

## MOS Field Effect Transistor 2SK3456

### ■ Features

- Low gate charge  
 $Q_G = 30 \text{ nC TYP. (} V_{DD} = 400 \text{ V, } V_{GS} = 10 \text{ V, } I_D = 12 \text{ A)}$
- Gate voltage rating  $\pm 30 \text{ V}$
- Low on-state resistance  
 $R_{DS(on)} = 0.60 \ \Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 6.0 \text{ A)}$
- Avalanche capability ratings
- Surface mount package available



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	$V_{DSS}$	500	V
Gate to source voltage	$V_{GSS}$	$\pm 30$	V
Drain current	$I_D$	$\pm 12$	A
	$I_{dp}^*$	$\pm 36$	A
Power dissipation	$P_D$	$T_c=25^\circ\text{C}$	100
		$T_a=25^\circ\text{C}$	1.5
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 cut-off current	$I_{DSS}$	$V_{DS}=500\text{V, } V_{GS}=0$			10	$\mu\text{A}$	
Gate leakage current	$I_{GSS}$	$V_{GS}=\pm 30\text{V, } V_{DS}=0$			$\pm 100$	$\mu\text{A}$	
Gate cutoff voltage	$V_{GS(off)}$	$V_{DS}=10\text{V, } I_D=1\text{mA}$	2.5		3.5	V	
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V, } I_D=6.0\text{A}$	2.0			S	
Drain to source on-state resistance	$R_{DS(on)1}$	$V_{GS}=10\text{V, } I_D=6.0\text{A}$		0.48	0.60	$\Omega$	
Input capacitance	$C_{iss}$	$V_{DS}=10\text{V, } V_{GS}=0, f=1\text{MHz}$		1620		pF	
Output capacitance	$C_{oss}$				250		pF
Reverse transfer capacitance	$C_{rss}$				10		pF
Turn-on delay time	$t_{on}$	$I_D=6.0\text{A, } V_{GS(on)}=10\text{V, } R_G=10 \ \Omega, V_{DD}=150\text{V}$		24		ns	
Rise time	$t_r$				18		ns
Turn-off delay time	$t_{off}$				50		ns
Fall time	$t_f$				15		ns
Total Gate Charge	$Q_G$				30		nC
Gate to Source Charge	$Q_{GS}$	$I_D=12\text{A, } V_{DD}=400\text{V, } V_{GS}=10 \text{ V}$		9		nC	
Gate to Drain Charge	$Q_{GD}$				11		nC