

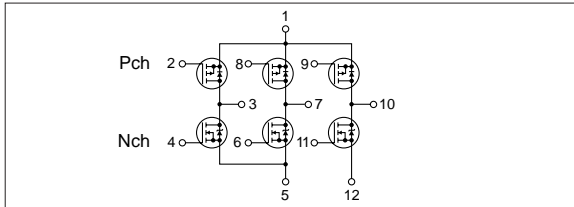
### Absolute maximum ratings

(Ta=25°C)

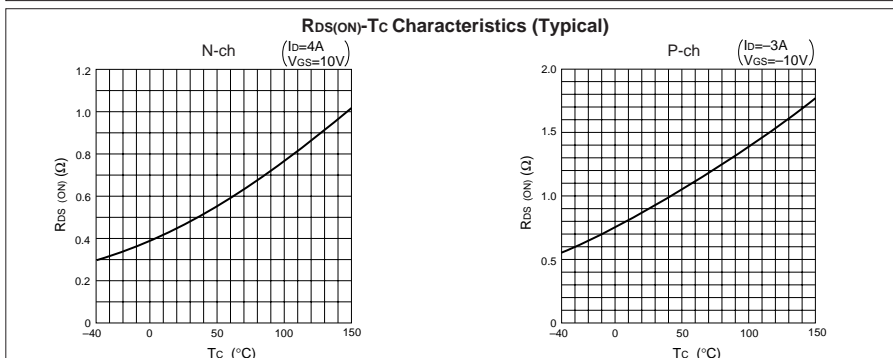
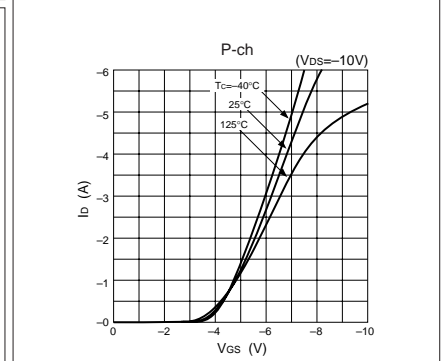
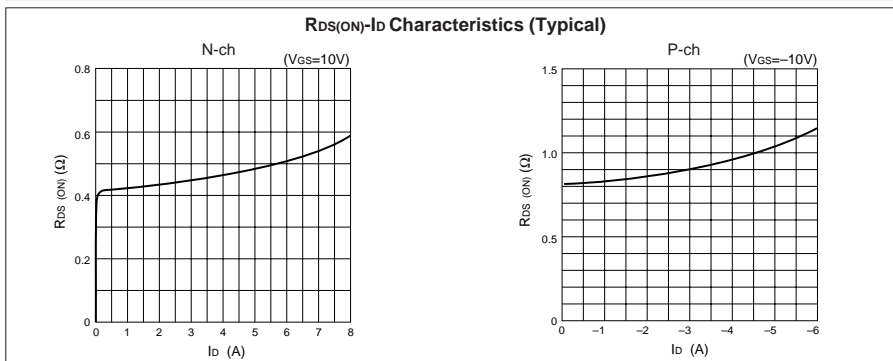
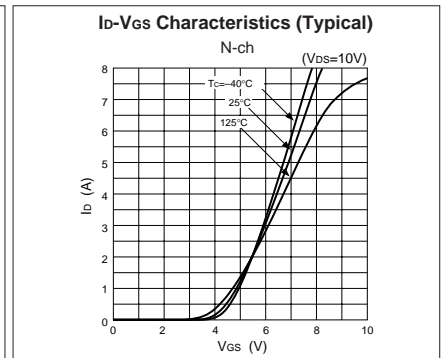
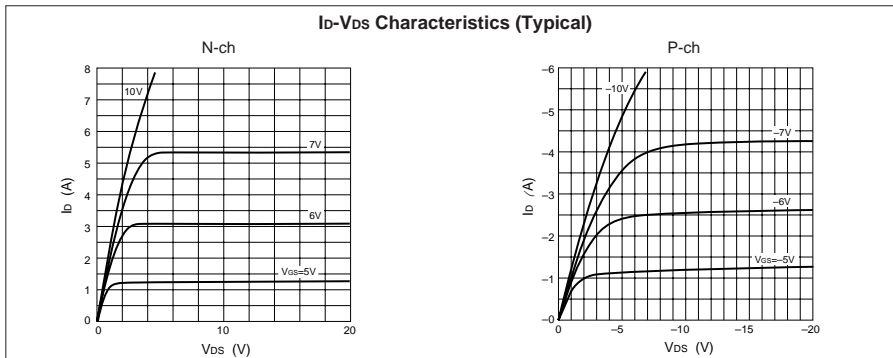
| Symbol                | Ratings   |             | Unit             |
|-----------------------|---|-------------|------------------|
|                       | N channel   | P channel   |                  |
| V <sub>DSS</sub>      | 100   | -100        | V                |
| V <sub>GSS</sub>      | ±20   | ∓20         | V                |
| I <sub>D</sub>        | ±4  | ∓3          | A                |
| I <sub>D(pulse)</sub> | ±8 (PW≤1ms)   | ∓6 (PW≤1ms) | A                |
| E <sub>AS</sub> *     | 16  | —           | 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 (Junction-Case, 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=1mH, I<sub>D</sub>=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             | $V_{DS}=-10\text{V}$ , $I_D=-250\mu\text{A}$                     |
| $R_{e(yfs)}$  | 1.1           | 1.7  |           | S             | $V_{DS}=10\text{V}$ , $I_D=4\text{A}$                           | 0.7           | 1.1  |           | S             | $V_{DS}=-10\text{V}$ , $I_D=-3\text{A}$                          |
| $R_{DS(ON)}$  |               | 0.50 | 0.60      | $\Omega$      | $V_{GS}=10\text{V}$ , $I_D=4\text{A}$                           |               | 1.1  | 1.3       | $\Omega$      | $V_{GS}=-10\text{V}$ , $I_D=-3\text{A}$                          |
| $C_{iss}$     |               | 180  |           | pF            | $V_{DS}=25\text{V}$ , $f=1.0\text{MHz}$ ,<br>$V_{GS}=0\text{V}$ |               | 180  |           | pF            | $V_{DS}=-25\text{V}$ , $f=1.0\text{MHz}$ ,<br>$V_{GS}=0\text{V}$ |
| $C_{oss}$     |               | 82   |           | pF            |   |               | 85   |           | pF            |  |
| $t_{on}$      |               | 40   |           | ns            | $I_D=4\text{A}$ , $V_{DD}=50\text{V}$ , $V_{GS}=10\text{V}$ ,   |               | 90   |           | ns            | $I_D=-3\text{A}$ , $V_{DD}=-50\text{V}$ , $V_{GS}=-10\text{V}$ , |
| $t_{off}$     |               | 40   |           | ns            | see Fig. 3 on page 16.  |               | 80   |           | ns            | see Fig. 4 on page 16.   |
| $V_{SD}$      |               | 1.2  | 2.0       | V             | $I_{SD}=4\text{A}$ , $V_{GS}=0\text{V}$                         |               | -4.0 | -5.5      | V             | $I_{SD}=-3\text{A}$  |
| $t_{rr}$      |               | 250  |           | ns            | $I_{SD}=\pm 100\text{mA}$                                       |               | 250  |           | ns            | $I_{SD}=\mp 100\text{mA}$  |

## Characteristic curves

