

# 2SK2764-01R

FUJI POWER MOSFET

## N-CHANNEL SILICON POWER MOSFET

### FAP-2S Series

#### Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- Avalanche-proof

#### Applications

- Switching regulators
- UPS (Uninterruptible Power Supply)
- DC-DC converters

#### Maximum ratings and characteristic Absolute maximum ratings

(Tc=25°C unless otherwise specified)

| Item                                    | Symbol                              | Ratings             | Unit     |
|---|-------------------------------------|---------------------|----------|
| Drain-source voltage                    | V <sub>DS</sub>                     | 800                 | V        |
| Continuous drain current                | I <sub>D</sub>                      | ±4                  | A        |
| Pulsed drain current                    | I <sub>D(puls)</sub>                | ±16                 | A        |
| Gate-source voltage                     | V <sub>GS</sub>                     | ±35                 | V        |
| Repetitive or non-repetitive            | IAR*2                               | 4                   | A        |
| Maximum Avalanche Energy                | EAS*1                               | 254                 | mJ       |
| Max. power dissipation                  | P <sub>D</sub>                      | 80                  | W        |
| Operating and storage temperature range | T <sub>ch</sub><br>T <sub>stg</sub> | +150<br>-55 to +150 | °C<br>°C |

\*1 L=29.1mH, V<sub>CC</sub>=80V \*2 T<sub>ch</sub>≥150°C

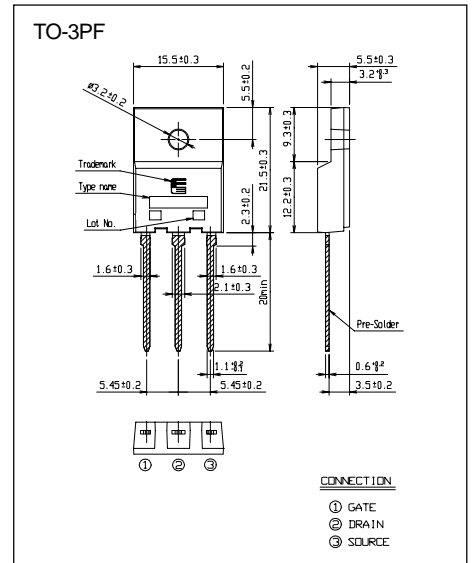
#### Electrical characteristics (Tc =25°C unless otherwise specified)

| Item                             | Symbol               | Test Conditions   | Min. | Typ. | Max. | Units |
|----------------------------------|----------------------|---|------|------|------|-------|
| Drain-source breakdown voltage   | V <sub>(BR)DSS</sub> | I <sub>D</sub> =1mA V <sub>GS</sub> =0V                                     | 800  |      |      | V     |
| Gate threshold voltage           | V <sub>GS(th)</sub>  | I <sub>D</sub> =1mA V <sub>DS</sub> =V <sub>GS</sub>                        | 3.5  | 4.0  | 4.5  | V     |
| Zero gate voltage drain current  | I <sub>DSS</sub>     | V <sub>DS</sub> =800V   |      | 10   | 500  | μA    |
|                                  |                      | V <sub>GS</sub> =0V   |      | 0.2  | 1.0  | mA    |
| Gate-source leakage current      | I <sub>GSS</sub>     | V <sub>GS</sub> =±35V V <sub>DS</sub> =0V                                   |      | 10   | 100  | nA    |
| Drain-source on-state resistance | R <sub>DS(on)</sub>  | I <sub>D</sub> =2.0A V <sub>GS</sub> =10V                                   |      | 3.19 | 4.0  | Ω     |
| Forward transconductance         | g <sub>fs</sub>      | I <sub>D</sub> =2.0A V <sub>DS</sub> =25V                                   | 1.0  | 2.0  |      | S     |
| Input capacitance                | C <sub>iss</sub>     | V <sub>DS</sub> =25V  |      | 450  | 680  | pF    |
| Output capacitance               | C <sub>oss</sub>     | V <sub>GS</sub> =0V   |      | 75   | 120  |       |
| Reverse transfer capacitance     | C <sub>rss</sub>     | f=1MHz  |      | 40   | 60   | ns    |
| Turn-on time t <sub>on</sub>     | t <sub>d(on)</sub>   | V <sub>CC</sub> =600V I <sub>D</sub> =4A                                    |      | 20   | 30   |       |
|                                  | t <sub>r</sub>       | V <sub>GS</sub> =10V  |      | 45   | 70   |       |
| Turn-off time t <sub>off</sub>   | t <sub>d(off)</sub>  | R <sub>GS</sub> =10 Ω   |      | 50   | 80   |       |
|                                  | t <sub>f</sub>       |   |      | 30   | 50   |       |
| Avalanche capability             | I <sub>AV</sub>      | L=100 μH T <sub>ch</sub> =25°C  | 4    |      |      | A     |
| Diode forward on-voltage         | V <sub>SD</sub>      | I <sub>F</sub> =2×I <sub>DR</sub> V <sub>GS</sub> =0V T <sub>ch</sub> =25°C |      | 1.0  | 1.5  | V     |
| Reverse recovery time            | t <sub>rr</sub>      | I <sub>F</sub> =I <sub>DR</sub> V <sub>GS</sub> =0V                         |      | 700  |      | ns    |
| Reverse recovery charge          | Q <sub>rr</sub>      | -di/dt=100A/μs T <sub>ch</sub> =25°C  |      | 5.0  |      | μC    |

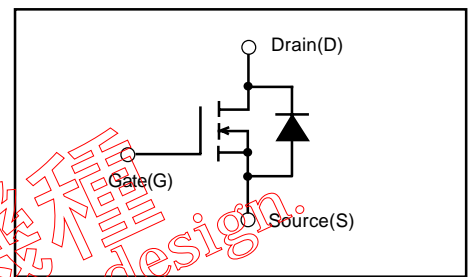
#### Thermal characteristics

| Item               | Symbol                | Test Conditions    | Min. | Typ. | Max. | Units |
|--------------------|-----------------------|--------------------|------|------|------|-------|
| Thermal resistance | R <sub>th(ch-c)</sub> | channel to case    |      |      | 1.56 | °C/W  |
|                    | R <sub>th(ch-a)</sub> | channel to ambient |      |      | 30.0 | °C/W  |

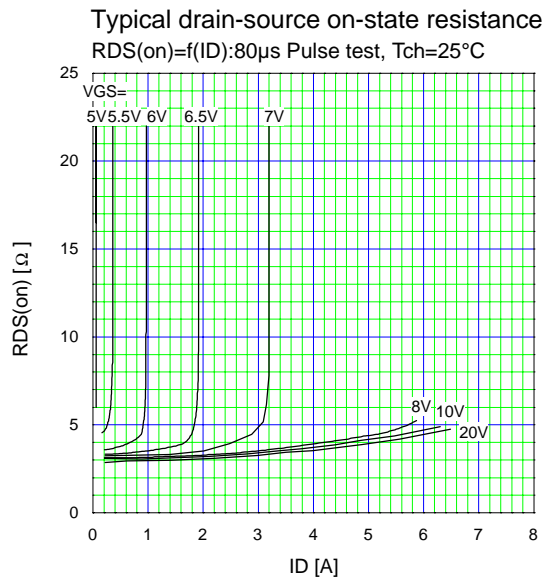
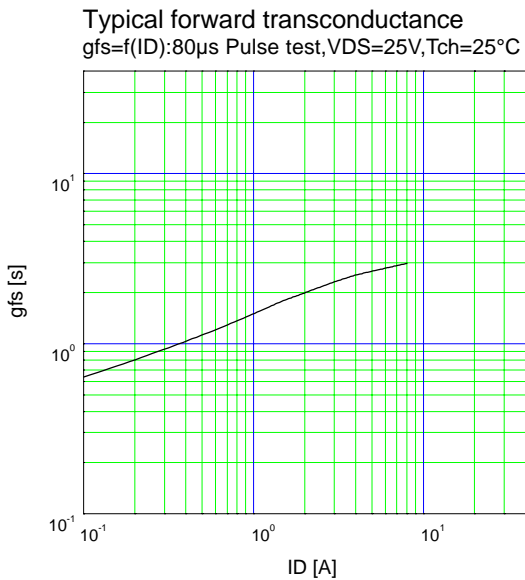
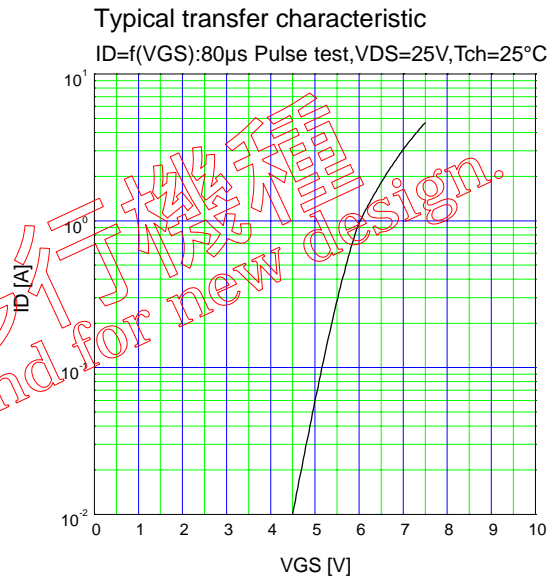
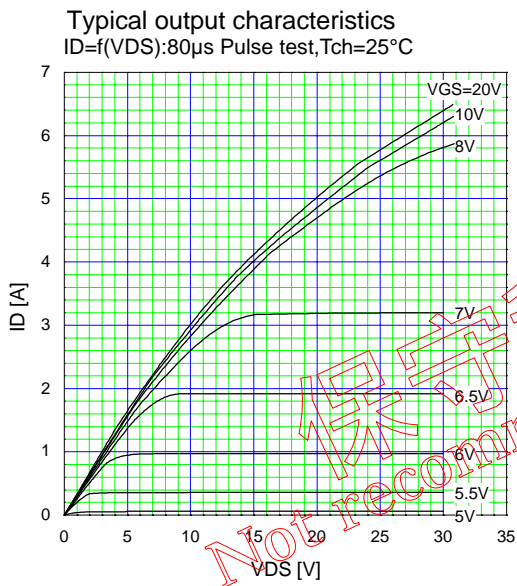
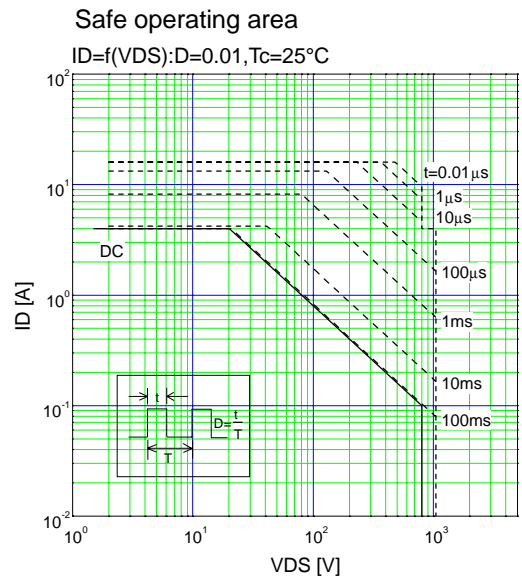
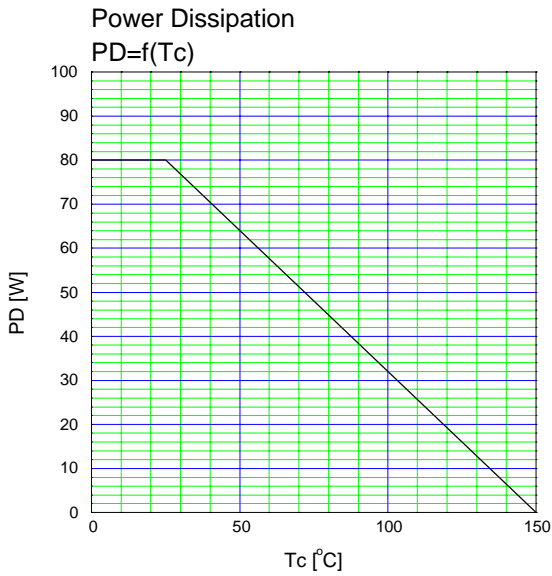
#### Outline Drawings



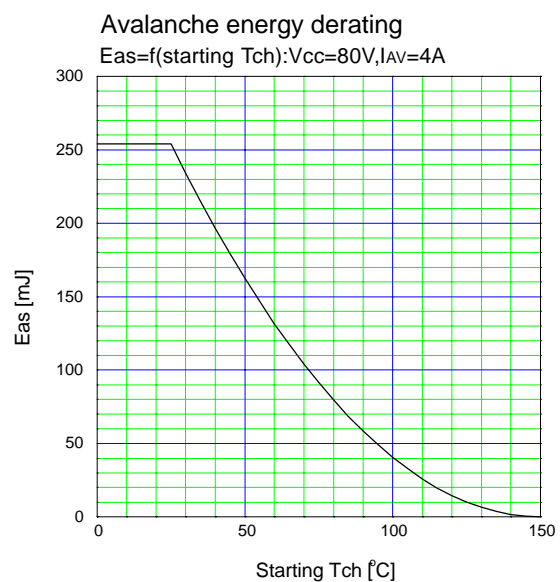
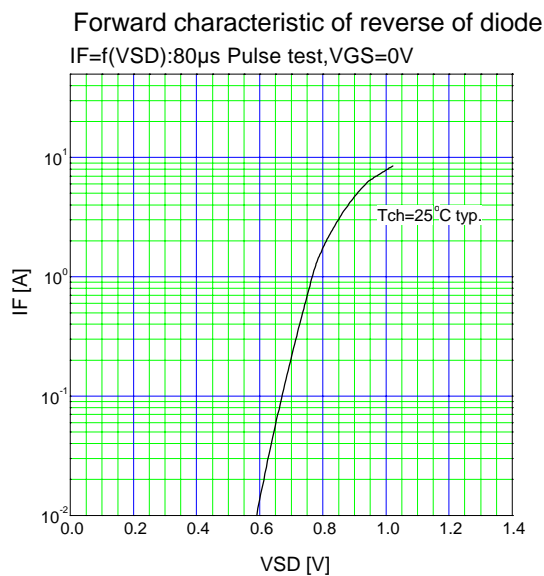
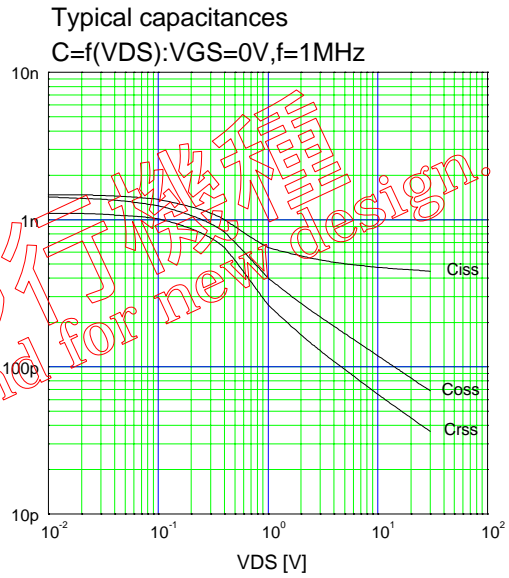
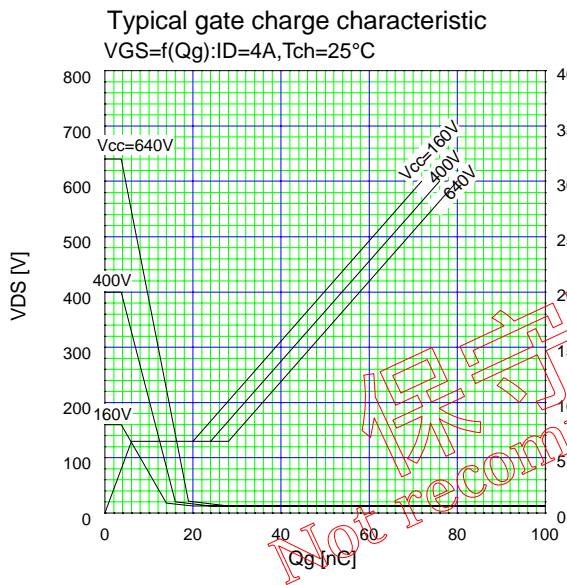
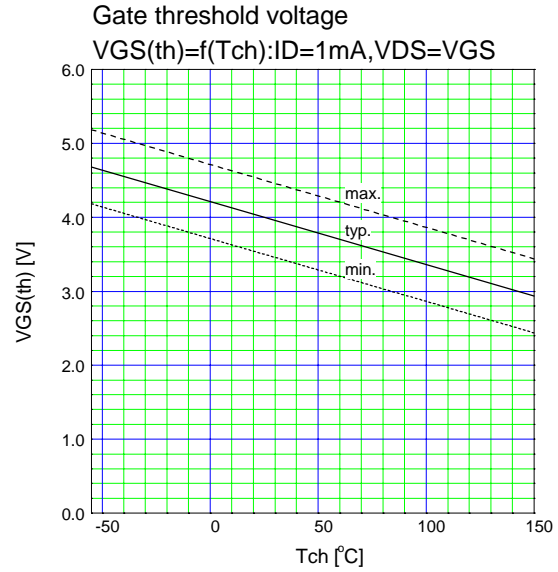
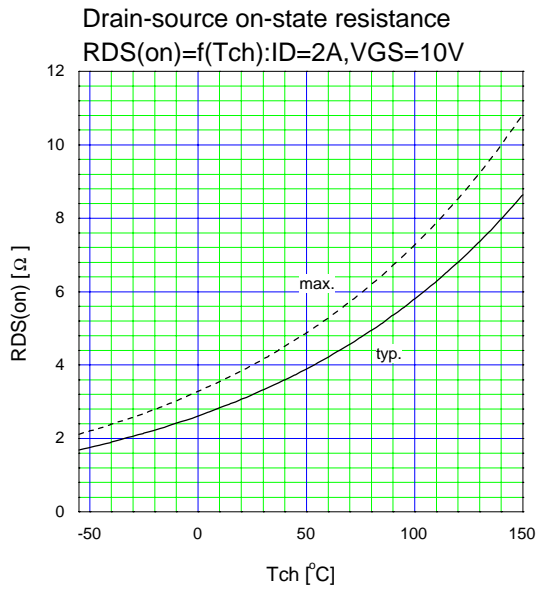
#### Equivalent circuit schematic



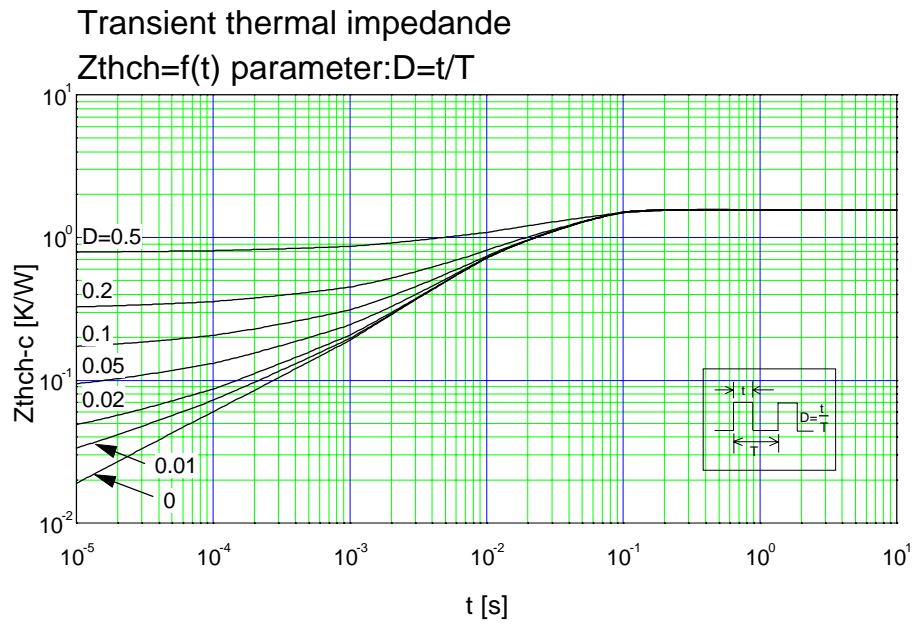
Characteristics



移住 移住 移住  
 Not recommend for new design.



富士電機株式会社  
 FUJIELECTRIC CO., LTD.  
 Not recommend for new design.



保守移行機種  
Not recommend for new design.