

## MOS Field Effect Transistor

### 2SK3354

#### ■ Features

- Super low on-state resistance:  
 $R_{DS(on)1} = 8.0 \text{ m}\Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 42 \text{ A)}$   
 $R_{DS(on)2} = 12 \text{ m}\Omega \text{ MAX. (} V_{GS} = 4 \text{ V, } I_D = 42 \text{ A)}$
- Low  $C_{iss}$ :  $C_{iss} = 6300 \text{ pF TYP.}$
- Built-in gate protection diode



#### ■ 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	$V_{GS(AC)}$	$\pm 20$	V	
Drain current	$I_D$	$\pm 83$	A	
	$I_{DP}^*$	$\pm 332$	A	
Power dissipation	$P_D$	$T_a=25^\circ\text{C}$	1.5	W
		$T_c=25^\circ\text{C}$	100	
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	$\mu\text{A}$
Gate leakage current	$I_{GSS}$	$V_{GS} = \pm 20\text{V}, V_{DS}=0$			$\pm 10$	$\mu\text{A}$
Gate cutoff 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} $	$V_{DS}=10\text{V}, I_D=41\text{A}$	35	59		S
Drain to source on-state resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=42\text{A}$		6.3	8.0	$\text{m}\Omega$
		$V_{GS}=4\text{V}, I_D=42\text{A}$		8.0	12	$\text{m}\Omega$
Input capacitance	$C_{iss}$			6300		pF
Output capacitance	$C_{oss}$	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		1000		pF
Reverse transfer capacitance	$C_{rss}$			490		pF
Turn-on delay time	$t_{on}$			100		ns
Rise time	$t_r$			1500		ns
Turn-off delay time	$t_{off}$	$I_D=42\text{A}, V_{GS(on)}=10\text{V}, R_G=10\Omega, V_{DD}=30\text{V}$		300		ns
Fall time	$t_f$			440		ns
Total Gate Charge	$Q_G$			106		nC
Gate to Source Charge	$Q_{GS}$	$V_{DD} = 48\text{V}, V_{GS} = 10 \text{ V, } I_D = 83\text{A}$		20		nC
Gate to Drain Charge	$Q_{GD}$			30		nC