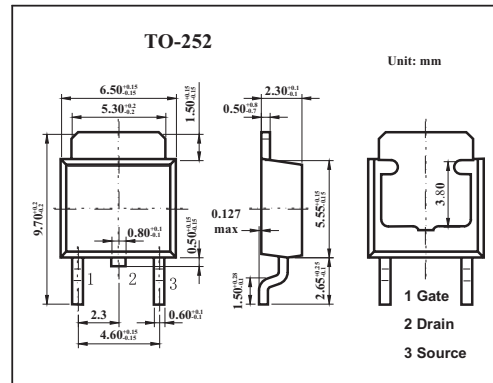
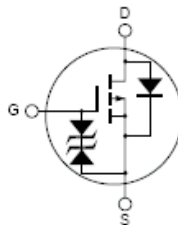


## High Speed Power Switching

### 2SJ506S

#### ■ Features

- Low on-resistance  
 $R_{DS(on)} = 0.065 \Omega$  typ. (at  $V_{GS} = -10V$ ,  $I_D = -5A$ )
- Low drive current
- High speed switching
- 4V gate drive devices.



#### ■ 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 (AC)	$V_{GSS}$	$\pm 20$	V	
Gate to source voltage (DC) *1	$V_{GSS}$	-20	V	
Drain current (DC)	$I_D$	$\pm 20$	A	
Drain current(pulse) *2	$I_D$	$\pm 80$	A	
Power dissipation	$P_D$	$T_A=25^\circ\text{C}$	1.5	W
		$T_C=25^\circ\text{C}$	70	W
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$	
Channel to Case	$R_{th(ch-C)}$	1.79	$^\circ\text{C/W}$	
Channel to Ambient	$R_{th(ch-A)}$	83.3	$^\circ\text{C/W}$	

\*1  $f = 20 \text{ kHz}$ , Duty Cycle  $\leq 10\%$  (+Side)

\*2  $PW \leq 10 \mu\text{s}$ ;  $d \leq 1\%$ .

## 2SJ506S

## ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain to source breakdown voltage	V <sub>DSS</sub>	I <sub>D</sub> =-10mA, V <sub>GS</sub> =0	-30			V
Gate to source breakdown voltage	V <sub>GSS</sub>	I <sub>G</sub> =±100 μA, V <sub>DS</sub> =0	±20			V
Drain cut-off current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0			-10	μA
Gate leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±16V, V <sub>DS</sub> =0			±10	μA
Gate to source cutoff voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-1mA	-1.0		-2.0	V
Forward transfer admittance	Y <sub>fs</sub>	V <sub>DS</sub> =-10V, I <sub>D</sub> =-5A	10	16		S
Drain to source on-state resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-5A		65	65	mΩ
		V <sub>GS</sub> =-4.0V, I <sub>D</sub> =-5A		110	180	mΩ
Input capacitance	C <sub>iss</sub>	V <sub>DS</sub> =-10V, V <sub>GS</sub> =0, f=1MHZ		660		pF
Output capacitance	C <sub>oss</sub>			440		pF
Reverse transfer capacitance	C <sub>rss</sub>			140		pF
Turn-on delay time	t <sub>d(on)</sub>	V <sub>GS(on)</sub> =-10V, I <sub>D</sub> =-5A, R <sub>L</sub> =2Ω		12		ns
Rise time	t <sub>r</sub>			65		ns
Turn-off delay time	t <sub>d(off)</sub>			85		ns
Fall time	t <sub>f</sub>			65		ns