

2SJ472-01L,S

FUJI POWER MOSFET

P-CHANNEL SILICON POWER MOSFET

FAP-III SERIES

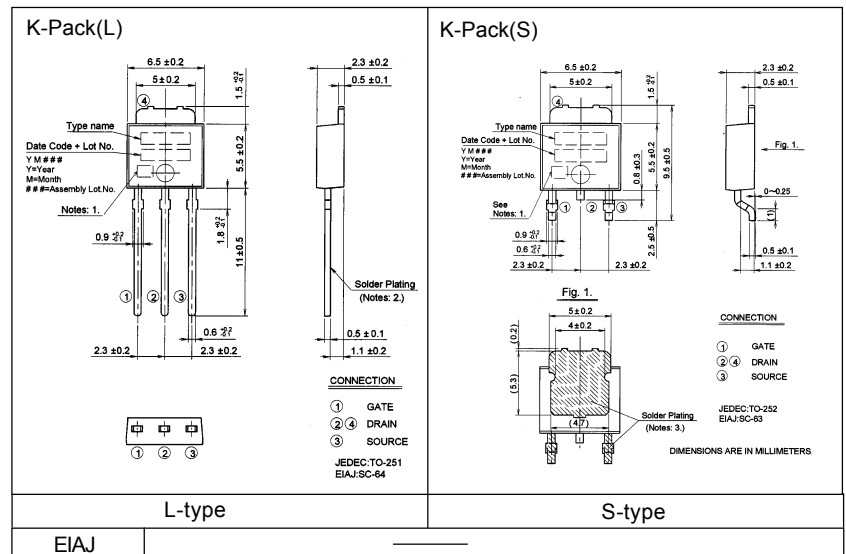
Features

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

Applications

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

Outline Drawings



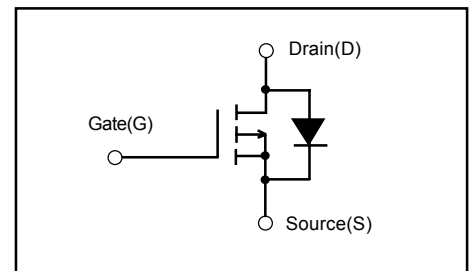
Maximum ratings and characteristics

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

| Item | Symbol | Rating | Unit |
|---|----------------------|-------------|------|
| Drain-source voltage | V _{DS} | -30 | V |
| Continuous drain current | I _D | ±5 | A |
| Pulsed drain current | I _{D(puls)} | ±20 | A |
| Gate-source voltage | V _{GS} | ±16 | V |
| Maximum avalanche energy *1 | E _{AV} | 191.8 | V |
| Maximum power dissipation(Tc=25°C) | P _D | 15 | W |
| Operating and storage temperature range | T _{ch} | +150 | °C |
| | T _{stg} | -55 to +150 | °C |

*1 L=10.23mH, V_{CC}= -12V

Equivalent circuit schematic



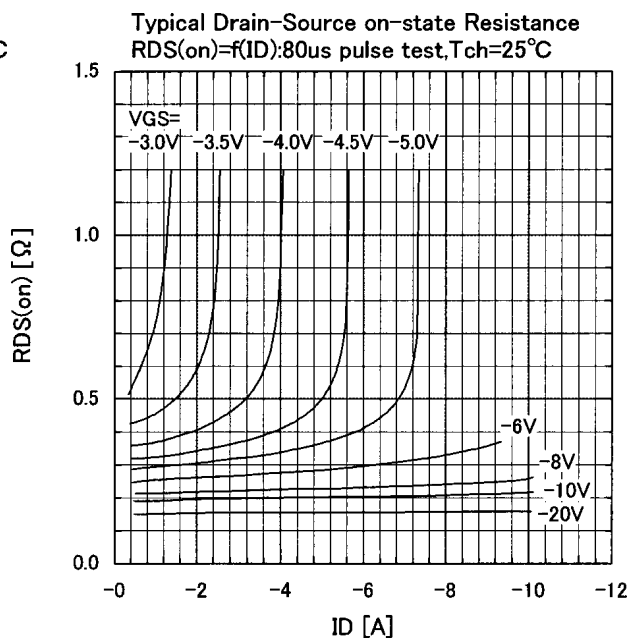
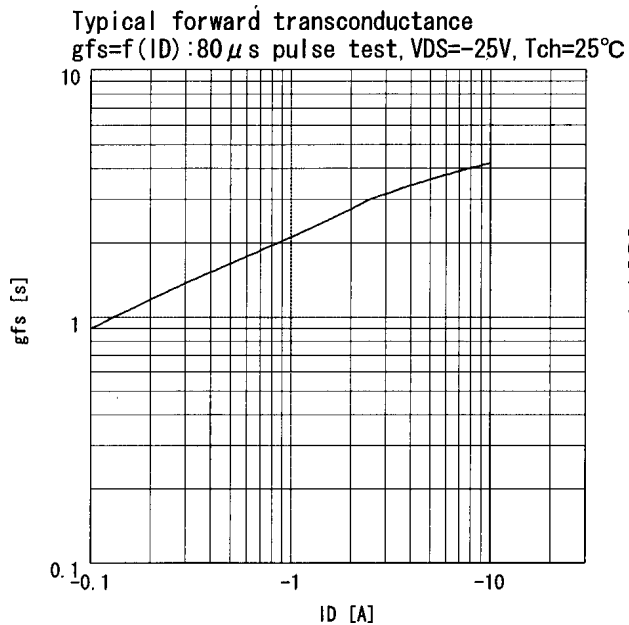
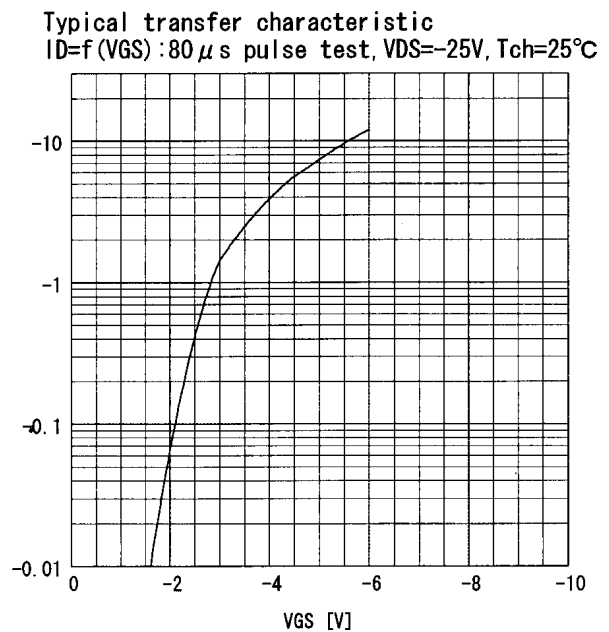
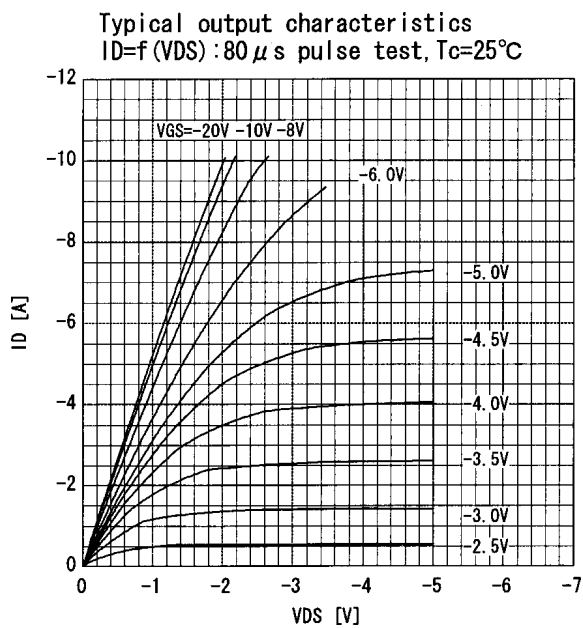
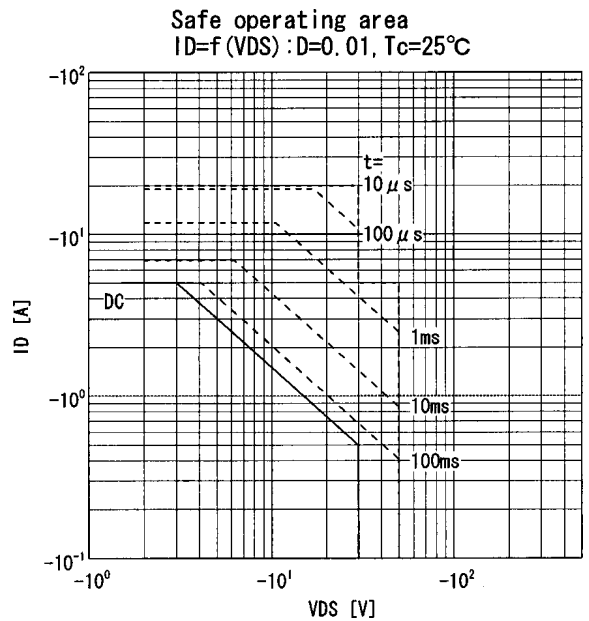
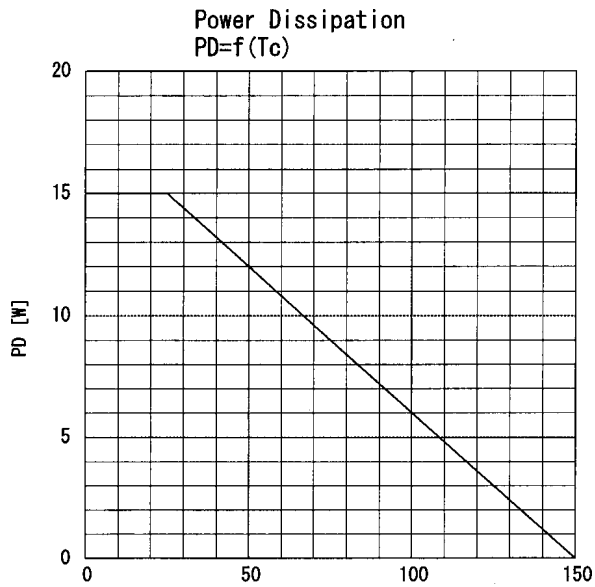
Electrical characteristics (Tc =25°C unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|----------------------------------|---------------------|---|------------------------|-------|------|-------|
| Drain-source breakdown voltage | BV _{DSS} | I _D =1mA V _{GS} =0V | -30 | | | V |
| Gate threshold voltage | V _{GS(th)} | I _D =1mA V _{DS} =V _{GS} | -1.0 | -1.5 | -2.5 | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} = -30V 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} =±16V V _{DS} =0V | | 10 | 100 | nA |
| Drain-source on-state resistance | R _{DSON} | I _D = -2.5A | V _{GS} = -4V | 480 | 850 | mΩ |
| | | | V _{GS} = -10V | 210 | 400 | mΩ |
| Forward transconductance | g _{fs} | I _D =2.5A V _{DS} = -25V | 1.5 | 3.0 | | S |
| Input capacitance | C _{iss} | V _{DS} = -25V | | 250 | 380 | pF |
| Output capacitance | C _{oss} | V _{GS} =0V | | 150 | 230 | |
| Reverse transfer capacitance | C _{rss} | f=1MHz | | 85 | 130 | ns |
| Turn-on time | t _{d(on)} | V _{CC} = -12V R _G =10 Ω | | 10 | 15 | |
| | t _r | I _D = -5A | | 20 | 30 | |
| Turn-off time | t _{d(off)} | V _{GS} = -10V | | 25 | 40 | |
| | t _f | | | 20 | 30 | |
| Avalanche capability | I _{AV} | L=100μH T _{ch} =25°C | -5 | | | A |
| Diode forward on-voltage | V _{SD} | I _F =2xI _{DR} V _{GS} =0V T _{ch} =25°C | | -2.50 | -3.8 | V |
| Reverse recovery time | t _{rr} | I _F =I _{DR} V _{GS} =0V | | 90 | | ns |
| Reverse recovery charge | Q _{rr} | -di/dt=100A/μs T _{ch} =25°C | | 0.30 | | μC |

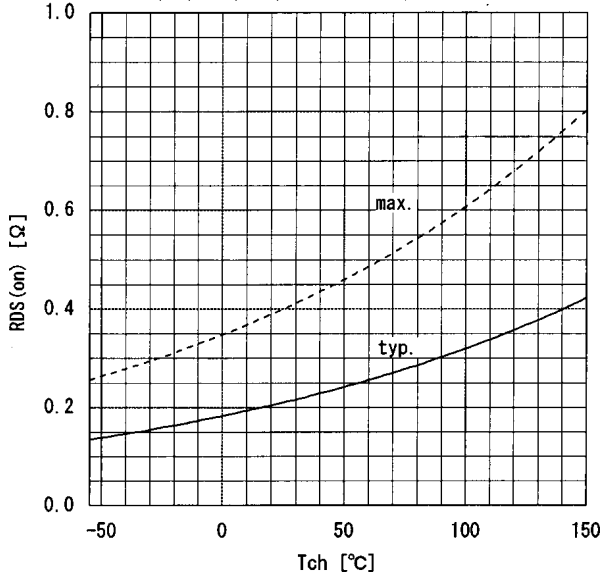
Thermal characteristics

| Item | Symbol | Min. | Typ. | Max. | Units |
|--------------------|-----------------------|------|------|-------|-------|
| Thermal resistance | R _{th(ch-c)} | | | 8.33 | °C/W |
| | R _{th(ch-a)} | | | 125.0 | °C/W |

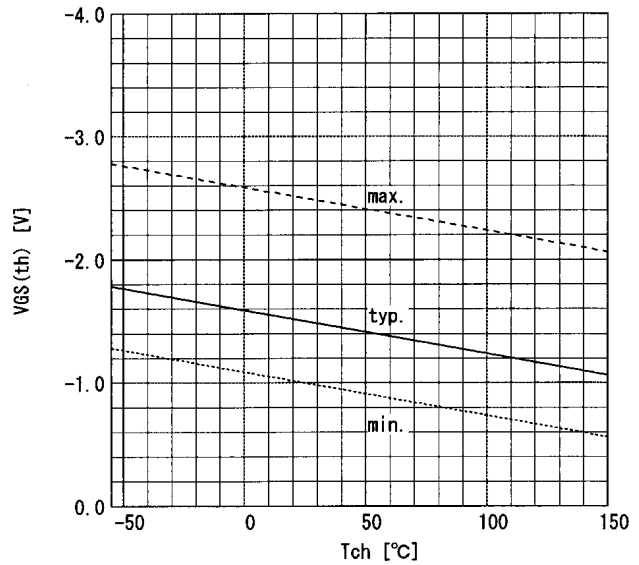
Characteristics



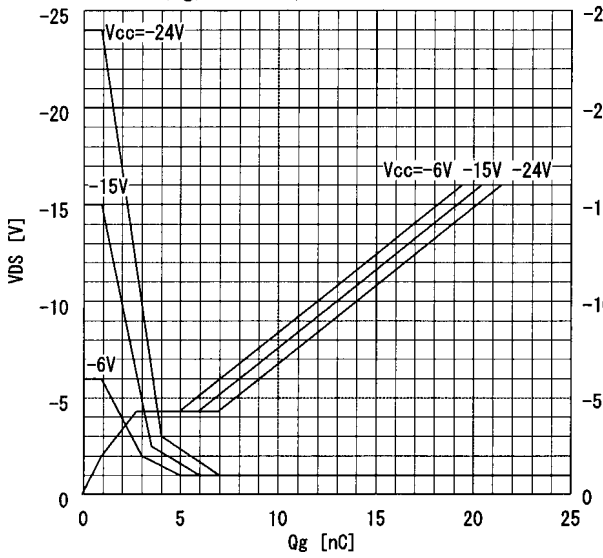
Drain-source on-state resistance
 $R_{DS(on)} = f(T_{ch}) : I_D = -2.5A, V_{GS} = 10V$



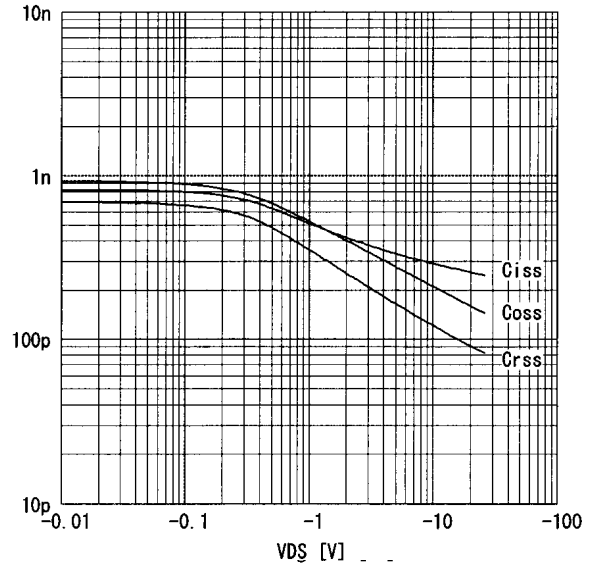
Gate threshold voltage
 $V_{GS(th)} = f(T_{ch}) : I_D = -1mA, V_{DS} = V_{GS}$



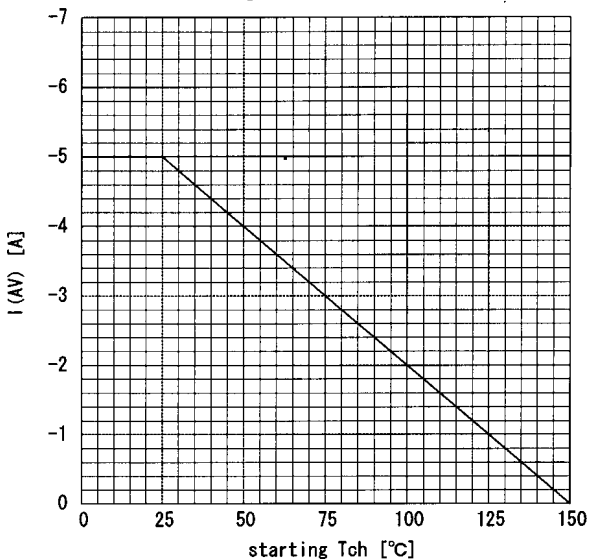
Typical gate charge characteristic
 $V_{GS} = f(Q_g) : I_D = -5A, T_c = 25°C$



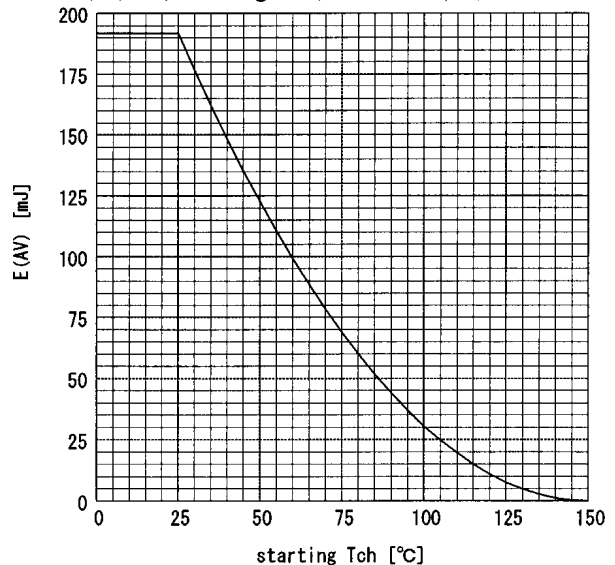
Typical capacitances
 $C = f(V_{DS}) : V_{GS} = 0V, f = 1MHz$



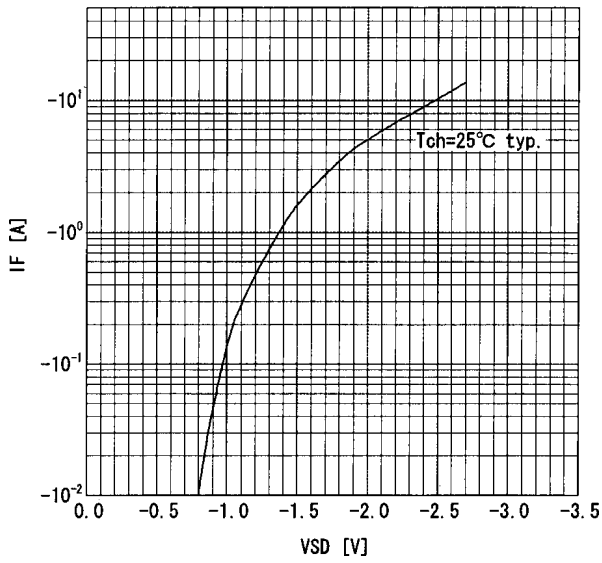
Maximum Avalanche Current vs. starting T_{ch}
 $I_{(AV)} = f(\text{starting } T_{ch})$



Maximum Avalanche Energy vs. starting T_{ch}
 $E_{(AV)} = f(\text{starting } T_{ch}) : V_{CC} = -12V, I_{(AV)} \geq -5A$



Forward characteristic of reverse of diode
 $I_F=f(V_{SD}) : 80 \mu s$ pulses test, $V_{GS}=0V$



Transient thermal impedande
 $Z_{thch}=f(t)$ parameter: $D=t/T$

