

2SK809, 2SK809A

Silicon N-channel Power F-MOS FET

■ Features

- Low ON resistance $R_{DS(on)}$: $R_{DS(on)} = 1.5\Omega$ (typ.)
- High switching rate : $t_f = 85\text{ns}$ (typ.)
- No secondary breakdown
- High breakdown voltage, large power

■ Application

- No contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching power source

■ Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Item	Symbol	Value	Unit	
Drain-source voltage	V_{DS}	2SK809	800	V
		2SK809A	900	
Gate-source voltage	V_{GS}	± 20	V	
Drain current	DC	I_D	5	A
	Peak-to-peak value	I_{DP}	10	
Power dissipation	$T_c = 25^\circ\text{C}$	P_D	100	W
	$T_a = 25^\circ\text{C}$		3.0	
Channel temperature	T_{ch}	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$	

■ Electrical Characteristics ($T_c = 25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Drain current	I_{DSS}	$V_{DS} = 640\text{V}$, $V_{GS} = 0$			0.1	mA
Gate-source current	I_{GSS}	$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0$			± 1	μA
Drain-source voltage	V_{DS}	$I_D = 1\text{mA}$, $V_{GS} = 0$	800			V
			900			
Gate threshold voltage	V_{th}	$V_{DS} = 25\text{V}$, $I_D = 1\text{mA}$	1		5	V
Drain-source ON resistance	$R_{DS(on)}$	$V_{GS} = 10\text{V}$, $I_D = 3\text{A}$		1.5	3.0	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 25\text{V}$, $I_D = 3\text{A}$	1.5	2.8		S
Input capacitance	C_{iss}	$V_{DS} = 20\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$		1270		pF
Output capacitance	C_{oss}			220		pF
Reverse transfer capacitance	C_{rss}			80		pF
Turn-on time	t_{on}		$V_{GS} = 10\text{V}$, $I_D = 3\text{A}$		60	
Fall time	t_f	$V_{DD} = 200\text{V}$, $R_L = 66\Omega$		85		ns
Delay time	$t_d(\text{off})$			280		ns

■ Package Dimensions

