Min.   | Typ. | Max. |      |
| 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   |
| Thermal resistance, junction-ambient                | $R_{th(j-a)}$ |                                                      |        |      | 62   | K/W  |
| MOSFET/body diode thermal resistance, junction-case | $R_{th(j-c)}$ |                                                      |        | 0.20 | 0.26 | K/W  |

## 2 MOSFET

**Table 2** Maximum rated values

| Parameter                                                                    | Symbol    | Note or test condition                         |                       | Values | Unit |
|------------------------------------------------------------------------------|-----------|------------------------------------------------|-----------------------|--------|------|
| Drain-source voltage                                                         | $V_{DSS}$ | $T_{vj} \geq 25\text{ °C}$                     |                       | 2000   | V    |
| Continuous DC drain current for $R_{th(j-c,max)}$ , limited by $T_{vj(max)}$ | $I_{DDC}$ | $V_{GS} = 18\text{ V}$                         | $T_c = 25\text{ °C}$  | 89     | A    |
|                                                                              |           |                                                | $T_c = 100\text{ °C}$ | 63     |      |
| Peak drain current, $t_p$ limited by $T_{vj(max)}$                           | $I_{DM}$  | $V_{GS} = 18\text{ V}$                         |                       | 189    | A    |
| Gate-source voltage, max. transient voltage <sup>1)</sup>                    | $V_{GS}$  | $t_p \leq 0.5\text{ }\mu\text{s}$ , $D < 0.01$ |                       | -10/23 | V    |
| Gate-source voltage, max. static voltage                                     | $V_{GS}$  |                                                |                       | -7/20  | V    |
| Power dissipation, limited by $T_{vj(max)}$                                  | $P_{tot}$ |                                                | $T_c = 25\text{ °C}$  | 576    | W    |
|                                                                              |           |                                                | $T_c = 100\text{ °C}$ | 288    |      |

1) **Important note:** The selection of positive and negative gate-source voltages impacts the long-term behavior of the device. The design guidelines described in Application Note AN2018-09 must be considered to ensure sound operation of the device over the planned lifetime.

**Table 3** Recommended values

| Parameter                         | Symbol        | Note or test condition | Values  | Unit |
|-----------------------------------|---------------|------------------------|---------|------|
| Recommended turn-on gate voltage  | $V_{GS(on)}$  |                        | 15...18 | V    |
| Recommended turn-off gate voltage | $V_{GS(off)}$ |                        | -5...0  | V    |

**Table 4** Characteristic values

| Parameter                        | Symbol       | Note or test condition                                                                                                                                                                                                       |                                                          | Values |      |      | Unit |
|----------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------|------|------|------|
|                                  |              |                                                                                                                                                                                                                              |                                                          | Min.   | Typ. | Max. |      |
| Drain-source on-state resistance | $R_{DS(on)}$ | $I_D = 40\text{ A}$                                                                                                                                                                                                          | $T_{vj} = 25\text{ °C}$ ,<br>$V_{GS(on)} = 18\text{ V}$  |        | 24   | 33   | mΩ   |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 100\text{ °C}$ ,<br>$V_{GS(on)} = 18\text{ V}$ |        | 41   |      |      |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 175\text{ °C}$ ,<br>$V_{GS(on)} = 18\text{ V}$ |        | 72   |      |      |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 25\text{ °C}$ ,<br>$V_{GS(on)} = 15\text{ V}$  |        | 27   | 35   |      |
| Gate-source threshold voltage    | $V_{GS(th)}$ | $I_D = 24\text{ mA}$ , $V_{DS} = V_{GS}$<br>(tested after 1 ms pulse at $V_{GS} = 20\text{ V}$ )                                                                                                                             | $T_{vj} = 25\text{ °C}$                                  | 3.5    | 4.5  | 5.5  | V    |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 175\text{ °C}$                                 |        | 3.6  |      |      |
| Zero gate-voltage drain current  | $I_{DSS}$    | $V_{DS} = 2000\text{ V}$ , $V_{GS} = 0\text{ V}$                                                                                                                                                                             | $T_{vj} = 25\text{ °C}$                                  |        |      | 400  | μA   |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 175\text{ °C}$                                 |        | 10   |      |      |
| Gate leakage current             | $I_{GSS}$    | $V_{DS} = 0\text{ V}$                                                                                                                                                                                                        | $V_{GS} = 23\text{ V}$                                   |        |      | 100  | nA   |
|                                  |              |                                                                                                                                                                                                                              | $V_{GS} = -10\text{ V}$                                  |        |      | -100 |      |
| Forward transconductance         | $g_{fs}$     | $I_D = 40\text{ A}$ , $V_{DS} = 20\text{ V}$                                                                                                                                                                                 |                                                          |        | 20   |      | S    |
| Internal gate resistance         | $R_{G,int}$  | $f = 100\text{ kHz}$ , $V_{AC} = 25\text{ mV}$                                                                                                                                                                               |                                                          |        | 6    |      | Ω    |
| Input capacitance                | $C_{iss}$    | $V_{DD} = 1200\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 100\text{ kHz}$ ,<br>$V_{AC} = 25\text{ mV}$                                                                                                                         |                                                          |        | 4850 |      | pF   |
| Output capacitance               | $C_{oss}$    | $V_{DD} = 1200\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 100\text{ kHz}$ ,<br>$V_{AC} = 25\text{ mV}$                                                                                                                         |                                                          |        | 161  |      | pF   |
| Reverse transfer capacitance     | $C_{rss}$    | $V_{DD} = 1200\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 100\text{ kHz}$ ,<br>$V_{AC} = 25\text{ mV}$                                                                                                                         |                                                          |        | 11   |      | pF   |
| $C_{oss}$ stored energy          | $E_{oss}$    | $V_{DD} = 1200\text{ V}$ , $V_{GS} = 0\text{ V}$ , $f = 100\text{ kHz}$ ,<br>$V_{AC} = 25\text{ mV}$                                                                                                                         |                                                          |        | 109  |      | μJ   |
| Total gate charge                | $Q_G$        | $V_{DD} = 1200\text{ V}$ , $I_D = 40\text{ A}$ , $V_{GS} = -2/18\text{ V}$ , turn-on pulse                                                                                                                                   |                                                          |        | 137  |      | nC   |
| Plateau gate charge              | $Q_{GS(pl)}$ | $V_{DD} = 1200\text{ V}$ , $I_D = 40\text{ A}$ , $V_{GS} = -2/18\text{ V}$ , turn-on pulse                                                                                                                                   |                                                          |        | 38   |      | nC   |
| Gate-to-drain charge             | $Q_{GD}$     | $V_{DD} = 1200\text{ V}$ , $I_D = 40\text{ A}$ , $V_{GS} = -2/18\text{ V}$ , turn-on pulse                                                                                                                                   |                                                          |        | 22   |      | nC   |
| Turn-on delay time               | $t_{d(on)}$  | $V_{DD} = 1200\text{ V}$ , $I_D = 40\text{ A}$ ,<br>$V_{GS} = -2/18\text{ V}$ ,<br>$R_{GS(on)} = 2\text{ Ω}$ ,<br>$R_{GS(off)} = 2\text{ Ω}$ , $L_\sigma = 15\text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2\text{ V}$ | $T_{vj} = 25\text{ °C}$                                  |        | 19   |      | ns   |
|                                  |              |                                                                                                                                                                                                                              | $T_{vj} = 175\text{ °C}$                                 |        | 23   |      |      |

(table continues...)

**Table 4** (continued) Characteristic values

| Parameter                    | Symbol       | Note or test condition                                                                                                                                                                                                        | Values                                |      |      | Unit             |
|------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------|------|------------------|
|                              |              |                                                                                                                                                                                                                               | Min.                                  | Typ. | Max. |                  |
| Rise time                    | $t_r$        | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 11   |      | ns               |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 14   |      |                  |
| Turn-off delay time          | $t_{d(off)}$ | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 40   |      | ns               |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 58   |      |                  |
| Fall time                    | $t_f$        | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 16   |      | ns               |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 18   |      |                  |
| Turn-on energy               | $E_{on}$     | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 1150 |      | $\mu\text{J}$    |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 2140 |      |                  |
| Turn-off energy              | $E_{off}$    | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 400  |      | $\mu\text{J}$    |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 435  |      |                  |
| Total switching energy       | $E_{tot}$    | $V_{DD} = 1200 \text{ V}$ , $I_D = 40 \text{ A}$ ,<br>$V_{GS} = -2/18 \text{ V}$ ,<br>$R_{GS(on)} = 2 \Omega$ ,<br>$R_{GS(off)} = 2 \Omega$ , $L_\sigma = 15 \text{ nH}$ ,<br>diode: body diode at<br>$V_{GS} = -2 \text{ V}$ | $T_{vj} = 25 \text{ }^\circ\text{C}$  | 2100 |      | $\mu\text{J}$    |
|                              |              |                                                                                                                                                                                                                               | $T_{vj} = 175 \text{ }^\circ\text{C}$ | 3675 |      |                  |
| Virtual junction temperature | $T_{vj}$     |                                                                                                                                                                                                                               | -55                                   |      | 175  | $^\circ\text{C}$ |

**Note:** The chip technology was characterized up to  $100 \text{ kV}/\mu\text{s}$ . The measured  $dV/dt$  was limited by measurement test setup and package.

Dynamic test circuit see Fig. F.

### 3 Body diode (MOSFET)

**Table 5** Maximum rated values

| Parameter                                                                         | Symbol    | Note or test condition     |                       | Values | Unit |
|-----------------------------------------------------------------------------------|-----------|----------------------------|-----------------------|--------|------|
| Drain-source voltage                                                              | $V_{DSS}$ | $T_{vj} \geq 25\text{ °C}$ |                       | 2000   | V    |
| Continuous reverse drain current for $R_{th(j-c,max)}$ , limited by $T_{vj(max)}$ | $I_{SDC}$ | $V_{GS} = 0\text{ V}$      | $T_c = 25\text{ °C}$  | 91     | A    |
|                                                                                   |           |                            | $T_c = 100\text{ °C}$ | 69     |      |
| Peak reverse drain current, $t_p$ limited by $T_{vj(max)}$                        | $I_{SM}$  | $V_{GS} = 0\text{ V}$      |                       | 128    | A    |

**Table 6** Characteristic values

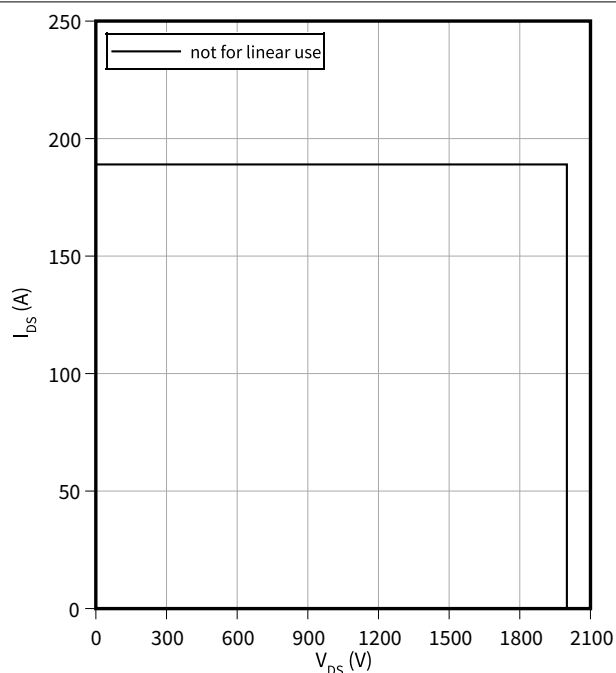
| Parameter                            | Symbol    | Note or test condition                                                                                                                               |                          | Values |      |      | Unit               |
|--------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------|------|------|--------------------|
|                                      |           |                                                                                                                                                      |                          | Min.   | Typ. | Max. |                    |
| Drain-source reverse voltage         | $V_{SD}$  | $I_{SD} = 40\text{ A}$ , $V_{GS} = 0\text{ V}$                                                                                                       | $T_{vj} = 25\text{ °C}$  |        | 3.7  | 5.5  | V                  |
|                                      |           |                                                                                                                                                      | $T_{vj} = 100\text{ °C}$ |        | 3.6  |      |                    |
|                                      |           |                                                                                                                                                      | $T_{vj} = 175\text{ °C}$ |        | 3.5  |      |                    |
| MOSFET forward recovery charge       | $Q_{fr}$  | $V_{DD} = 1200\text{ V}$ , $I_{SD} = 40\text{ A}$ , $V_{GS} = -2\text{ V}$ , $R_{GS(on)} = 2\text{ }\Omega$ , $Q_{fr}$ includes also $Q_C$           | $T_{vj} = 25\text{ °C}$  |        | 1000 |      | nC                 |
|                                      |           |                                                                                                                                                      | $T_{vj} = 175\text{ °C}$ |        | 1975 |      |                    |
| MOSFET peak forward recovery current | $I_{frm}$ | $V_{DD} = 1200\text{ V}$ , $I_{SD} = 40\text{ A}$ , $V_{GS} = -2\text{ V}$ , $di_{SD}/dt = 1500\text{ A}/\mu\text{s}$ , $Q_{fr}$ includes also $Q_C$ | $T_{vj} = 25\text{ °C}$  |        | 27   |      | A                  |
|                                      |           |                                                                                                                                                      | $T_{vj} = 175\text{ °C}$ |        | 32   |      |                    |
| MOSFET forward recovery energy       | $E_{fr}$  | $V_{DD} = 1200\text{ V}$ , $I_{SD} = 40\text{ A}$ , $V_{GS} = -2\text{ V}$ , $R_{GS(on)} = 2\text{ }\Omega$ , $Q_{fr}$ includes also $Q_C$           | $T_{vj} = 25\text{ °C}$  |        | 550  |      | $\mu\text{J}$      |
|                                      |           |                                                                                                                                                      | $T_{vj} = 175\text{ °C}$ |        | 1100 |      |                    |
| Virtual junction temperature         | $T_{vj}$  |                                                                                                                                                      |                          | -55    |      | 175  | $^{\circ}\text{C}$ |

## 4 Characteristics diagrams

### Reverse bias safe operating area (RBSOA)

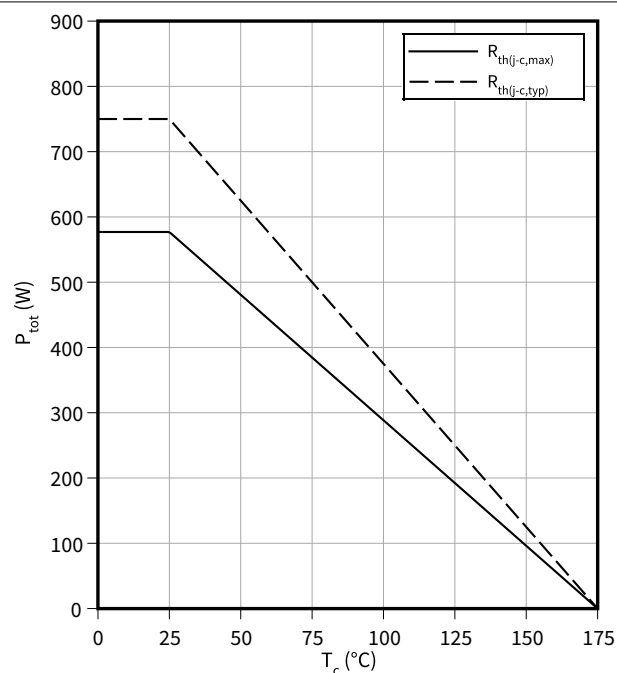
$$I_{DS} = f(V_{DS})$$

$$T_{vj} \leq 175\text{ °C}, V_{GS} = 0/18\text{ V}, T_c = 25\text{ °C}$$



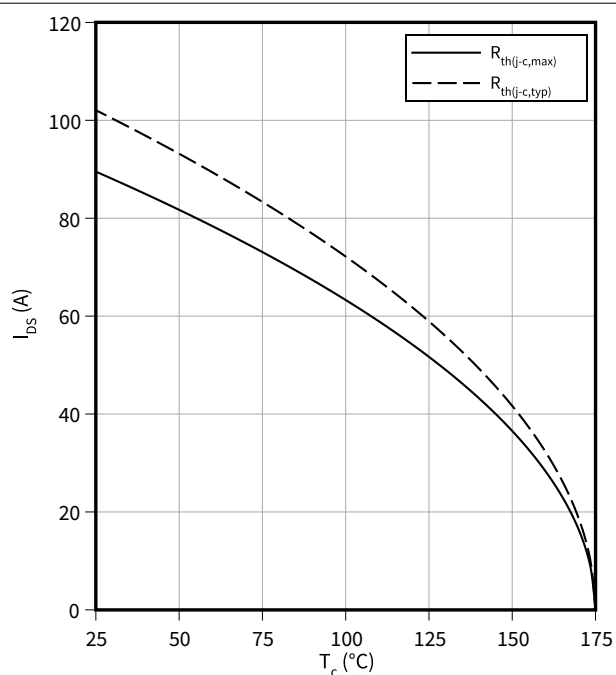
### Power dissipation as a function of case temperature limited by bond wire

$$P_{tot} = f(T_c)$$



### Maximum DC drain to source current as a function of case temperature limited by bond wire

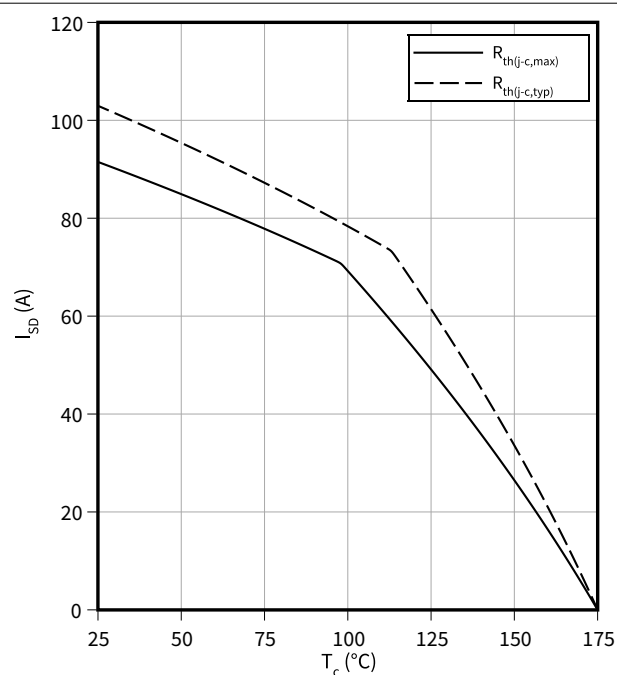
$$I_{DS} = f(T_c)$$



### Maximum source to drain current as a function of case temperature limited by bond wire

$$I_{SD} = f(T_c)$$

$$V_{GS} = 0\text{ V}$$

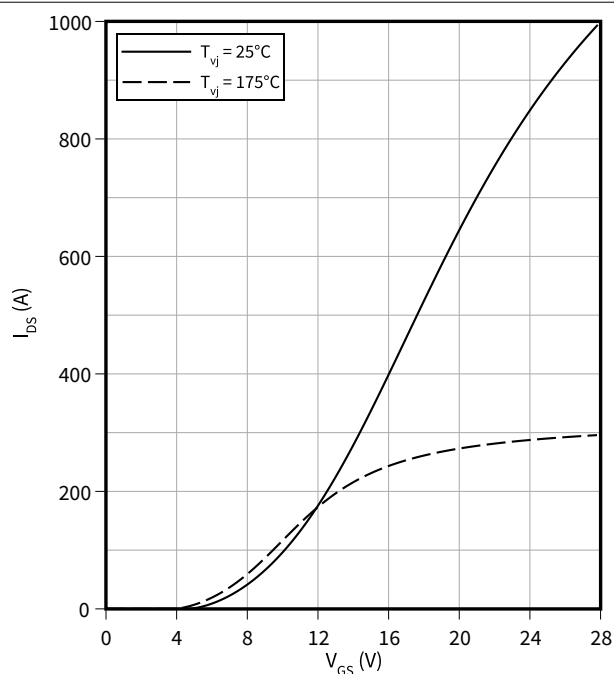


4 Characteristics diagrams

**Typical transfer characteristic**

$$I_{DS} = f(V_{GS})$$

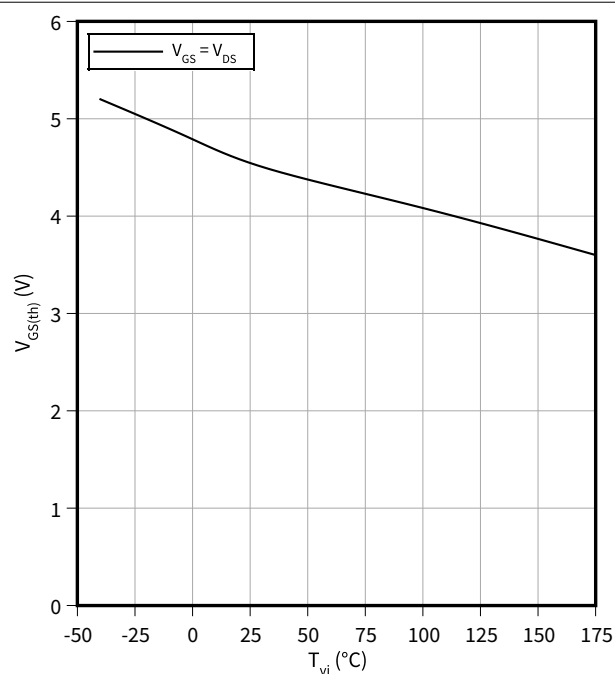
$$V_{DS} = 20 \text{ V}, t_p = 20 \mu\text{s}$$



**Typical gate-source threshold voltage as a function of junction temperature**

$$V_{GS(th)} = f(T_{vj})$$

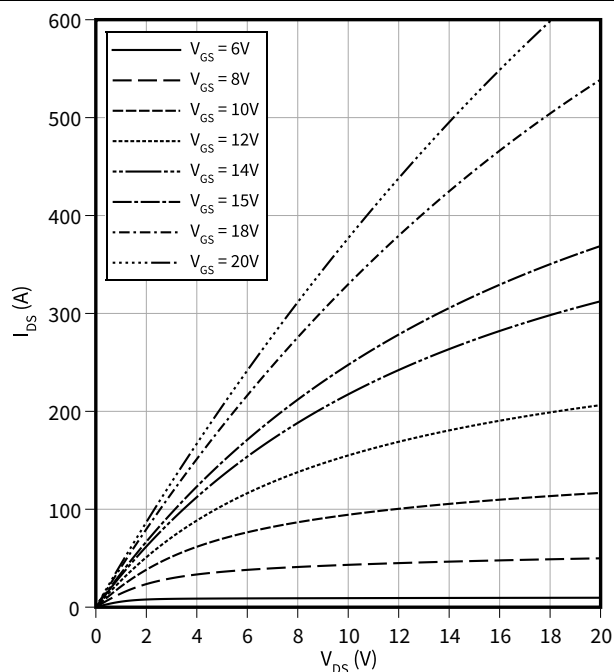
$$I_D = 24 \text{ mA}$$



**Typical output characteristic,  $V_{GS}$  as parameter**

$$I_{DS} = f(V_{DS})$$

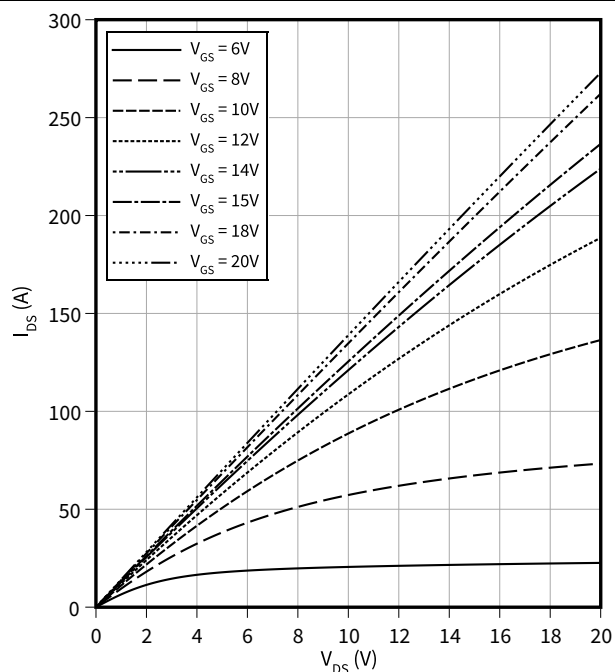
$$T_{vj} = 25^\circ\text{C}, t_p = 20 \mu\text{s}$$



**Typical output characteristic,  $V_{GS}$  as parameter**

$$I_{DS} = f(V_{DS})$$

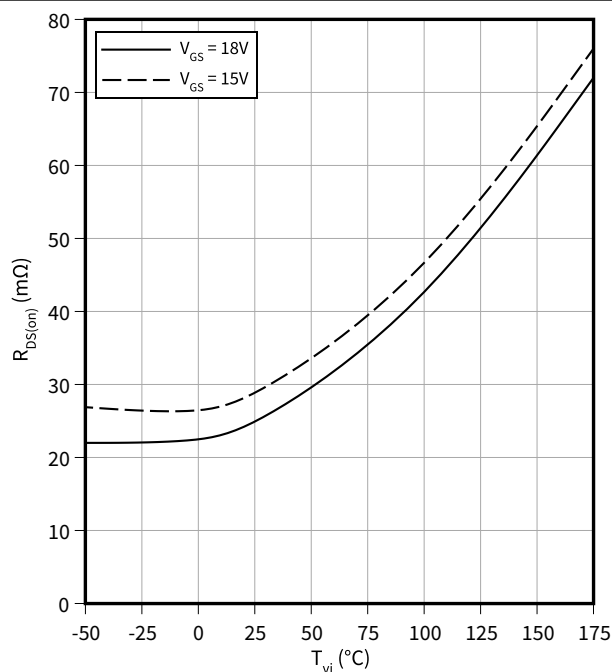
$$T_{vj} = 175^\circ\text{C}, t_p = 20 \mu\text{s}$$



4 Characteristics diagrams

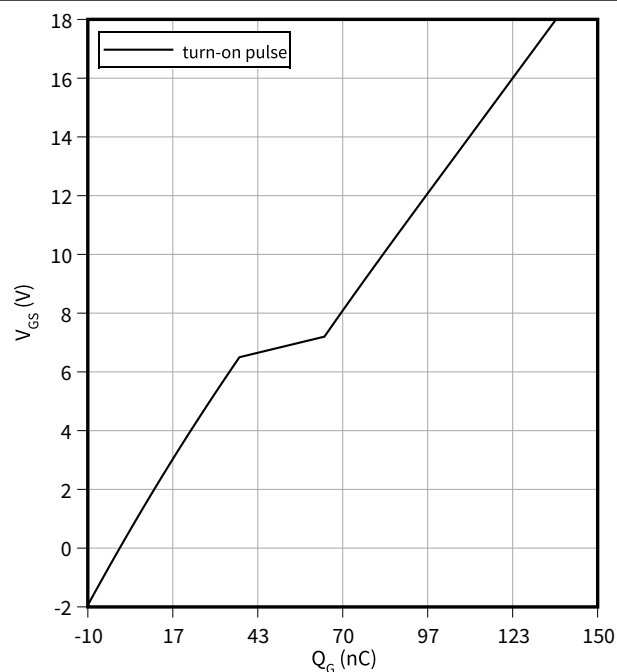
**Typical on-state resistance as a function of junction temperature**

$R_{DS(on)} = f(T_{vj})$   
 $I_D = 40\text{ A}$



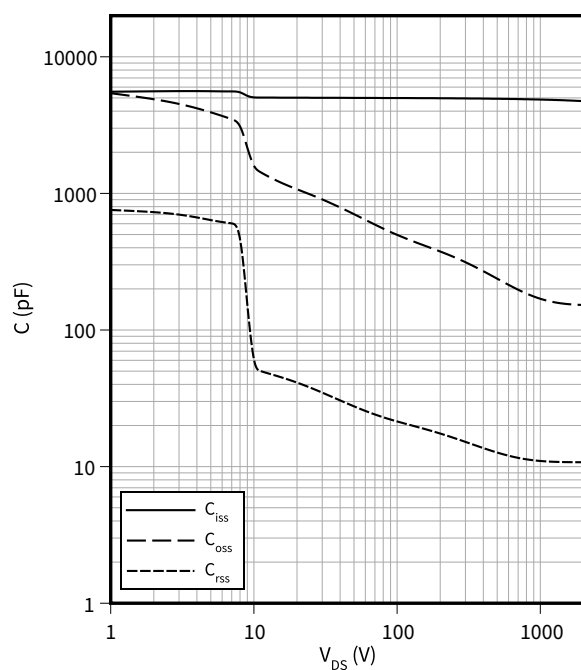
**Typical gate charge**

$V_{GS} = f(Q_G)$   
 $I_D = 40\text{ A}, V_{DS} = 1200\text{ V}$



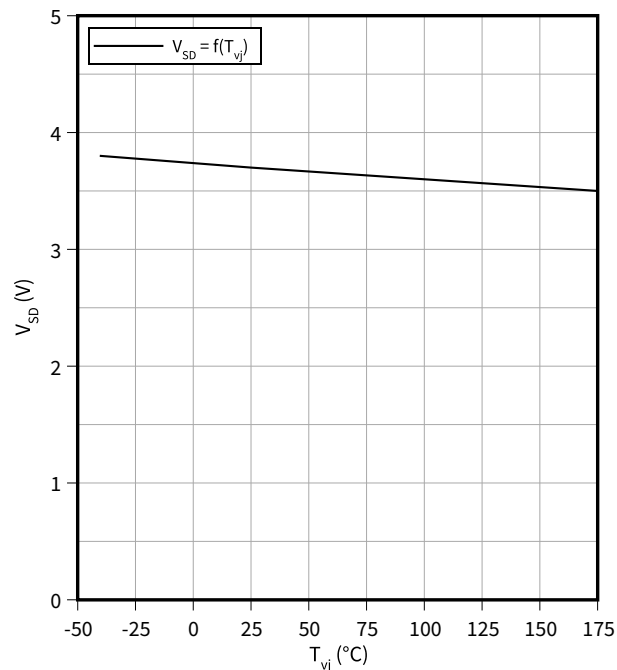
**Typical capacitance as a function of drain-source voltage**

$C = f(V_{DS})$   
 $f = 100\text{ kHz}, V_{GS} = 0\text{ V}$



**Typical reverse drain voltage as function of junction temperature**

$V_{SD} = f(T_{vj})$   
 $I_{SD} = 40\text{ A}, V_{GS} = 0\text{ V}$

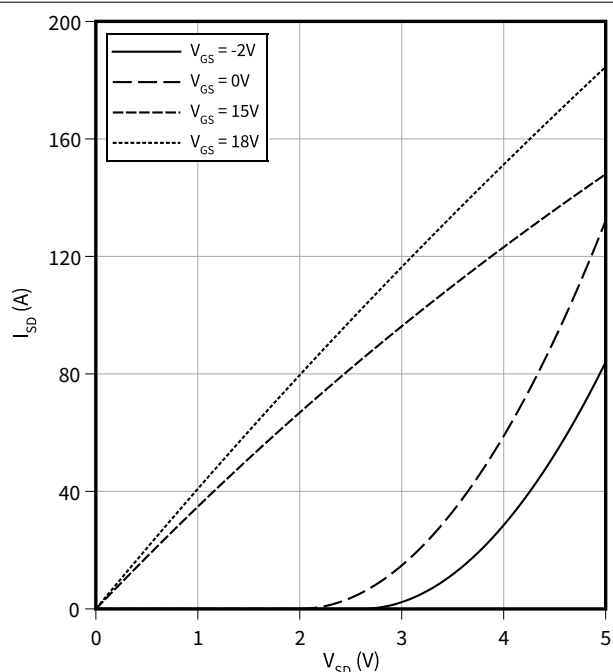


4 Characteristics diagrams

Typical reverse drain current as function of reverse drain voltage,  $V_{GS}$  as parameter

$$I_{SD} = f(V_{SD})$$

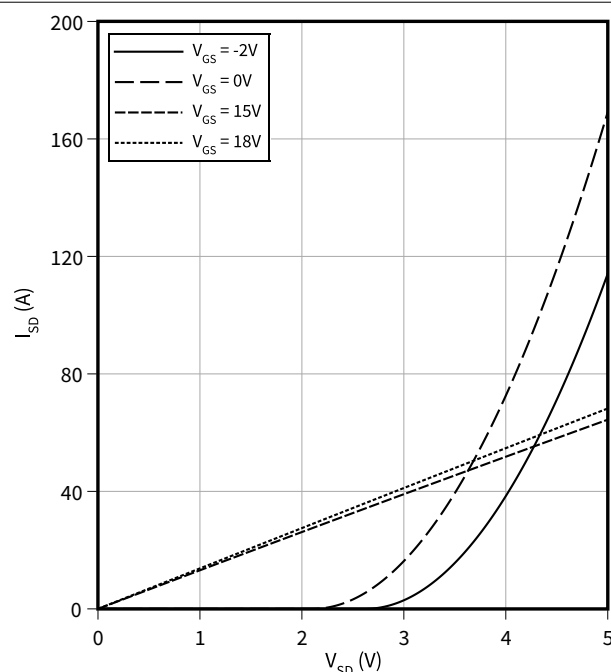
$T_{vj} = 25\text{ °C}$ ,  $t_p = 20\text{ }\mu\text{s}$



Typical reverse drain current as function of reverse drain voltage,  $V_{GS}$  as parameter

$$I_{SD} = f(V_{SD})$$

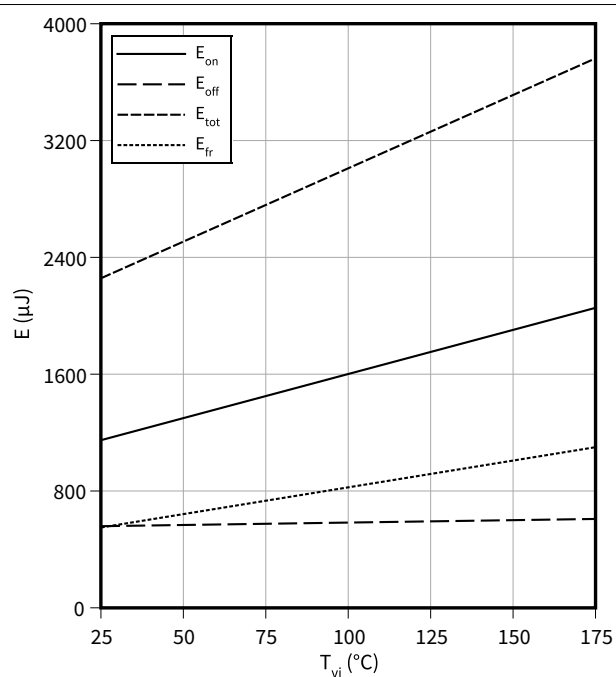
$T_{vj} = 175\text{ °C}$ ,  $t_p = 20\text{ }\mu\text{s}$



Typical switching energy as a function of junction temperature, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2\text{ V}$

$$E = f(T_{vj})$$

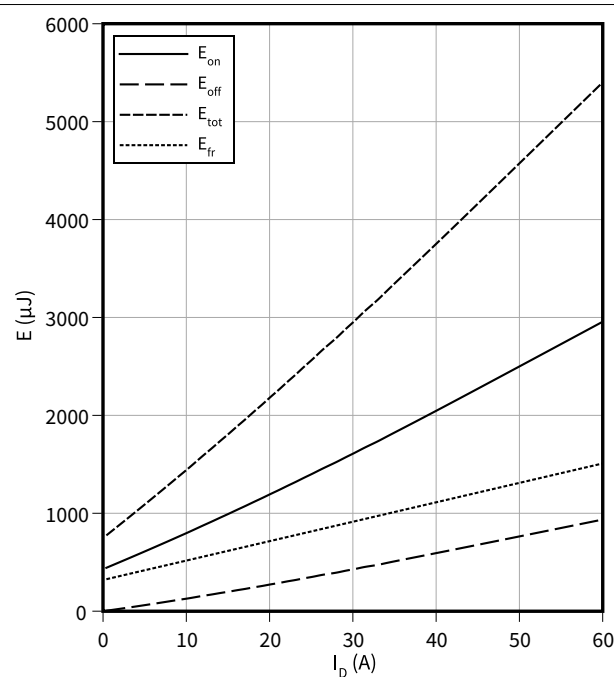
$V_{GS} = -2/18\text{ V}$ ,  $I_D = 40\text{ A}$ ,  $R_{G,ext} = 2\text{ }\Omega$ ,  $V_{DD} = 1200\text{ V}$



Typical switching energy as a function of drain current, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2\text{ V}$

$$E = f(I_D)$$

$V_{GS} = -2/18\text{ V}$ ,  $T_{vj} = 175\text{ °C}$ ,  $R_{G,ext} = 2\text{ }\Omega$ ,  $V_{DD} = 1200\text{ V}$

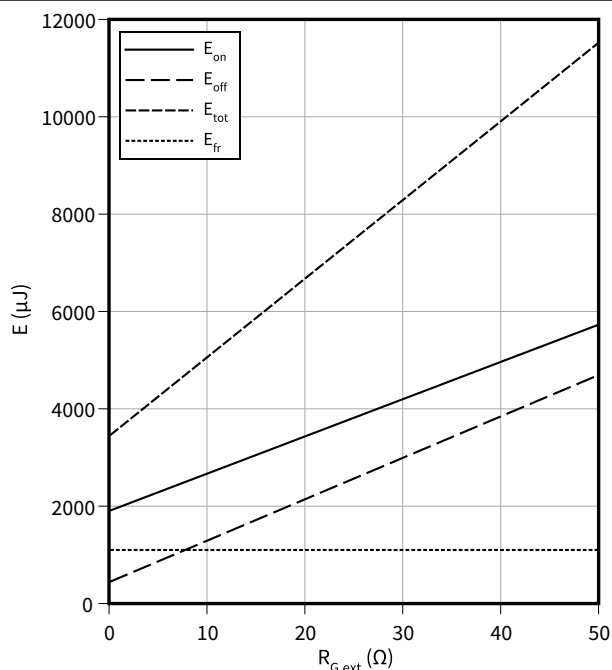


4 Characteristics diagrams

**Typical switching energy losses as a function of gate resistance, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2$  V**

$$E = f(R_{G,ext})$$

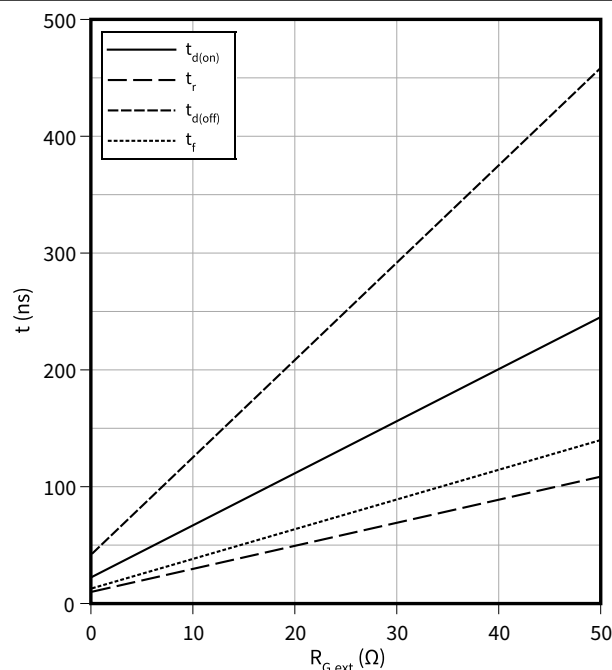
$V_{GS} = -2/18$  V,  $I_D = 40$  A,  $T_{vj} = 175$  °C,  $V_{DD} = 1200$  V



**Typical switching times as a function of gate resistance, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2$  V**

$$t = f(R_{G,ext})$$

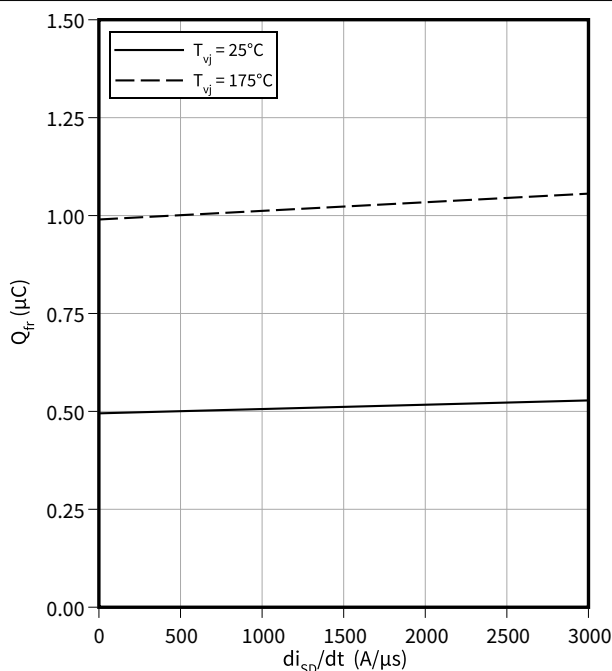
$I_D = 40$  A,  $T_{vj} = 175$  °C,  $V_{GS} = -2/18$  V,  $V_{DD} = 1200$  V



**Typical reverse recovery charge as a function of reverse drain current slope, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2$  V**

$$Q_{fr} = f(di_{SD}/dt)$$

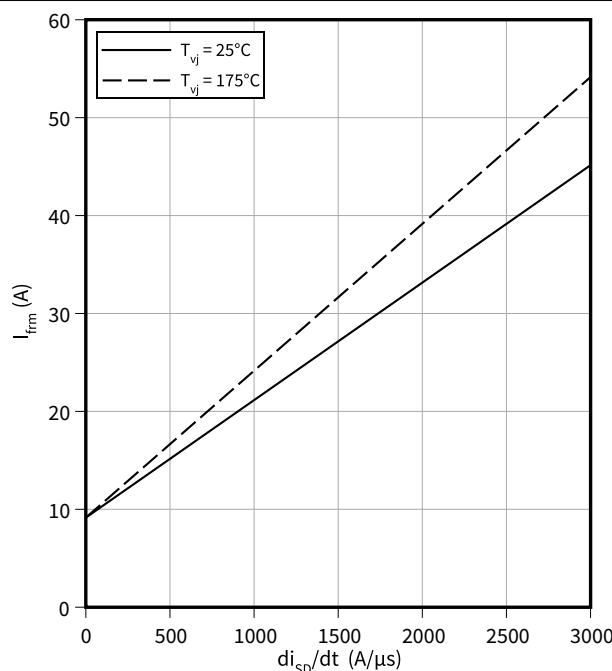
$V_{GS} = -2/18$  V,  $I_{SD} = 40$  A,  $V_{DD} = 1200$  V



**Typical reverse recovery current as a function of reverse drain current slope, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -2$  V**

$$I_{frm} = f(di_{SD}/dt)$$

$V_{GS} = -2/18$  V,  $I_{SD} = 40$  A,  $V_{DD} = 1200$  V

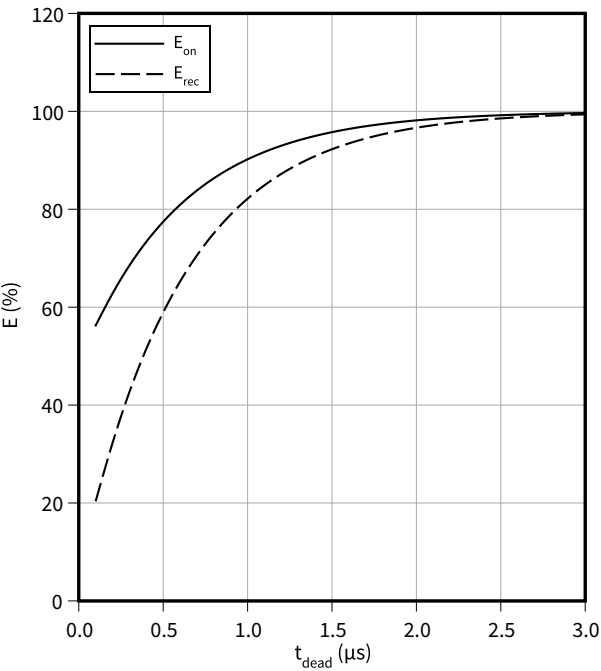


4 Characteristics diagrams

Typical switching energy losses as a function of dead time / blanking time, test circuit in Fig. F, 2nd device own body diode:  $V_{GS} = -5\text{ V}$

$E = f(t_{dead})$

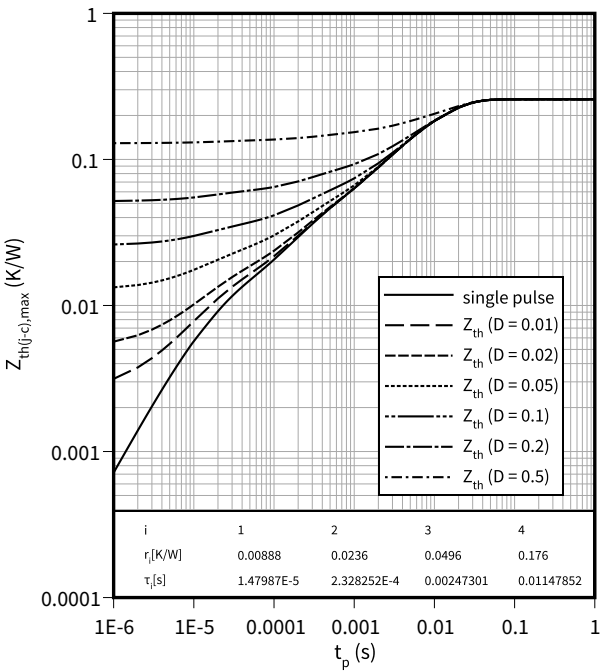
$I_D = 40\text{ A}$ ,  $T_{vj} = 175\text{ °C}$ ,  $R_{G,ext} = 2\text{ }\Omega$ ,  $V_{DD} = 1200\text{ V}$



Max. transient thermal impedance (MOSFET/diode)

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

$D = t_p/T$



5 Package outlines

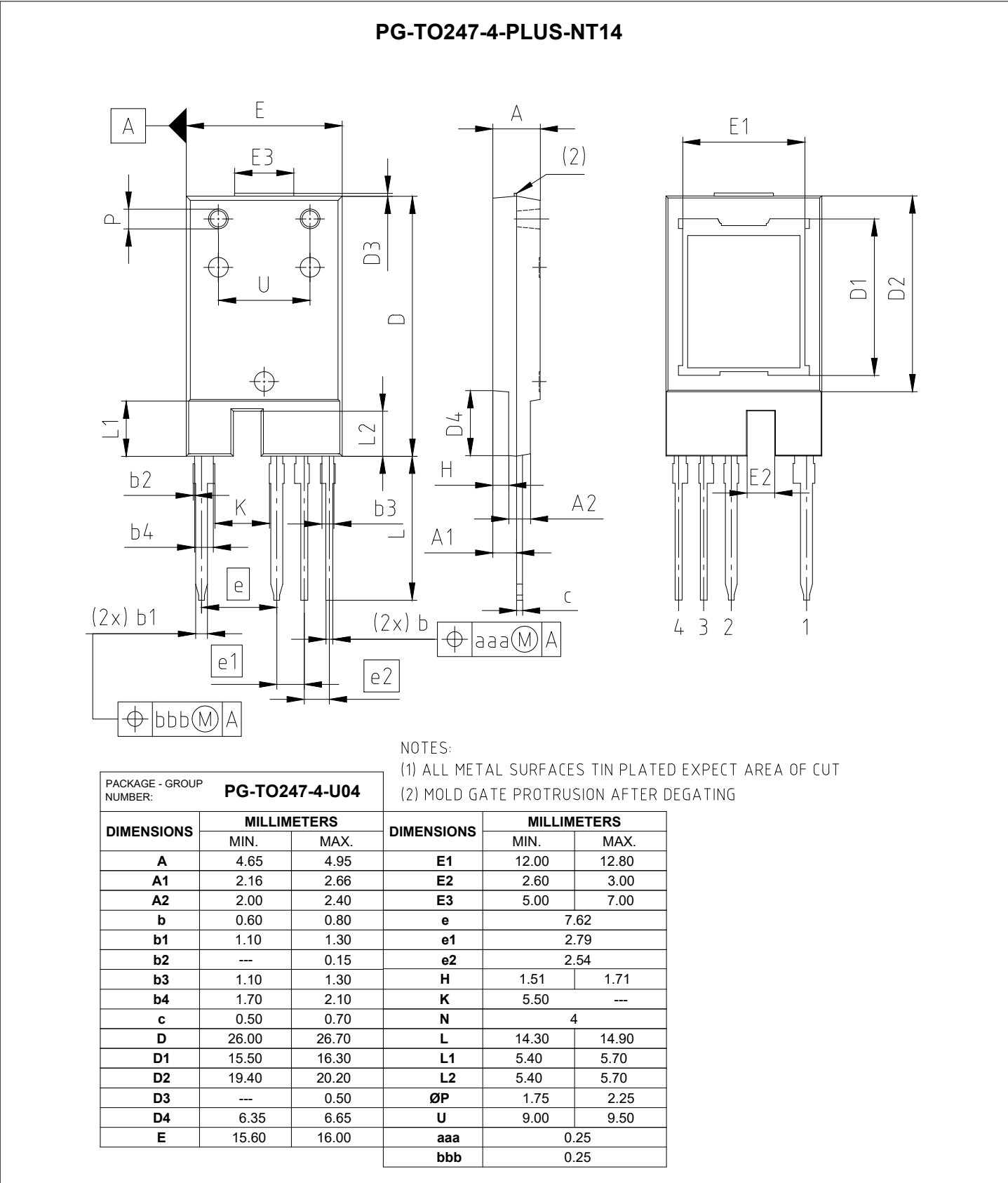


Figure 1

## 6 Testing conditions

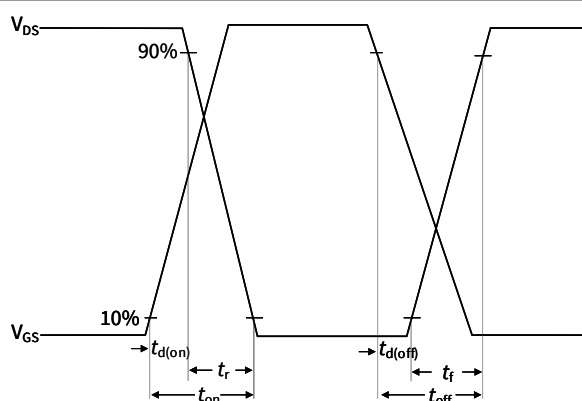


Figure A. Definition of switching times

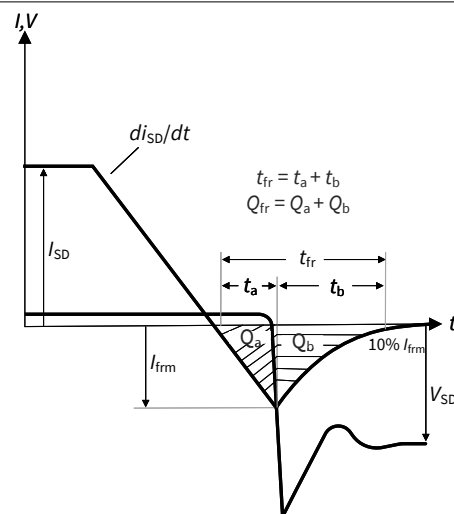


Figure B. Definition of body diode switching characteristics

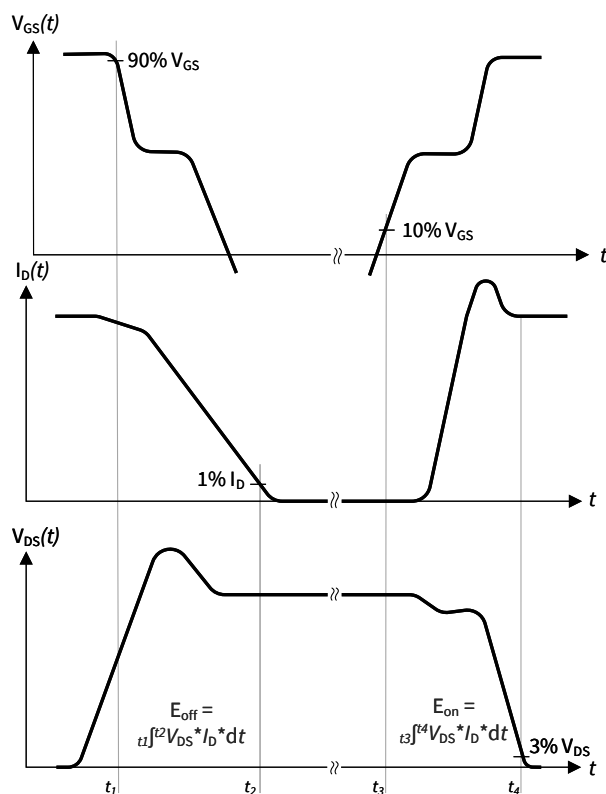


Figure C. Definition of switching losses

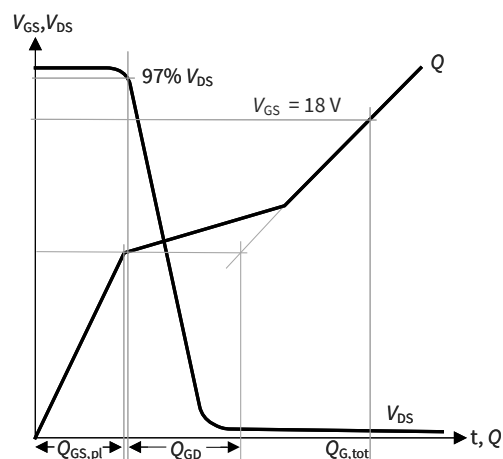


Figure D. Definition of QGD

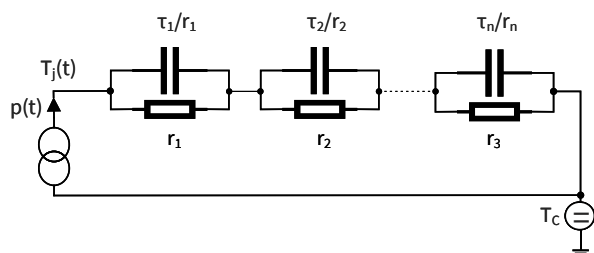


Figure E. Thermal equivalent circuit

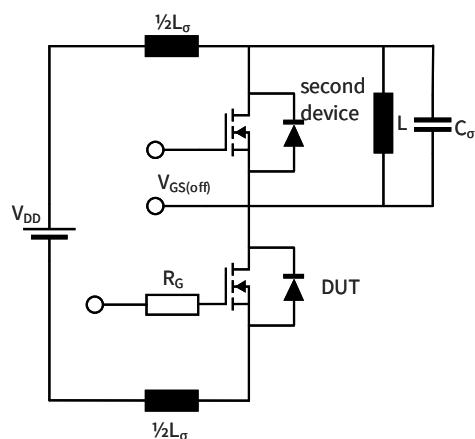


Figure F. Dynamic test circuit

Parasitic inductance  $L_{\sigma}$ ,  
Parasitic capacitor  $C_{\sigma}$ ,

## Revision history

| Document revision | Date of release | Description of changes                                                                           |
|-------------------|-----------------|--------------------------------------------------------------------------------------------------|
| 0.10              | 2022-03-08      | Preliminary datasheet                                                                            |
| 1.00              | 2022-10-04      | Final datasheet                                                                                  |
| 1.01              | 2022-10-06      | Editorial changes                                                                                |
| 1.10              | 2023-01-16      | Change of picture on page 1<br>Change of product outline drawing on page 13<br>Editorial changes |

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**Email:** [erratum@infineon.com](mailto:erratum@infineon.com)

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