

2SK963

Silicon N-Channel Power F-MOS

■ Features

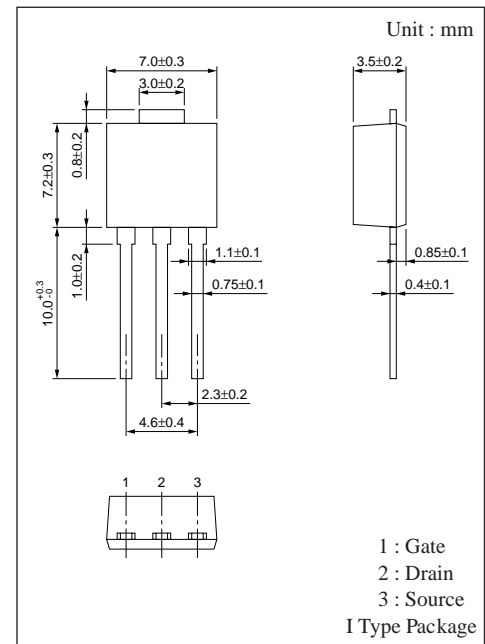
- Low ON-resistance $R_{DS(on)}$: $R_{DS(on)} = 0.45\Omega(\text{typ})$
- High-speed switching : $t_f = 45\text{ns}(\text{typ})$
- No secondary breakdown

■ Applications

- DC-DC converter
- Non-contact relay
- Solenoid drive
- Motor drive

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

Parameter	Symbol	Rating	Unit	
Drain-Source breakdown voltage	V_{DSS}	250	V	
Gate-Source voltage	V_{GSS}	± 20	V	
Drain current	DC	I_D	± 5	A
	Pulse	I_{DP}	± 10	A
Allowable power dissipation	$T_c = 25^\circ\text{C}$	P_D	15	W
	$T_a = 25^\circ\text{C}$		1.3	
Channel temperature	T_{ch}	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	



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

Parameter	Symbol	Condition	Min	Typ	Max	Unit	
Drain-Source cut-off current	I_{DSS}	$V_{DS}=200\text{V}, V_{GS}=0$			0.1	mA	
Gate-Source leakage current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0$			± 1	μA	
Drain-Source breakdown voltage	V_{DSS}	$I_D=1\text{m}, CV_{GS}=0$	250			V	
Gate threshold voltage	V_{th}	$V_{DS}=10\text{V}, I_D=1\text{mA}$	1		5	V	
Drain-Source ON-resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=3\text{A}$		0.45	0.7	Ω	
Forward transadmittance	$ Y_{fs} $	$V_{DS}=10\text{V}, I_D=3\text{A}$	1.8	3		S	
Input capacitance	C_{iss}	$V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$		390		pF	
Output capacitance	C_{oss}				160		pF
Feedback capacitance	C_{rss}				80		pF
Turn-on time	t_{on}	$V_{GS}=10\text{V}, I_D=3\text{A}$ $V_{DD}=100\text{V}, R_L=33\Omega$		30		ns	
Fall time	t_f				45		ns
Turn-off time (delay time)	$t_{d(off)}$				90		ns

