

## MOS Field Effect Transistors

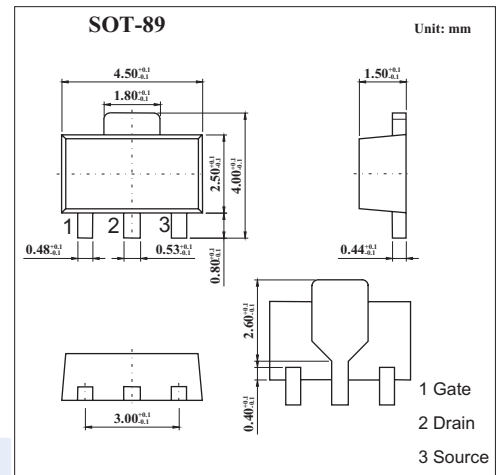
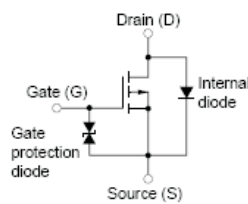
### 2SJ356

#### ■ Features

- Low on-state resistance

$R_{DS(on)}=0.95\ \Omega$  ( $V_{GS}=-4V, I_D=-1.0A$ )

$R_{DS(on)}=0.50\ \Omega$  ( $V_{GS}=-10V, I_D=-1.0A$ )



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter               | Symbol    | Rating      | Unit             |
|-------------------------|-----------|-------------|------------------|
| Drain to source voltage | $V_{DSS}$ | -60         | V                |
| Gate to source voltage  | $V_{GSS}$ | -20,+10     | V                |
| Drain current (DC)      | $I_D$     | $\pm 2.0$   | A                |
| Drain current(pulse) *  | $I_D$     | $\pm 4$     | A                |
| Power dissipation       | $P_D$     | 2.0         | W                |
| Channel temperature     | $T_{ch}$  | 150         | $^\circ\text{C}$ |
| Storage temperature     | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

\*  $PW \leq 10\ \mu\text{s}$ ;  $d \leq 1\%$ .

## 2SJ356

## ■ Electrical Characteristics Ta = 25°C

| Parameter                           | Symbol               | Testconditions  | Min  | Typ  | Max  | Unit |
|-------------------------------------|----------------------|---|------|------|------|------|
| Drain cut-off current               | I <sub>DSS</sub>     | V <sub>DS</sub> =-60V, V <sub>GS</sub> =0   |      |      | -10  | μ A  |
| Gate leakage current                | I <sub>GSS</sub>     | V <sub>GS</sub> =±16/+10V, V <sub>DS</sub> =0   |      |      | ±10  | μ A  |
| Gate cut-off voltage                | V <sub>GS(off)</sub> | V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA   | -1.0 | -1.4 | -2.0 | V    |
| Forward transfer admittance         | Y <sub>fs</sub>      | V <sub>DS</sub> =-10V, I <sub>D</sub> =-1.0A  | 1.0  |      |      | S    |
| Drain to source on-state resistance | R <sub>Ds(on)</sub>  | V <sub>GS</sub> =-4V, I <sub>D</sub> =-1.0A   |      | 0.65 | 0.95 | Ω    |
|                                     |                      | V <sub>GS</sub> =-10V, I <sub>D</sub> =-1.0A  |      | 0.41 | 0.50 | Ω    |
| Input capacitance                   | C <sub>iss</sub>     | V <sub>DS</sub> =-10V, V <sub>GS</sub> =0, f=1MHZ   |      | 270  |      | pF   |
| Output capacitance                  | C <sub>oss</sub>     |   |      | 145  |      | pF   |
| Reverse transfer capacitance        | C <sub>rss</sub>     |   |      | 55   |      | pF   |
| Turn-on delay time                  | t <sub>d(on)</sub>   |   |      | 4.3  |      | ns   |
| Rise time                           | t <sub>r</sub>       | V <sub>GS(on)</sub> =-10V, V <sub>DD</sub> =-25V, I <sub>D</sub> =-1A R <sub>L</sub> =255Ω, R <sub>G</sub> =10Ω |      | 21   |      | ns   |
| Turn-off delay time                 | t <sub>d(off)</sub>  |   |      | 115  |      | ns   |
| Fall time                           | t <sub>f</sub>       |   |      | 75   |      | ns   |
| Total Gate Charge                   | Q <sub>g</sub>       | V <sub>GS</sub> =-10V, I <sub>D</sub> =-2.0A, V <sub>DD</sub> =-48V, I <sub>G</sub> =-2mA                       |      | 11.6 |      | nC   |
| Gate to Source Charge               | Q <sub>GS</sub>      |   |      | 1.0  |      | nC   |
| Gate Drain Charge                   | Q <sub>GD</sub>      |   |      | 3.8  |      | nC   |
| Reverse Recovery time               | t <sub>rr</sub>      | I <sub>F</sub> =2.0A, V <sub>GS</sub> =0, di/dt=50A/μ s   |      | 82   |      | ns   |
| Reverse Recovery Charge             | Q <sub>rr</sub>      |   |      | 94   |      | nC   |