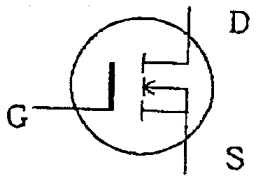
# Fuji power MOSFET Specification

## 2SK1512-01

1. Scope
This specifies Fuji power MOSFET 2SK1512-01

2. Outline
Ⅰ) Construction N-channel enhancement mode power MOSFET
Ⅱ) Application for switching
Ⅲ) Outview TO-3P (MK5C25623)




3. Absolute maximum ratings at Tc=25 ℃ (unless otherwise specified)

| Description | Symbol | Characteristics | Unit | Remarks |
|---|---|---|---|---|
| Drain-source voltage | $V_{DS}$ | 900 | V | |
| Drain-gate voltage | $V_{DGR}$ | 900 | V | $R_{GS}$=20KΩ |
| Continuous Drain current | $I_D$ | 10 | A | |
| Pulsed drain current | $I_{Dpulse}$ | 30 | A | |
| Gate-source voltage | $V_{GS}$ | ± 30 | V | |
| Maximum power dissipation | $P_D$ | 150 | W | |
| Operating and storage temperature range | $T_{ch}$ | 150 | ℃ | |
| | $T_{stg}$ | -55 ～ +150 | ℃ | |

4. Electrical characteristics at Tc=25℃ (unless otherwise specified)
Static ratings

| Description | Symbol | Conditions | | Characteristics | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| Drain-source breakdown voltage | $BV_{DSS}$ | $I_D$=1 mA<br>$V_{GS}$=0 V | | 900 | | | V |
| Gate threshold voltage | $V_{GS(th)}$ | $I_D$=1 mA<br>$V_{DS}$=$V_{GS}$ | | 2.5 | 3.5 | 5.0 | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$= 900V<br>$V_{GS}$= 0V | $T_{ch}$= 25℃ | | 10 | 500 | μA |
| | $I_{DSS}$ | | $T_{ch}$=125℃ | | 0.2 | 1.0 | mA |
| Gate-source leakage current | $I_{GSS}$ | $V_{GS}$=±30V<br>$V_{DS}$= 0V | | | 10 | 100 | nA |
| Drain-source on-state resistance | $R_{DS(on)}$ | $I_D$ = 5 A<br>$V_{GS}$=10 V | | | 1.0 | 1.2 | Ω |

Dynamic ratings

| Description | Symbol | Conditions | Characteristics | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Forward transconductance | gfs | $I_D$ = 5 A<br>$V_{DS}$=25 V | 3.0 | 6.0 | | S |
| Input capacitance | Ciss | $V_{DS}$=25 V<br>$V_{GS}$= 0 V<br>f =1MHz | | 1500 | 2250 | pF |
| Output capacitance | Coss | | | 200 | 300 | pF |
| Reverse transfer capacitance | Crss | | | 100 | 150 | pF |
| Turn-on time | td(on) | $V_{CC}$=600V<br>$V_{GS}$= 10V<br>$I_D$ = 10A<br>$R_{GS}$= 25Ω | | 40 | 60 | ns |
| | tr | | | 120 | 180 | ns |
| Turn-off time | td(off) | | | 240 | 360 | ns |
| | tf | | | 110 | 165 | ns |

Reverse diode

| Description | Symbol | Conditions | Characteristics | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Avalanche capability | $I_{AV}$ | L=100μH, $T_{ch}$=25℃<br>*see Fig1 and 2 | 10 | | | A |
| Continuous reverse drain current | $I_{DR}$ | Tc=25℃ | | | 10 | A |
| Pulsed reverse drain current | $I_{DRM}$ | Tc=25℃ | | | 30 | A |
| Diode forward on-voltage | $V_{SD}$ | $I_F$ = 2 × $I_{DR}$<br>$V_{GS}$=0 V, $T_{ch}$=25℃ | | 0.96 | 1.44 | V |
| Reverse recovery time | $t_{rr}$ | $I_F$ = $I_{DR}$<br>-$dI_F/dt$=100A/μS<br>$T_{ch}$=25℃ | | 600 | | ns |
| Reverse recovery charge | $Q_{rr}$ | | | 4.5 | | μC |

5. Thermal resistance

| Description | Symbol | Conditions | Characteristics | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Thermal resistance | $Rth_{ch-c}$ | | | | 0.83 | ℃/W |
| | $Rth_{ch-a}$ | | | | 35.0 | ℃/W |

| | DATE | NAME | APPROVED |
|---|---|---|---|
| DRAWN | - - | | |
| CHECKED | | | |

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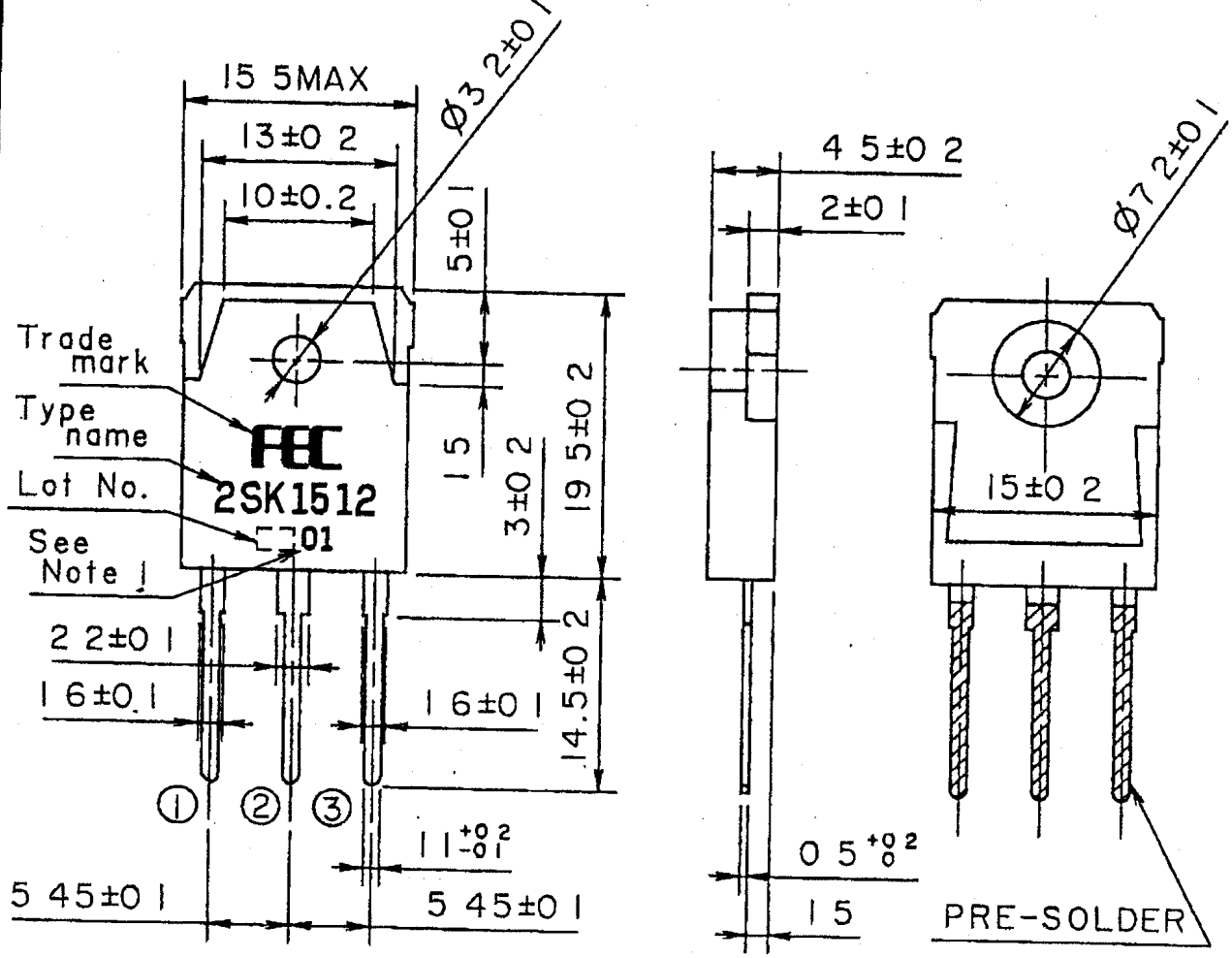
# FUJI POWER MOS FET

## TYPE 2SK1512-01

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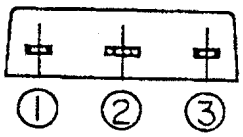


### CONNECTION

① GATE
② DRAIN
③ SOURCE

JEDEC TO-228AA
EIAJ SC-65

Note 1 Guaranteed mark of avalanche ruggedness

| | DATE | NAME | APPROVED |
|---|---|---|---|
| DRAWN | 1990-12-27 | MARIIYAMA | M |

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