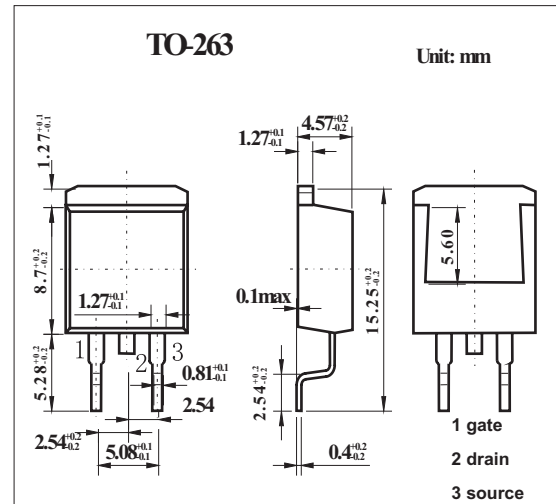
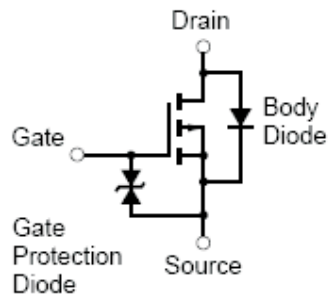


## MOS Field Effect Transistors

### 2SJ605

#### ■ Features

- Super low on-state resistance:  
 $R_{DS(on)1} = 20 \text{ m}\Omega \text{ MAX. (} V_{GS} = -10 \text{ V, } I_D = -33 \text{ A)}$   
 $R_{DS(on)2} = 31 \text{ m}\Omega \text{ MAX. (} V_{GS} = -4.0 \text{ V, } I_D = -33 \text{ A)}$
- Low input capacitance  
 $C_{iss} = 4600 \text{ pF TYP. (} V_{DS} = -10 \text{ V, } V_{GS} = 0 \text{ A)}$
- 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)	$I_D$	$\pm 65$	A
Drain Current(pulse) *1	$I_{D(pulse)}$	$\pm 200$	A
Total Power Dissipation	$P_T$	1.5	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Single Avalanche Current *2	$I_{AS}$	-45	A
Single Avalanche Energy *2	$E_{AS}$	203	mJ

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

\*2. Starting  $T_{ch} = 25^\circ\text{C}$ ,  $R_{\theta} = 25\Omega$ ,  $V_{GS} = -20\text{V}$ ,  $V_{DD} = -30\text{V}$

## 2SJ605

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain Cut-off Current	$I_{DSS}$	$V_{DS} = -60\text{ V}, V_{GS} = 0\text{ V}$			-10	$\mu\text{ A}$
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$			$\pm 10$	$\mu\text{ A}$
Gate Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = -10\text{ V}, I_D = -1\text{ mA}$	-1.5	-2.0	-2.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = -10\text{ V}, I_D = -33\text{ A}$	30	59		S
Drain to Source On-state Resistance	$R_{DS(on)1}$	$V_{GS} = -10\text{ V}, I_D = -33\text{ A}$		17	20	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = -4.0\text{ V}, I_D = -33\text{ A}$		22	31	$\text{m}\Omega$
Input Capacitance	$C_{iss}$	$V_{DS} = -10\text{ V}$		4600		pF
Output Capacitance	$C_{oss}$	$V_{GS} = 0\text{ V}$		820		pF
Feedback Capacitance	$C_{rss}$	$f = 1\text{ MHz}$		330		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30\text{ V}, I_D = -33\text{ A}$		15		ns
Rise Time	$t_r$	$V_{GS} = -10\text{ V}$		14		ns
Turn-off Delay Time	$t_{d(off)}$	$R_G = 0\Omega$		100		ns
Fall Time	$t_f$			58		ns
Total Gate Charge	$Q_g$	$V_{DD} = -48\text{ V}$		87		nC
Gate-Source Charge	$Q_{gs}$	$V_{GS} = -10\text{ V}$		15		nC
Gate-Drain Charge	$Q_{gd}$	$I_D = -65\text{ A}$		22		nC
Diode Forward Voltage	$V_{F(S-D)}$	$I_F = 65\text{ A}, V_{GS} = 0\text{ V}$		1.0		V
Reverse Recovery Time	$t_{rr}$	$I_F = 65\text{ A}, V_{GS} = 0\text{ V}$		53		ns
Reverse Recovery Charge	$Q_{rr}$	$di/dt = 100\text{ A} / \mu\text{ s}$		110		nC