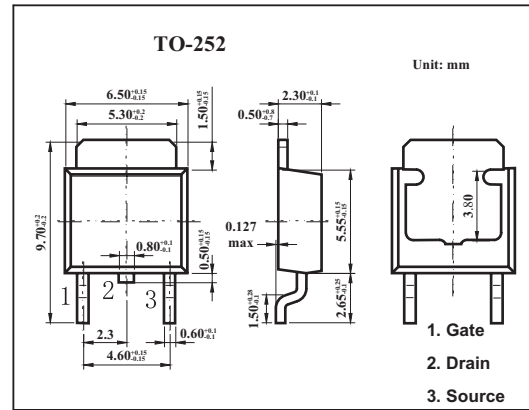


## Small Switching

## 2SK3050

## ■ Features

- Low on-resistance.
- Fast switching speed.
- Wide SOA (safe operating area).
- Gate-source voltage ( $V_{GS}$ ) guaranteed to be  $\pm 30V$ .
- Easily designed drive circuits.
- Easy to use in parallel.
- Silicon N-channel MOSFET

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

Parameter	Symbol	Rating	Unit
Drain to Source Voltage	$V_{DS}$	600	V
Gate to Source Voltage	$V_{GS}$	$\pm 30$	V
Drain Current(DC)	$I_D$	2	A
Drain Current (pulse) *	$I_{DP}$	6	A
Body to drain diode reverse drain current	$I_{DR}$	2	A
Body to drain diode reverse drain current(pulse) *	$I_{DRP}$	6	A
Total power dissipation ( $T_c=25^\circ\text{C}$ )	$P_D$	20	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

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

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Gate to source leak current	$I_{GSS}$	$V_{GS} = \pm 30V, V_{DS} = 0V$			$\pm 100$	nA
Drain to source breakdown voltage	$V_{(BR)DSS}$	$I_D = 1mA, V_{GS} = 0V$	600			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 600V, V_{GS} = 0V$			100	$\mu\text{A}$
Gate threshold voltage	$V_{GSth}$	$V_{DS} = 10V, I_D = 1mA$	2.0		4.0	V
Static Drain to source on statesresistance	$R_{DS(on)}$	$I_D = 1A, V_{GS} = 10V$		4.4	5.5	$\Omega$
Forward transfer admittance	$ y_{fs} $	$I_D = 1A, V_{DS} = 10V$	0.5	1.0		S
Input capacitance	$C_{iss}$	$V_{DS} = 10V$		280		pF
Output capacitance	$C_{oss}$	$V_{GS} = 0V$		48		pF
Reverse transfer capacitance	$C_{rss}$	$f = 1MHz$		16		pF
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V$		12		ns
Rise time	$t_r$	$R_L = 300\Omega$		17		ns
Turn-off delay time	$t_{d(off)}$	$R_G = 10\Omega$		29		ns
Fall time	$t_f$	$I_D = 1A, V_{DD} = 300V$		105		ns
Reverse recovery time	$t_{rr}$	$I_{DR} = 2A, V_{GS} = 0V$		460		ns
Reverse recovery charge	$Q_{rr}$	$di/dt = 100A/\mu\text{s}$		2.0		$\mu\text{C}$