

MOS Field Effect Transistor 2SK3424

■ Features

- 4.5-V drive available
- Low on-state resistance
 $R_{DS(on)1} = 1.5\text{m}\Omega$ MAX. ($V_{GS} = 10\text{V}$, $I_D = 24\text{A}$)
- Low gate charge
 $Q_G = 34\text{ nC}$ TYP. ($I_D = 48\text{A}$, $V_{DD} = 24\text{V}$, $V_{GS} = 10\text{V}$)
- Built-in gate protection diode
- Surface mount device available



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

Parameter	Symbol	Rating	Unit
Drain to source voltage	V_{DS}	30	V
Gate to source voltage	V_{GS}	± 20	V
Drain current	I_D	± 48	A
	I_{dp}^*	± 192	A
Power dissipation	P_D	$T_c=25^\circ\text{C}$	50
		$T_a=25^\circ\text{C}$	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}	$V_{DS}=30\text{V}, V_{GS}=0$			10	μA
Gate leakage current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0$			± 10	μA
Gate cutoff voltage	$V_{GS(off)}$	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1.5		2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=24\text{A}$	13			S
Drain to source on-state resistance	$R_{DS(on)1}$	$V_{GS}=10\text{V}, I_D=24\text{A}$		7.7	11.5	$\text{m}\Omega$
	$R_{DS(on)2}$	$V_{GS}=4.5\text{V}, I_D=24\text{A}$		10.5	17.0	$\text{m}\Omega$
Input capacitance	C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		1900		pF
Output capacitance	C_{oss}			580		pF
Reverse transfer capacitance	C_{rss}			270		pF
Turn-on delay time	t_{on}			14		ns
Rise time	t_r	$I_D=24\text{A}, V_{GS(on)}=10\text{V}, R_G=10\Omega, V_{DD}=15\text{V}$		13		ns
Turn-off delay time	t_{off}			61		ns
Fall time	t_f			22		ns
Total Gate Charge	Q_G				34	
Gate to Source Charge	Q_{GS}	$I_D=48\text{A}, V_{DD}=24\text{V}, V_{GS}=10\text{V}$		6.4		nC
Gate to Drain Charge	Q_{GD}				9.1	