

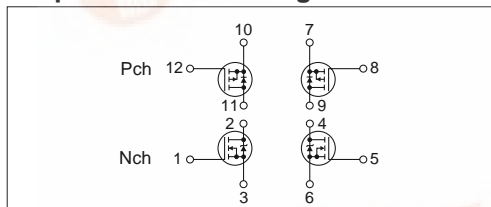
## Absolute maximum ratings

(Ta=25°C)

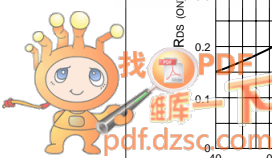
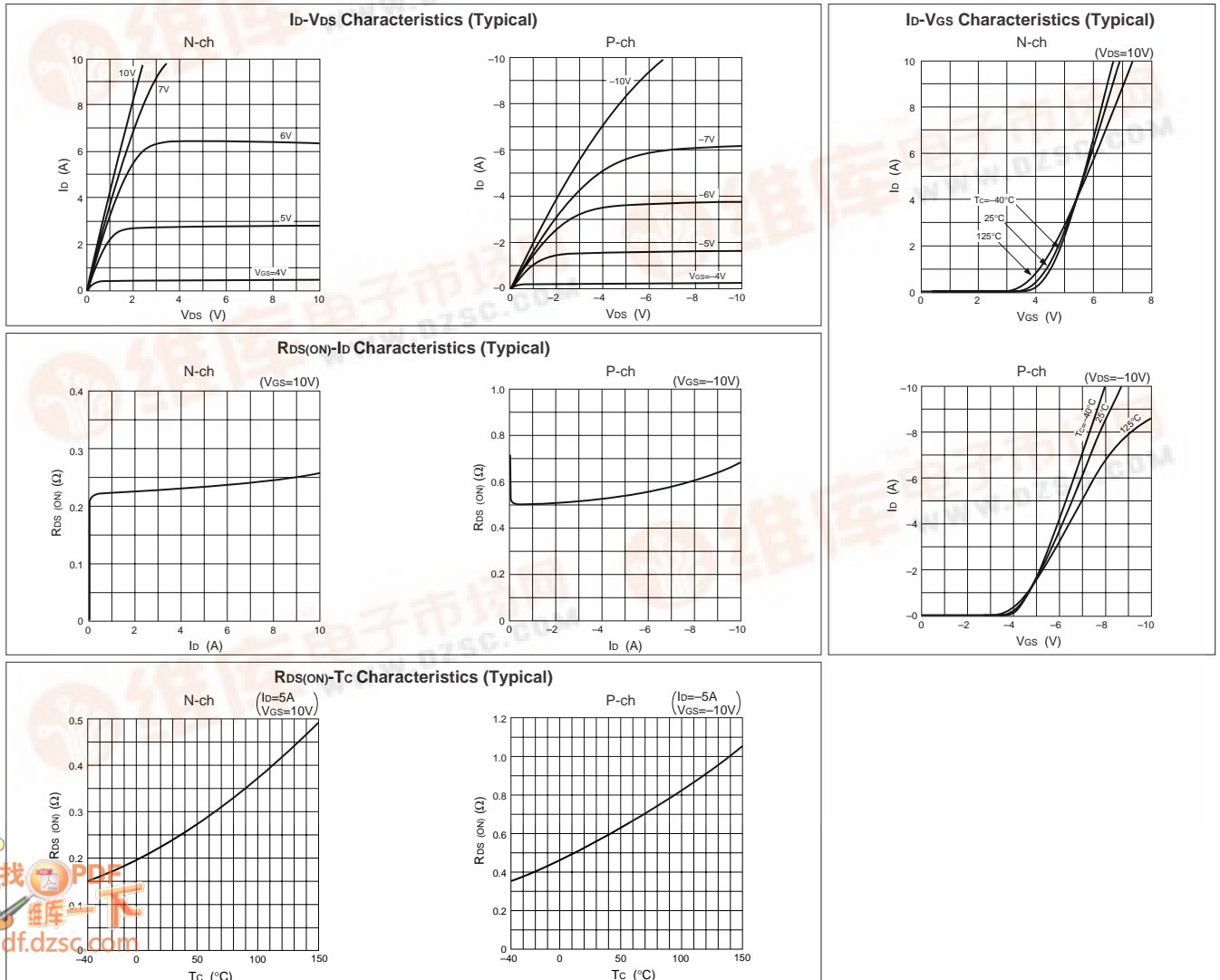
| Symbol                | Ratings  |              | Unit             |
|-----------------------|--|--------------|------------------|
|                       | N channel  | P channel    |                  |
| V <sub>DS</sub>       | 100  | -100         | V                |
| V <sub>GS</sub>       | ±20  | ∓20          | V                |
| I <sub>D</sub>        | ±5   | ∓5           | A                |
| I <sub>D(pulse)</sub> | ±10 (PW≤1ms)   | ∓10 (PW≤1ms) | A                |
| E <sub>AS</sub> *     | 30   | —            | mJ               |
| P <sub>T</sub>        | 5 (Ta=25°C, with all circuits operating, without heatsink)               |              | W                |
|                       | 35 (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>      | 3.57 (with all circuits operating, Tc=25°C, with all circuits operating) |              | °C/W             |
| V <sub>ISO</sub>      | 1000 (Between fin and lead pin, AC)                                      |              | V <sub>rms</sub> |
| T <sub>ch</sub>       | 150  |              | °C               |
| T <sub>stg</sub>      | -40 to +150  |              | °C               |

\* : V<sub>DD</sub>=20V, L=10mH, I<sub>D</sub>=2.5A, unclamped, see Fig. E on page 15.

## Equivalent circuit diagram



## Characteristic curves



## Electrical characteristics

( $T_a=25^\circ\text{C}$ )

| Symbol        | N channel     |      |           |               |   | P channel     |      |           |               |   |
|---------------|---------------|------|-----------|---------------|---|---------------|------|-----------|---------------|---|
|               | Specification |      |           | Unit          | Conditions  | Specification |      |           | Unit          | Conditions  |
|               | min           | typ  | max       |               |   | min           | typ  | max       |               |   |
| $V_{(BR)DSS}$ | 100           |      |           | V             | $I_D=250\mu\text{A}, V_{GS}=0\text{V}$                      | -100          |      |           | V             | $I_D=-250\mu\text{A}, V_{GS}=0\text{V}$                       |
| $I_{GSS}$     |               |      | $\pm 500$ | nA            | $V_{GS}=\pm 20\text{V}$                                     |               |      | $\mp 500$ | nA            | $V_{GS}=\mp 20\text{V}$                                       |
| $I_{DSS}$     |               |      | 250       | $\mu\text{A}$ | $V_{DS}=100\text{V}, V_{GS}=0\text{V}$                      |               |      | -250      | $\mu\text{A}$ | $V_{DS}=-100\text{V}, V_{GS}=0\text{V}$                       |
| $V_{TH}$      | 2.0           |      | 4.0       | V             | $V_{DS}=10\text{V}, I_D=250\mu\text{A}$                     | -2.0          |      | -4.0      | V             | $V_{DS}=-10\text{V}, I_D=-250\mu\text{A}$                     |
| $Re(y_{fs})$  | 2.4           | 3.7  |           | S             | $V_{DS}=10\text{V}, I_D=5\text{A}$                          | 0.9           | 2.0  |           | S             | $V_{DS}=-10\text{V}, I_D=-5\text{A}$                          |
| $R_{DS(ON)}$  |               | 0.27 | 0.30      | $\Omega$      | $V_{GS}=10\text{V}, I_D=5\text{A}$                          |               | 0.55 | 0.7       | $\Omega$      | $V_{GS}=-10\text{V}, I_D=-5\text{A}$                          |
| $C_{iss}$     |               | 350  |           | pF            | $V_{DS}=25\text{V}, f=1.0\text{MHz}$ ,                      |               | 300  |           | pF            | $V_{DS}=-25\text{V}, f=1.0\text{MHz}$ ,                       |
| $C_{oss}$     |               | 130  |           | pF            | $V_{GS}=0\text{V}$  |               | 200  |           | pF            | $V_{GS}=0\text{V}$  |
| $t_{on}$      |               | 60   |           | ns            | $I_D=5\text{A}, V_{DD}=\pm 50\text{V}, V_{GS}=10\text{V}$ , |               | 150  |           | ns            | $I_D=-5\text{A}, V_{DD}=\pm 50\text{V}, V_{GS}=-10\text{V}$ , |
| $t_{off}$     |               | 40   |           | ns            | see Fig. 3 on page 16.                                      |               | 200  |           | ns            | see Fig. 4 on page 16.  |
| $V_{SD}$      |               | 1.1  | 1.8       | V             | $I_{SD}=5\text{A}, V_{GS}=0\text{V}$                        |               | -4.5 | -5.5      | V             | $I_{SD}=-5\text{A}, V_{GS}=0\text{V}$                         |
| $t_{rr}$      |               | 330  |           | ns            | $I_{SD}=\pm 100\text{mA}$                                   |               | 220  |           | ns            | $I_{SD}=\mp 100\text{mA}$                                     |

## Characteristic curves

