

### Absolute maximum ratings

(Ta=25°C)

| Symbol                | Ratings   | Unit |
|-----------------------|---|------|
| V <sub>DSS</sub>      | 100   | V    |
| V <sub>GSS</sub>      | ±20   | V    |
| I <sub>D</sub>        | ±10   | A    |
| I <sub>D(pulse)</sub> | ±40 (PW≤1ms)  | A    |
| E <sub>AS</sub> *     | 200   | mJ   |
| P <sub>T</sub>        | 5 (Ta=25°C, with all circuits operating, without heatsink)        | W    |
|                       | 40 (Tc=25°C, with all circuits operating, with infinite heatsink) | W    |
| θ <sub>j-a</sub>      | 25 (Junction-Air, Ta=25°C, with all circuits operating)           | °C/W |
| θ <sub>j-c</sub>      | 3.13 (Junction-Case, Tc=25°C, with all circuits operating)        | °C/W |
| V <sub>ISO</sub>      | 1000 (Between fin and lead pin, AC)                               | Vrms |
| T <sub>ch</sub>       | 150   | °C   |
| T <sub>stg</sub>      | -40 to +150   | °C   |

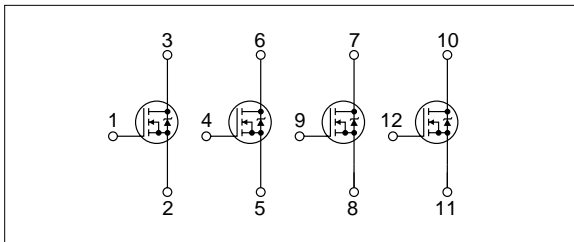
\* : V<sub>DD</sub>=25V, L=3mH, I<sub>D</sub>=10A, unclamped, R<sub>G</sub>=50Ω, see Fig. E on page 15.

### Electrical characteristics

(Ta=25°C)

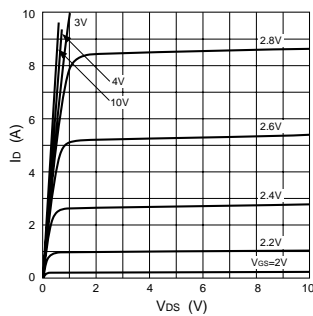
| Symbol               | Specifications |      |      | Unit | Conditions  |
|----------------------|----------------|------|------|------|---|
|                      | min            | typ  | max  |      |   |
| V <sub>(BR)DSS</sub> | 100            |      |      | V    | I <sub>D</sub> =100μA, V <sub>GS</sub> =0V  |
| I <sub>GSS</sub>     |                |      | ±100 | nA   | V <sub>GS</sub> =±20V   |
| I <sub>DSS</sub>     |                |      | 100  | μA   | V <sub>DS</sub> =100V, V <sub>GS</sub> =0V  |
| V <sub>TH</sub>      | 1.0            |      | 2.0  | V    | V <sub>DS</sub> =10V, I <sub>D</sub> =250μA   |
| Re(yfs)              | 8              | 13   |      | S    | V <sub>DS</sub> =10V, I <sub>D</sub> =5A  |
| R <sub>DS(ON)</sub>  |                | 60   | 80   | mΩ   | V <sub>GS</sub> =10V, I <sub>D</sub> =5A  |
|                      |                | 75   | 95   | mΩ   | V <sub>GS</sub> =4V, I <sub>D</sub> =5A   |
| C <sub>iss</sub>     |                | 1630 |      | pF   | V <sub>DS</sub> =10V, f=1.0MHz,<br>V <sub>GS</sub> =0V  |
| C <sub>oss</sub>     |                | 480  |      | pF   |   |
| td(on)               |                | 30   |      | ns   | I <sub>D</sub> =5A,<br>V <sub>DD</sub> ≅50V,<br>R <sub>L</sub> =10Ω, V <sub>GS</sub> =5V,<br>see Fig. 3 on page 16. |
| tr                   |                | 45   |      | ns   |   |
| td(off)              |                | 100  |      | ns   |   |
| tf                   |                | 40   |      | ns   |   |
| V <sub>SD</sub>      | 1.1            | 1.5  |      | V    |   |
| trr                  |                | 300  |      | ns   | I <sub>SD</sub> =±100mA   |

### Equivalent circuit diagram

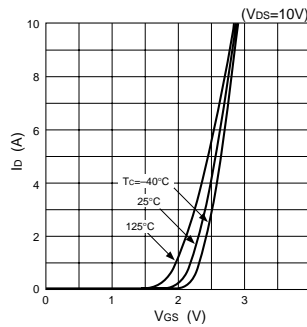


### Characteristic curves

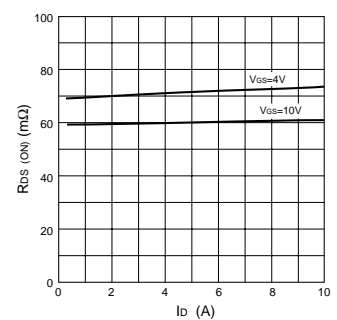
I<sub>D</sub>-V<sub>DS</sub> Characteristics (Typical)



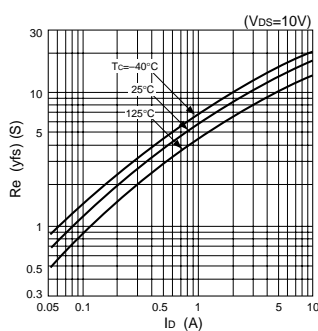
I<sub>D</sub>-V<sub>GS</sub> Characteristics (Typical)



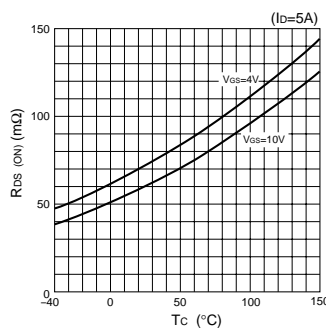
R<sub>DS(ON)</sub>-I<sub>D</sub> Characteristics (Typical)



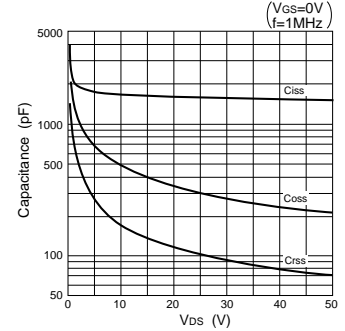
Re(yfs)-I<sub>D</sub> Characteristics (Typical)



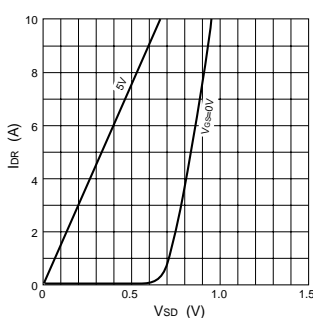
R<sub>DS(ON)</sub>-T<sub>C</sub> Characteristics (Typical)



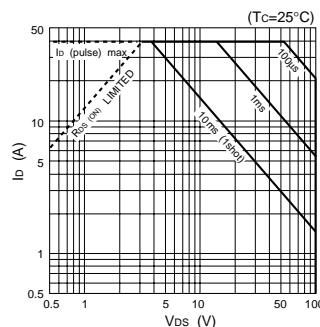
Capacitance-V<sub>DS</sub> Characteristics (Typical)



I<sub>DR</sub>-V<sub>SD</sub> Characteristics (Typical)



Safe Operating Area (SOA)



P<sub>T</sub>-T<sub>a</sub> Characteristics

