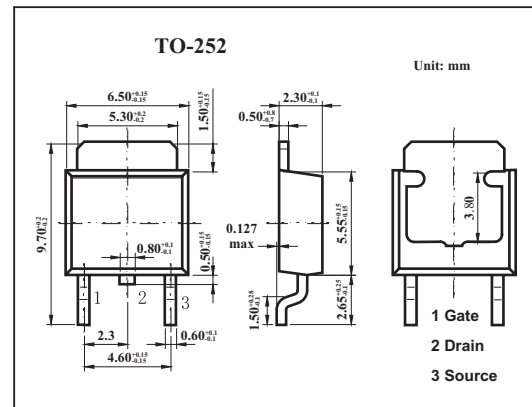
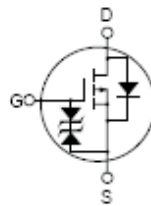


## MOS Field Effect Transistor

### 2SJ599

#### ■ Features

- Low on-resistance  
 $R_{DS(on)1} = 75 \text{ m}\Omega \text{ MAX. (} V_{GS} = -10 \text{ V, } I_D = -10 \text{ A)}$   
 $R_{DS(on)2} = 110 \text{ m}\Omega \text{ MAX. (} V_{GS} = -4.0 \text{ V, } I_D = -10 \text{ A)}$
- Low  $C_{iss}$ :  $C_{iss} = 1300 \text{ pF TYP.}$
- Built-in gate protection diode



#### ■ 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	$V_{GSS}$	$\pm 20$	V	
Drain current (DC)	$I_D$	$\pm 20$	A	
Drain current(pulse) *	$I_D$	$\pm 50$	A	
Power dissipation	$T_C=25^\circ\text{C}$	$P_D$	35	W
	$T_A=25^\circ\text{C}$	$P_D$	1.0	W
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	

\*  $PW \leq 10 \mu\text{s}$ , duty cycle  $\leq 1\%$

## 2SJ599

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	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> =±20V, V <sub>DS</sub> =0			±10	μ A
Gate to source cutoff voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	1.5	2.0	2.5	V
Forward transfer admittance	Y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-10A	8	16		S
Drain to source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-10A		60	75	mΩ
		V <sub>GS</sub> =-4.0V, I <sub>D</sub> =-10A		78	111	mΩ
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0, f=1MHZ		720		pF
Output capacitance	C <sub>oss</sub>			150		pF
Reverse transfer capacitance	C <sub>rss</sub>			50		pF
Turn-on delay time	t <sub>d(on)</sub>			8		ns
Rise time	t <sub>r</sub>	V <sub>GS(on)</sub> =-10V, I <sub>D</sub> =-10A, V <sub>DD</sub> =-30V, R <sub>G</sub> =0Ω		9		ns
Turn-off delay time	t <sub>d(off)</sub>			52		ns
Fall time	t <sub>f</sub>			16		ns
Total Gate Charge	Q <sub>G</sub>		I <sub>D</sub> = -20A		26	
Gate to Source Charge	Q <sub>GS</sub>	V <sub>DD</sub> = -48 V		5		nC
Gate to Drain Charge	Q <sub>GD</sub>	V <sub>GS</sub> = -10 V		7		nC
Body Diode Forward Voltage	V <sub>F(S-D)</sub>	I <sub>F</sub> = -20A, V <sub>GS</sub> = 0 V		1.0		V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = -20 A, V <sub>GS</sub> = 0 V		51		ns
Reverse Recovery Charge	Q <sub>rr</sub>	di/dt = 100 A / μ s		102		nC