

2SK3526-01L,S,SJ

FUJI POWER MOSFET

N-CHANNEL SILICON POWER MOSFET

Super FAP-G 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 _{DS} | 600 | V |
| Continuous drain current | I _D | ±8 | A |
| Pulsed drain current | I _{D(puls)} | ±32 | A |
| Gate-source voltage | V _{GS} | ±30 | V |
| Repetitive or non-repetitive | IAR *2 | 8 | A |
| Maximum Avalanche Energy | EAS *1 | 145.6 | mJ |
| Maximum Drain-Source dV/dt | dV _{DS} /dt *4 | 20 | kV/μs |
| Peak Diode Recovery dV/dt | dV/dt *3 | 5 | kV/μs |
| Max. power dissipation | P _D | T _a =25°C | 1.67 |
| | | T _c =25°C | 135 |
| Operating and storage temperature range | T _{ch} | +150 | °C |
| | T _{stg} | -55 to +150 | °C |

*1 L=4.2mH, V_{CC}=60V, See to Avalanche Energy Graph *2 T_{ch}≤150°C

*3 I_F≤-I_D, -di/dt=50A/μs, V_{CC}≤BV_{DSS}, T_{ch}≤150°C *4 V_{DS}≤600V

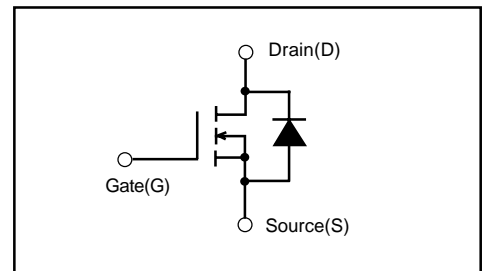
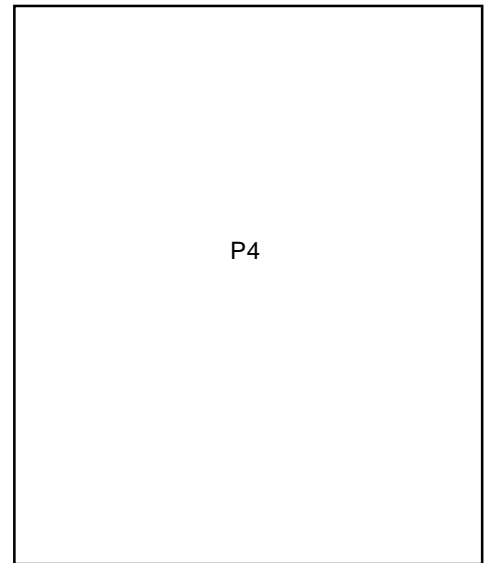
Electrical characteristics (Tc =25°C unless otherwise specified)

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|----------------------------------|----------------------|--|------|------|------|-------|
| Drain-source breakdown voltage | V _{(BR)DSS} | I _D =250μA V _{GS} =0V | 600 | | | V |
| Gate threshold voltage | V _{GS(th)} | I _D =250μA V _{DS} =V _{GS} | 3.0 | | 5.0 | V |
| Zero gate voltage drain current | I _{DSS} | V _{DS} =600V V _{GS} =0V | | | 25 | μA |
| | | V _{DS} =480V V _{GS} =0V | | | 250 | |
| 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 =3A V _{GS} =10V | | 0.93 | 1.20 | Ω |
| Forward transconductance | g _{fs} | I _D =3A V _{DS} =25V | 3 | 6 | | S |
| Input capacitance | C _{iss} | V _{DS} =25V | | 750 | 1130 | pF |
| Output capacitance | C _{oss} | V _{GS} =0V | | 100 | 150 | |
| Reverse transfer capacitance | C _{rss} | f=1MHz | | 4.0 | 6.0 | |
| Turn-on time t _{on} | td(on) | V _{CC} =300V I _D =3A | | 14 | 21 | ns |
| | t _r | V _{GS} =10V | | 9 | 14 | |
| Turn-off time t _{off} | td(off) | R _{GS} =10 Ω | | 24 | 36 | |
| | t _f | | | 7 | 10.5 | |
| Total Gate Charge | Q _G | V _{CC} =300V | | 20 | 30 | nC |
| Gate-Source Charge | Q _{GS} | I _D =6A | | 8.5 | 13 | |
| Gate-Drain Charge | Q _{GD} | V _{GS} =10V | | 5.5 | 8.5 | |
| Avalanche capability | I _{AV} | L=4.2mH T _{ch} =25°C | 8 | | | A |
| Diode forward on-voltage | V _{SD} | I _F =6A V _{GS} =0V T _{ch} =25°C | | 1.00 | 1.50 | V |
| Reverse recovery time | t _{rr} | I _F =6A V _{GS} =0V | | 0.7 | | μs |
| Reverse recovery charge | Q _{rr} | -di/dt=100A/μs T _{ch} =25°C | | 3.5 | | μC |

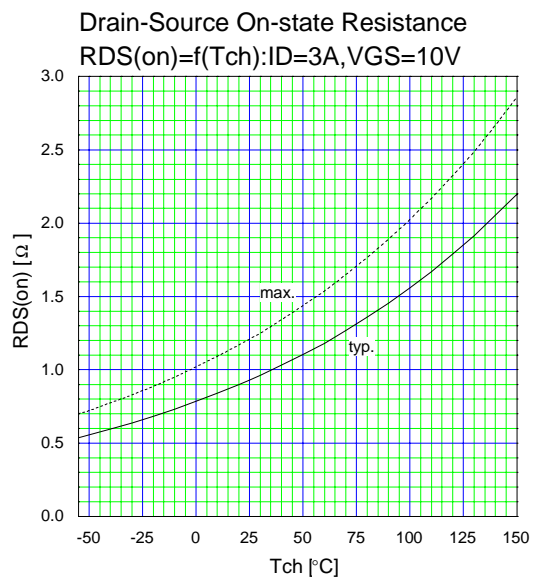
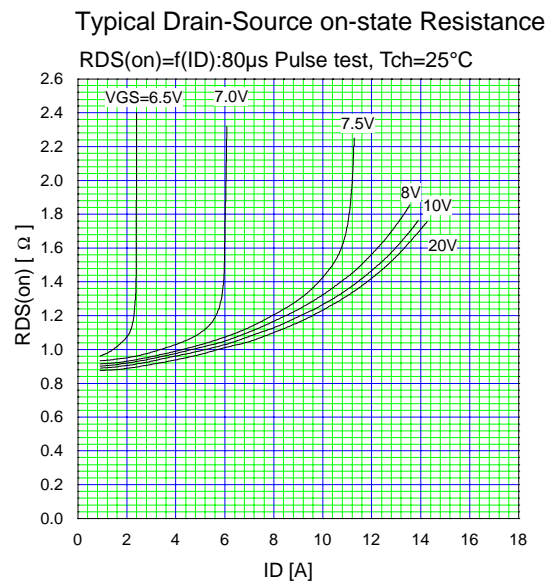
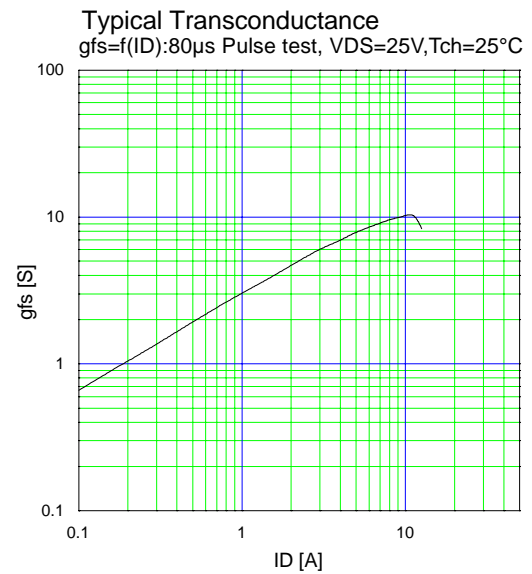
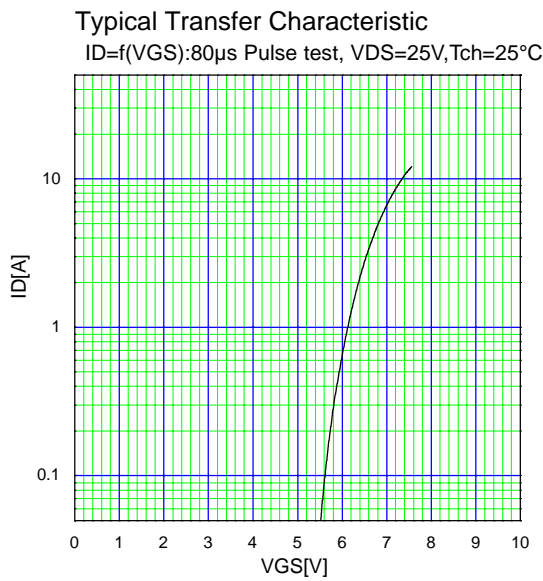
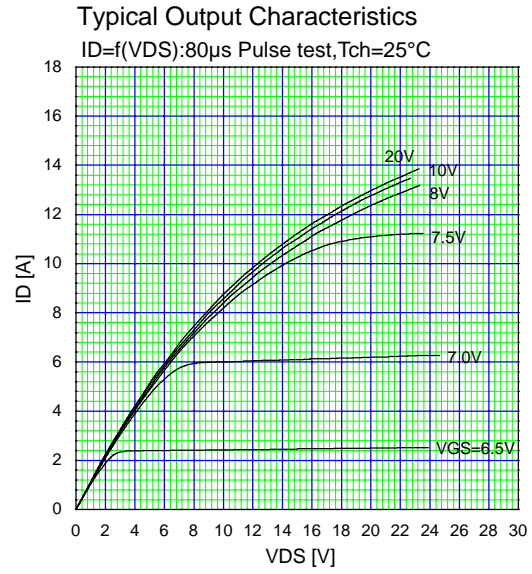
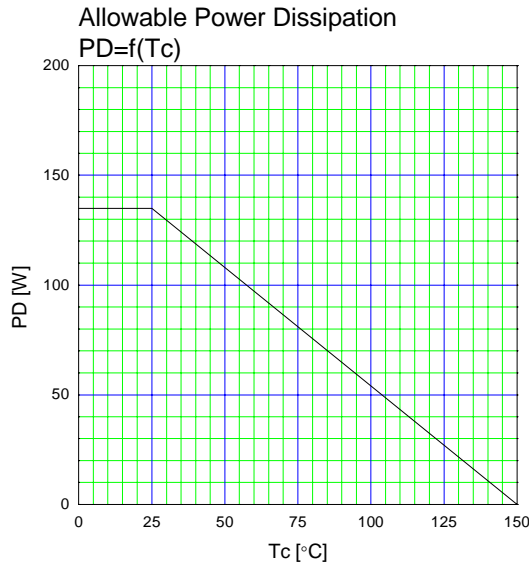
Thermal characteristics

| Item | Symbol | Test Conditions | Min. | Typ. | Max. | Units |
|--------------------|-----------------------|--------------------|------|------|-------|-------|
| Thermal resistance | R _{th(ch-c)} | channel to case | | | 0.926 | °C/W |
| | R _{th(ch-a)} | channel to ambient | | | 75.0 | °C/W |

Outline Drawings [mm]

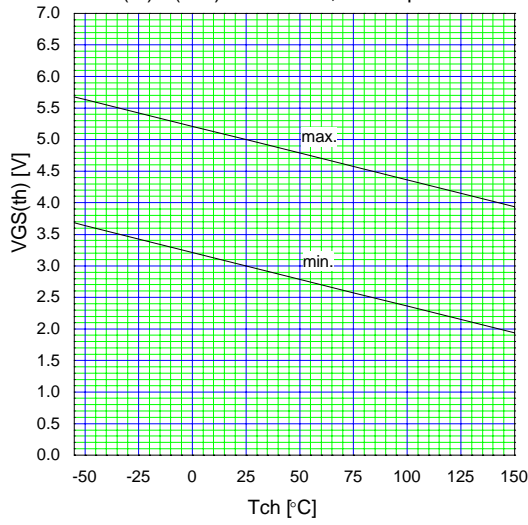


Characteristics



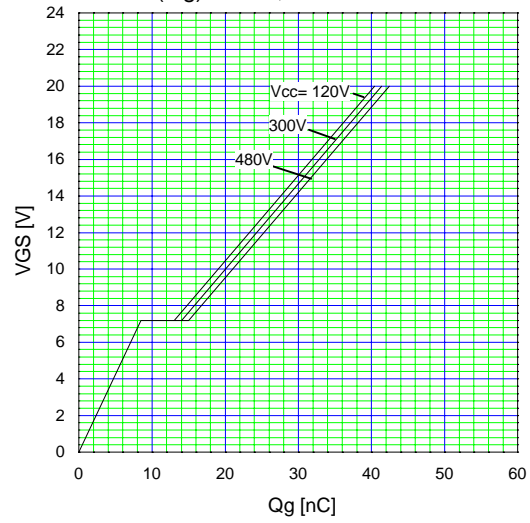
Gate Threshold Voltage vs. T_{ch}

V_{GS(th)}=f(T_{ch}):V_{DS}=V_{GS},I_D=250μA



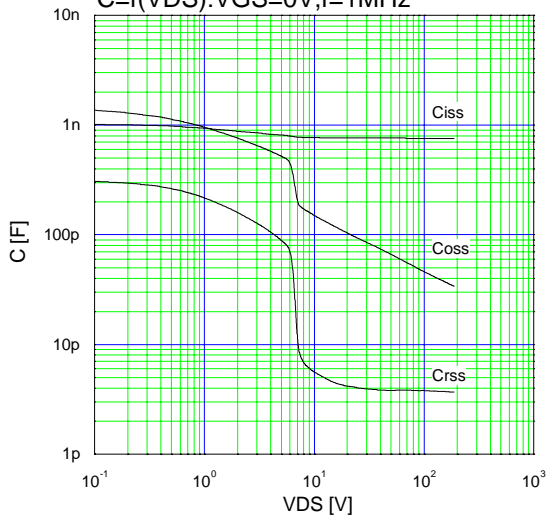
Typical Gate Charge Characteristics

V_{GS}=f(Q_g):I_D=3A, T_{ch}=25°C



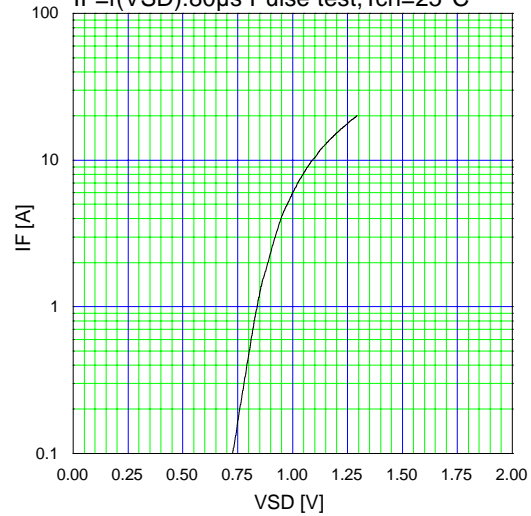
Typical Capacitance

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



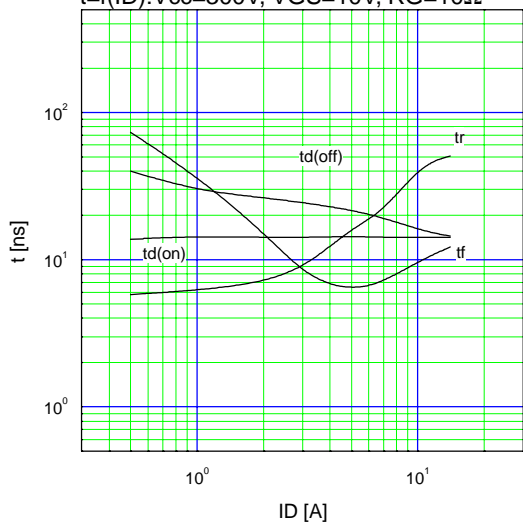
Typical Forward Characteristics of Reverse Diode

I_F=f(V_{SD}):80μs Pulse test, T_{ch}=25°C



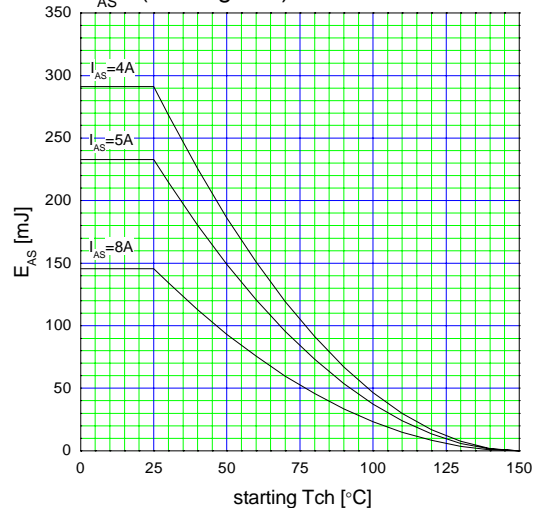
Typical Switching Characteristics vs. I_D

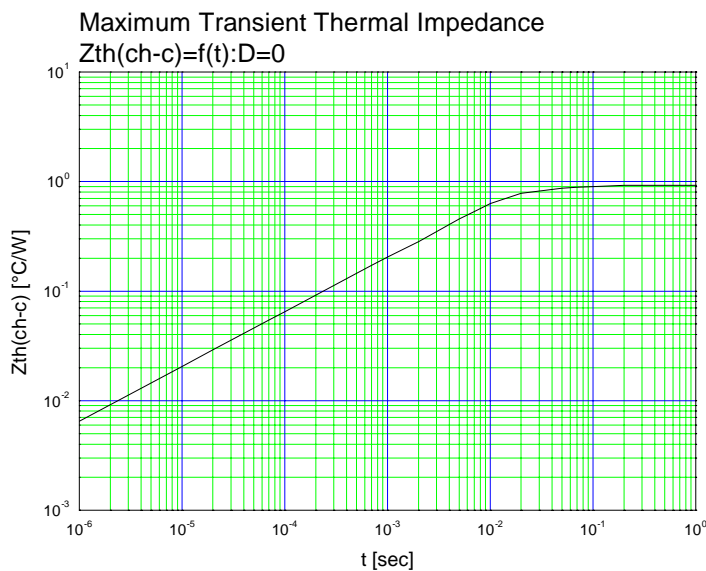
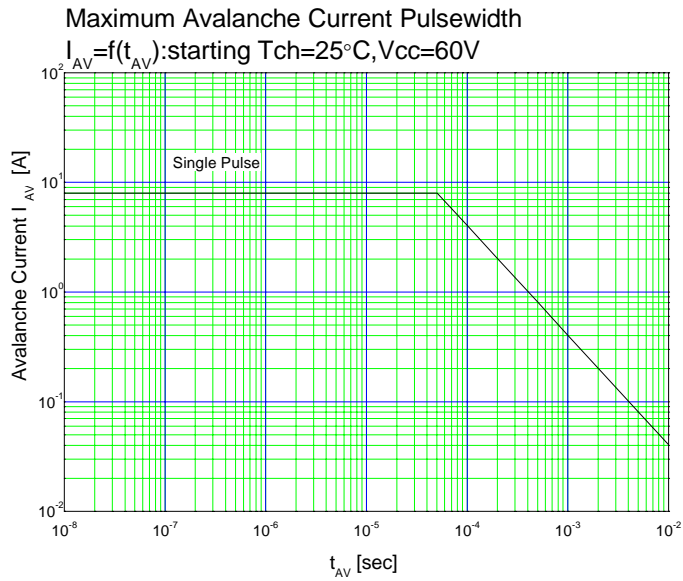
t=f(I_D):V_{cc}=300V, V_{GS}=10V, R_G=10Ω



Maximum Avalanche Energy vs. starting T_{ch}

E_{AS}=f(starting T_{ch}):V_{cc}=60V





■ Outline Drawings (mm)

