# 2SK2029-01L,S

FUJI POWER MOSFET

## N-CHANNEL SILICON POWER MOSFET

## FAP-IIA SERIES

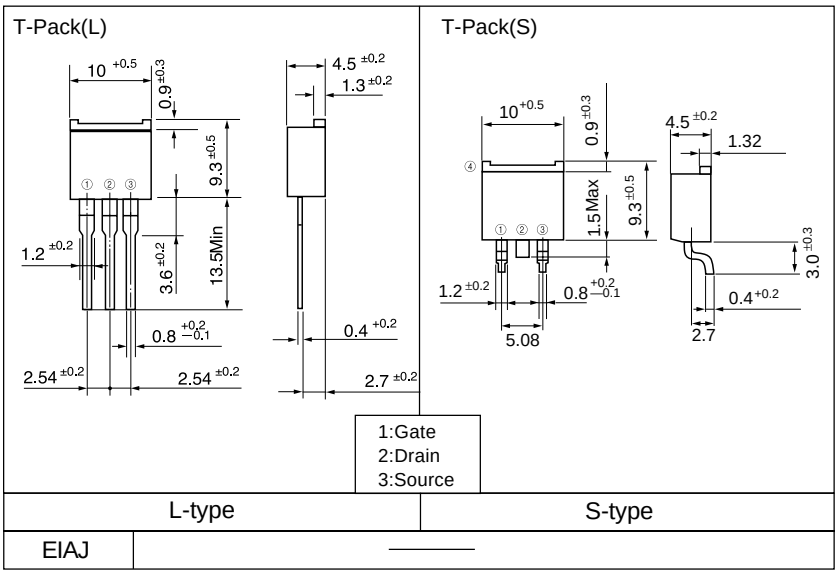
### ■ Features

- High speed switching
- Low on-resistance
- No secondary breakdown
- Low driving power
- High voltage
- $V_{GS}$=±30V Guarantee
- Avalanche-proof

### ■ Applications

- Switching regulators
- UPS
- DC-DC converters
- General purpose power amplifier

### ■ Outline Drawings

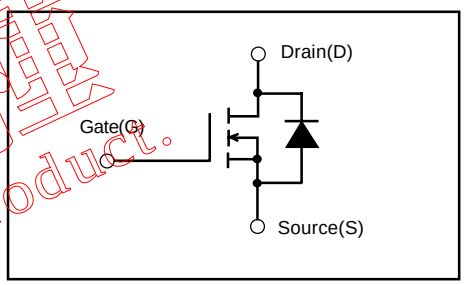



### ■ Maximum ratings and characteristics

● **Absolute maximum ratings ( Tc=25°C unless otherwise specified)**

| Item | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-source voltage | $V_{DS}$ | 900 | V |
| Continuous drain current | $I_D$ | 3 | A |
| Pulsed drain current | $I_{D(puls)}$ | 12 | A |
| Continuous reverse drain current | $I_{DR}$ | 3 | A |
| Gate-source peak voltage | $V_{GS}$ | ±30 | V |
| Max. power dissipation | $P_D$ | 60 | W |
| Operating and storage temperature range | $T_{ch}$ | +150 | °C |
| | $T_{stg}$ | -55 to +150 | °C |

### ■ Equivalent circuit schematic




Discontinued product.

● **Electrical characteristics ($T_c$ =25°C unless otherwise specified)**

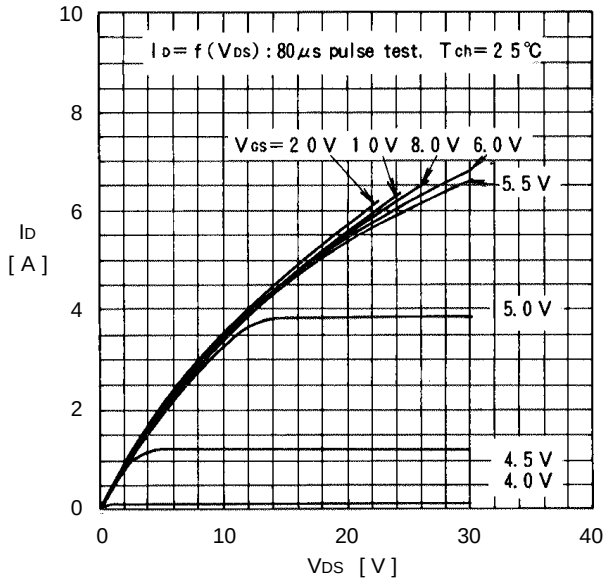
| Item | Symbol | Test Conditions | | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|---|
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $I_D$=1mA $V_{GS}$=0V | | 900 | | | V |
| Gate threshold voltage | $V_{GS(th)}$ | $I_D$=1mA $V_{DS}$=$V_{GS}$ | | 2.5 | 3.0 | 3.5 | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$=900V $V_{GS}$=0V | $T_{ch}$=25°C | | 10 | 500 | μA |
| | | | $T_{ch}$=125°C | | 0.2 | 1.0 | mA |
| Gate-source leakage current | $I_{GSS}$ | $V_{GS}$=±30V $V_{DS}$=0V | | | 10 | 100 | nA |
| Drain-source on-state resistance | $R_{DS(on)}$ | $I_D$=1.5A $V_{GS}$=10V | | | 2.5 | 4.0 | Ω |
| Forward transconductance | $g_{fs}$ | $I_D$=1.5A $V_{DS}$=25V | | 2.0 | 4.0 | | S |
| Input capacitance | $C_{iss}$ | $V_{DS}$=25V | | | 1000 | 1500 | pF |
| Output capacitance | $C_{oss}$ | $V_{GS}$=0V | | | 90 | 135 | |
| Reverse transfer capacitance | $C_{rss}$ | f=1MHz | | | 25 | 40 | |
| Turn-on time $t_{on}$ | $t_{d(on)}$ | $V_{CC}$=600V $R_G$=10 Ω | | | 20 | 30 | ns |
| ($t_{on}$=$t_{d(on)}$+$t_r$) | $t_r$ | $I_D$=3A | | | 10 | 15 | |
| Turn-off time $t_{off}$ | $t_{d(off)}$ | $V_{GS}$=10V | | | 60 | 90 | |
| ($t_{off}$=$t_{d(off)}$+$t_f$) | $t_f$ | | | | 15 | 25 | |
| Avalanche capability | $I_{AV}$ | L=100μH $T_{ch}$=25°C | | 3 | | | A |
| Diode forward on-voltage | $V_{SD}$ | $I_F$=2x$I_{DR}$ $V_{GS}$=0V $T_{ch}$=25°C | | | 0.98 | 1.47 | V |
| Reverse recovery time | $t_{rr}$ | $I_F$=$I_{DR}$ $V_{GS}$=0V | | | 400 | | ns |
| Reverse recovery charge | $Q_{rr}$ | -di/dt=100A/μs $T_{ch}$=25°C | | | 2.5 | | μC |

● **Thermal characteristics**

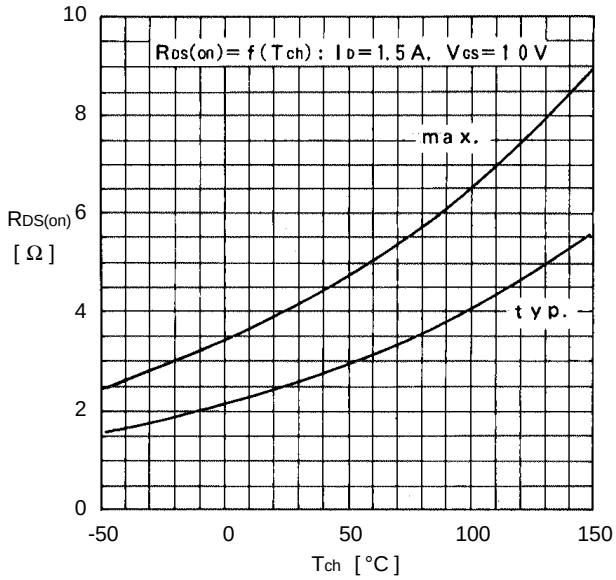
| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Thermal resistance | $R_{th(ch-a)}$ | channel to ambient | | | 125 | °C/W |
| | $R_{th(ch-c)}$ | channel to case | | | 2.08 | °C/W |

## Characteristics

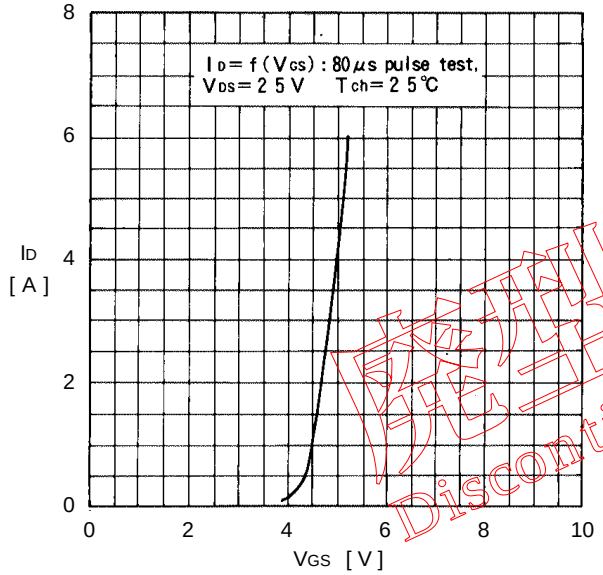
Typical output characteristics



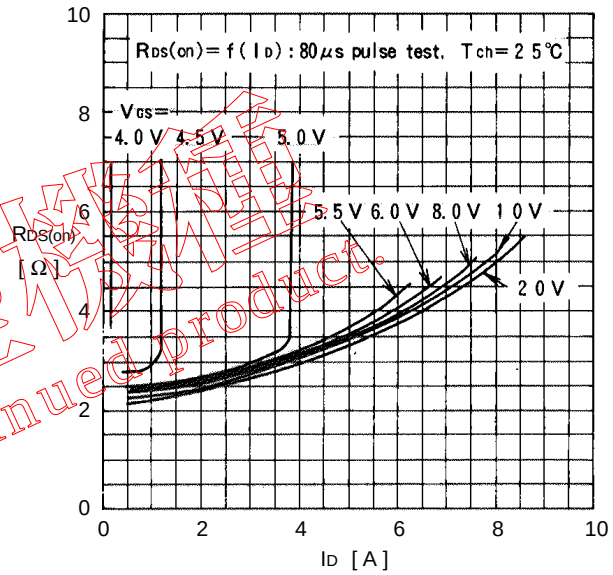

On state resistance vs. Tch




Typical transfer characteristics

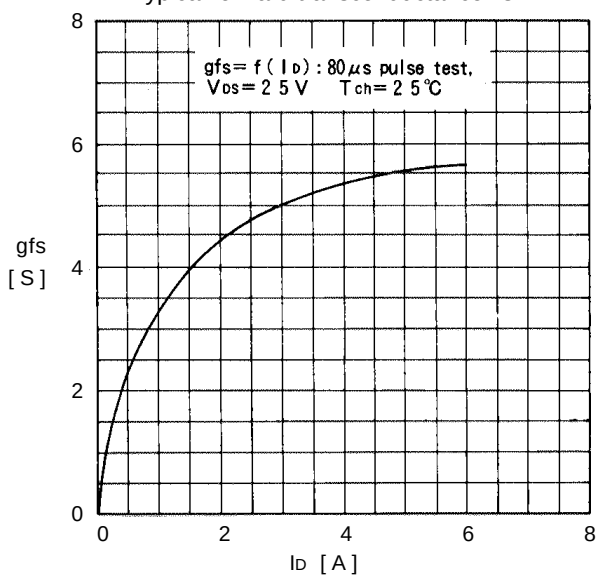



Typical Drain-Source on state resistance vs. ID

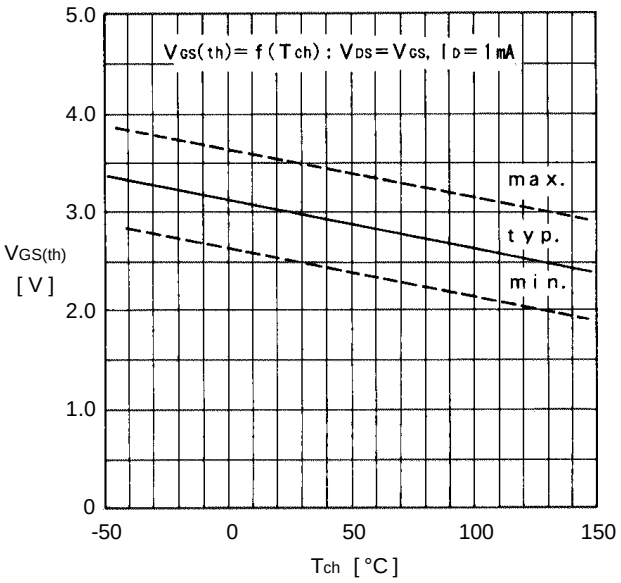



停产模块
Discontinued product

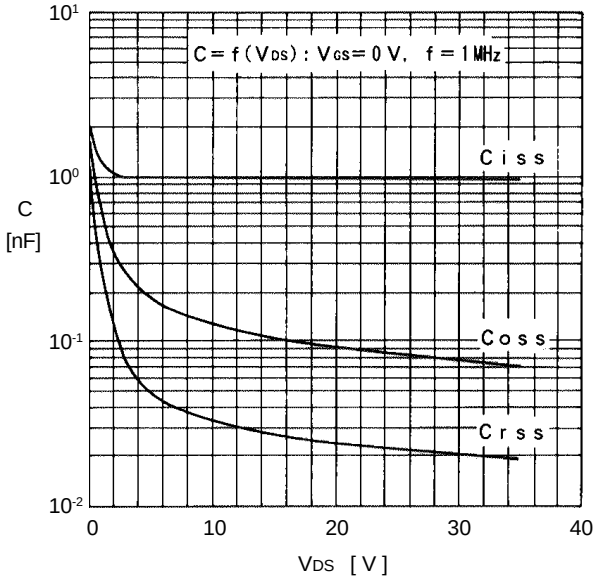
Typical forward transconductance vs. ID



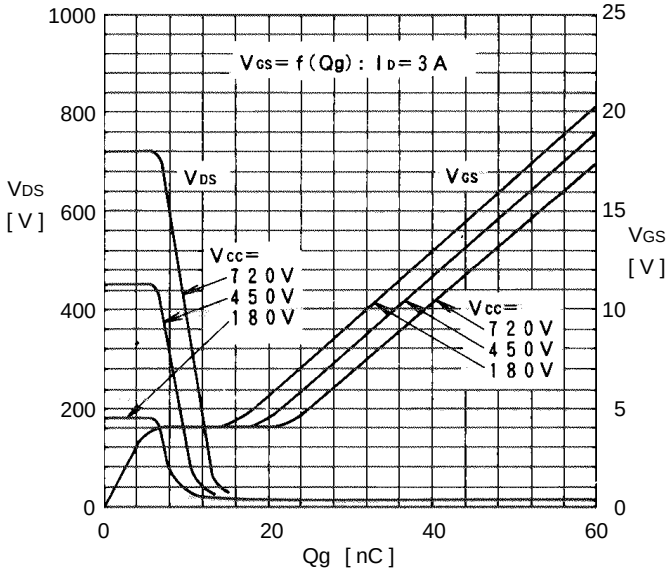

Gate threshold voltage vs. Tch



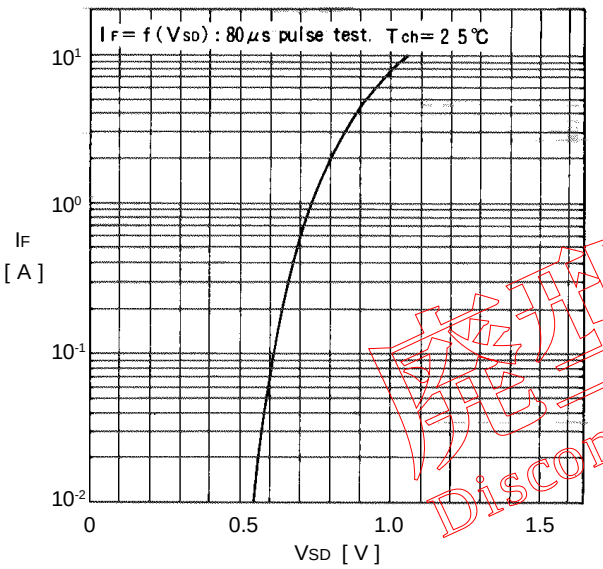
Typical capacitance vs. $V_{DS}$



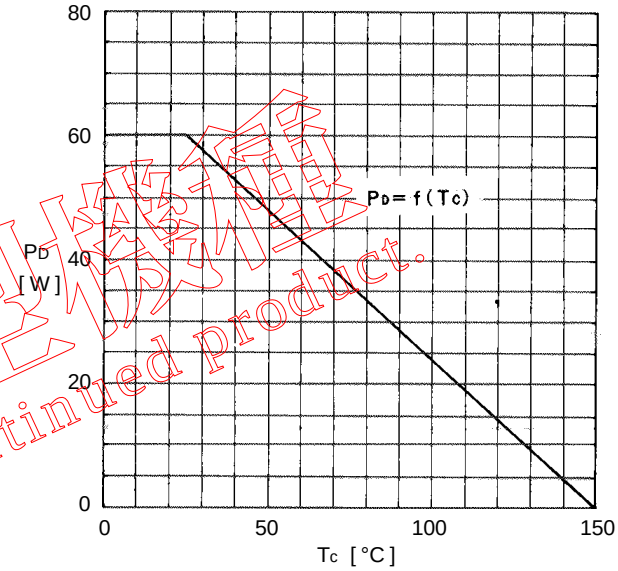

Typical input charge




Forward characteristics of reverse diode




Allowable power dissipation vs. $T_c$

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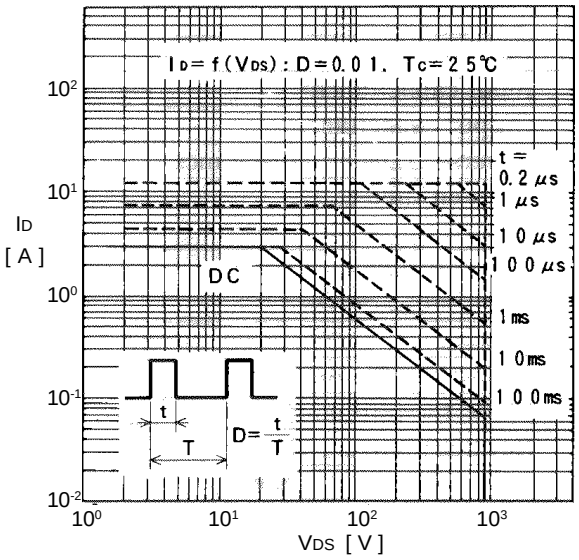
Safe operating area




Transient thermal impedance