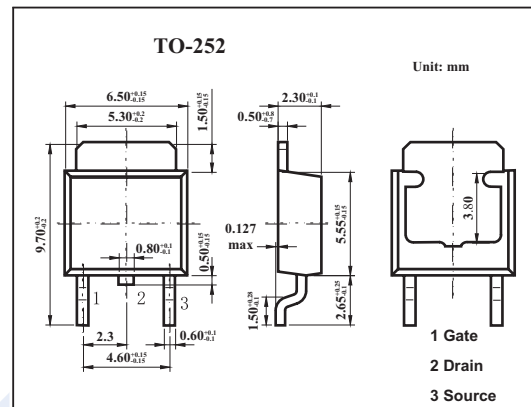
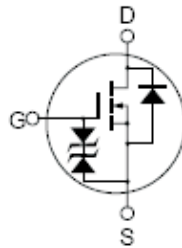


## Silicon N-Channel Power F-MOSFET

### 2SK3031

#### ■ Features

- Avalanche energy capacity guaranteed
- High-speed switching
- Low ON-resistance
- No secondary breakdown
- Low-voltage drive
- High electrostatic breakdown voltage



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

Parameter	Symbol	Rating	Unit	
Drain to source voltage	$V_{DS}$	100	V	
Gate to source voltage	$V_{GS}$	$\pm 20$	V	
Drain current	$I_D$	$\pm 15$	A	
	$I_{DP}^*$	$\pm 30$	A	
Power dissipation	$P_D$	$T_C=25^\circ\text{C}$	20	W
		$T_A=25^\circ\text{C}$	1	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  $\leq 1\%$

#### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain to source breakdown voltage	$V_{DS}$	$I_D=1\text{mA}, V_{GS}=0$	100			V
Drain cut-off current	$I_{DSS}$	$V_{DS}=80\text{V}, V_{GS}=0$			10	$\mu\text{A}$
Gate leakage current	$I_{GSS}$	$V_{GS}=\pm 20\text{V}, V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Gate threshold voltage	$V_{GS(th)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1		2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=8\text{A}$	4	7.5		S
Drain to source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=8\text{A}$		90	135	$\text{m}\Omega$
		$V_{GS}=4\text{V}, I_D=8\text{A}$		100	160	$\text{m}\Omega$
Input capacitance	$C_{iss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		300		pF
Output capacitance	$C_{oss}$			190		pF
Reverse transfer capacitance	$C_{rss}$			30		pF
Turn-on delay time	$t_{on}$				20	
Rise time	$t_r$	$I_D=8\text{A}, V_{GS(on)}=10\text{V}, R_L=3.75\Omega, V_{DD}=30\text{V}$		85		ns
Turn-off delay time	$t_{off}$			1440		ns
Fall time	$t_f$			330		ns