

MOS Field Effect Transistor

2SK3901

■ Features

- Low On-state resistance
 $R_{DS(on)1} = 13\text{m}\Omega \text{ MAX. (}V_{GS} = 10\text{ V, }I_D = 30\text{A)}$
 $R_{DS(on)2} = 16.5\text{ m}\Omega \text{ MAX. (}V_{GS} = 4.5\text{ V, }I_D = 30\text{A)}$
- Low C_{iss} : $C_{iss} = 1950\text{ pF TYP.}$



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DS}	60	V
Gate to source voltage	V_{GS}	± 20	V
Drain current	I_D	± 60	A
	I_{DP}^*	± 150	A
Power dissipation	PD	$T_a = 25^\circ\text{C}$	1.5
		$T_c = 25^\circ\text{C}$	64
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	Test conditions	Min	Typ	Max	Unit
Drain cut-off current	I_{DSS}	$V_{DS} = 60\text{V, }V_{GS} = 0$			10	μA
Gate leakage current	I_{GSS}	$V_{GS} = \pm 20\text{V, }V_{DS} = 0$			± 10	μA
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} $	$V_{DS} = 10\text{V, }I_D = 30\text{A}$	18	36		S
Drain to source on-state resistance	$R_{DS(on)1}$	$V_{GS} = 10\text{V, }I_D = 30\text{A}$		10.3	13	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS} = 4.5\text{V, }I_D = 30\text{A}$		12.1	16.5	$\text{m}\Omega$
Input capacitance	C_{iss}	$V_{DS} = 10\text{V, }V_{GS} = 0, f = 1\text{MHz}$		1950		pF
Output capacitance	C_{oss}			380		pF
Reverse transfer capacitance	C_{rss}			150		pF
Turn-on delay time	t_{on}			12		ns
Rise time	t_r	$I_D = 30\text{A, }V_{GS(on)} = 10\text{V, }R_G = 0\ \Omega, V_{DD} = 30\text{V}$		6		ns
Turn-off delay time	t_{off}			48		ns
Fall time	t_f			5.0		ns
Total Gate Charge	Q_G		$V_{DD} = 48\text{V}$		40	
Gate to Source Charge	Q_{GS}	$V_{GS} = 10\text{V}$		7.5		nC
Gate to Drain Charge	Q_{GD}	$I_D = 60\text{A}$		10.0		nC