

MOS Field Effect Transistor

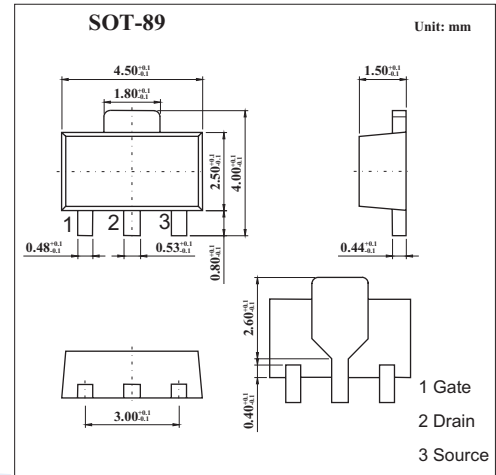
2SK1593

■ Features

- Directly driven by ICs having a 5V power supply.
- Has low on-state resistance.

$R_{DS(on)}=6.0\ \Omega\ \text{MAX.}@V_{GS}=4.0V, I_D=0.3A$

$R_{DS(on)}=5.0\ \Omega\ \text{MAX.}@V_{GS}=10V, I_D=0.3A$



■ 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}	± 20	V
Drain current (DC)	I_D	± 500	mA
Drain current(pulse) *	I_D	± 1.0	A
Power dissipation	P_D	2.0	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, duty cycle $\leq 5\%$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit	
Drain cut-off current	I_{DSS}	$V_{DS}=100V, V_{GS}=0$			1.0	μA	
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0$			± 10	μA	
Gate to source cutoff voltage	$V_{GS(off)}$	$V_{DS}=10V, I_D=1\text{mA}$	0.8	1.2	2.0	V	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=0.5A$	400	570		ms	
Drain to source on-state resistance	$R_{DS(on)}$	$V_{GS}=4.0V, I_D=0.3A$		4.0	6.0	Ω	
		$V_{GS}=10V, I_D=0.3A$		3.4	5.0	Ω	
Input capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0, f=1\text{MHz}$		55		pF	
Output capacitance	C_{oss}			25		pF	
Reverse transfer capacitance	C_{rss}			4.5		pF	
Turn-on delay time	$t_{d(on)}$				60		ns
Rise time	t_r		$I_D=0.3A, V_{GS(on)}=4V, R_L=33\ \Omega, V_{DD}=10V, R_G=10\ \Omega$		140		ns
Turn-off delay time	$t_{d(off)}$				140		ns
Fall time	t_f				90		ns

■ Marking

Marking	NP
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