

2SK1035

Silicon N-channel Power F-MOS FET

■ Features

- Low ON resistance $R_{DS(on)}$: $R_{DS(on)} = 0.2\Omega$ (typ.)
- High switching rate : $t_r = 100\text{ns}$ (typ.)
- No secondary breakdown
- Low voltage drive is possible ($V_{GS} = 4\text{V}$).

■ Application

- DC-DC converter
- No contact relay
- Solenoid drive
- Motor drive

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

Item	Symbol	Value	Unit	
Drain-source voltage	V_{DSS}	150	V	
Gate-source voltage	V_{GSS}	± 20	V	
Drain current	At 4V driving	I_D	12	A
	Free to peak value	I_{DF}	25	
Power dissipation	$T_c = 25^\circ\text{C}$	P_D	4.5	W
	$T_a = 25^\circ\text{C}$		2.0	
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}	$V_{DS} = 130\text{V}$, $V_{GS} = 0$			10	μA
Gate-source current	I_{GSS}	$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0$			± 1	μA
Drain-source voltage	V_{DSS}	$I_D = 1\text{mA}$, $V_{GS} = 0$	150			V
Gate threshold voltage	V_{th}	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$	1		2.5	V
Drain-source ON resistance	$R_{DS(on)1}$	$V_{GS} = 10\text{V}$, $I_D = 6\text{A}$		0.2	0.3	Ω
Drain-source ON resistance	$R_{DS(on)2}$	$V_{GS} = 4\text{V}$, $I_D = 6\text{A}$		0.23	0.35	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}$, $I_D = 6\text{A}$	5	8.5		S
Input capacitance	C_{iss}	$V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1\text{MHz}$		1500		pF
Output capacitance	C_{oss}		400		pF	
Reverse transfer capacitance	C_{rss}		80		pF	
Turn-on time	t_{on}	$V_{GS} = 10\text{V}$, $I_D = 6\text{A}$ $V_{DD} \approx 100\text{V}$, $R_L = 16.6\Omega$		50		ns
Fall time	t_f		100		ns	
Delay time	$t_d(\text{off})$		320		ns	

■ Package Dimensions

