

2SK3022

Silicon N-channel power MOSFET

■ Features

- Avalanche energy capability guaranteed
- High-speed switching
- Low ON resistance R_{on}
- No secondary breakdown
- Low-voltage drive
- High electrostatic energy capability

■ Applications

- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

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

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	60	V
Gate-source surrender voltage	V_{GSS}	± 20	V
Drain current	I_D	± 5	A
Peak drain current	I_{DP}	± 15	A
Avalanche energy capability *	EAS	6.25	mJ
Power dissipation	P_D	10	W
		$T_a = 25^\circ\text{C}$ 1	
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: $L = 0.5 \text{ mH}$, $I_L = 5 \text{ A}$, 1 pulse

■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1 \text{ mA}$, $V_{GS} = 0$	60			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 50 \text{ V}$, $V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0$			± 10	μA
Gate threshold voltage	V_{th}	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$	1.0		2.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10 \text{ V}$, $I_D = 3 \text{ A}$	2	4		S
Drain-source ON resistance	$R_{DS(on)1}$	$V_{GS} = 10 \text{ V}$, $I_D = 3 \text{ A}$		90	130	m Ω
	$R_{DS(on)2}$	$V_{GS} = 4 \text{ V}$, $I_D = 3 \text{ A}$		130	200	
Diode forward voltage	V_{DSF}	$I_{DR} = 5 \text{ A}$, $V_{GS} = 0$			-1.3	V
Short-circuit forward transfer capacitance (Common source)	C_{iss}	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$		220		pF
Short-circuit output capacitance (Common source)	C_{oss}			90		pF
Reverse transfer capacitance (Common source)	C_{rss}			50		pF
Turn-on delay time	$t_{d(on)}$		$V_{DD} = 30 \text{ V}$, $I_D = 3 \text{ A}$, $R_L = 10 \Omega$		15	
Rise time	t_r	$V_{GS} = 10 \text{ V}$		30		ns
Fall time	t_f			170		ns
Turn-off delay time	$t_{d(off)}$			550		ns
Thermal resistance (ch-c)	$R_{th(ch-c)}$				12.5	$^\circ\text{C/W}$
Thermal resistance (ch-a)	$R_{th(ch-a)}$				125	$^\circ\text{C/W}$

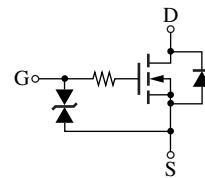
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

■ Package

- Code
U-G2
- Pin Name
1: Gate
2: Drain
3: Source

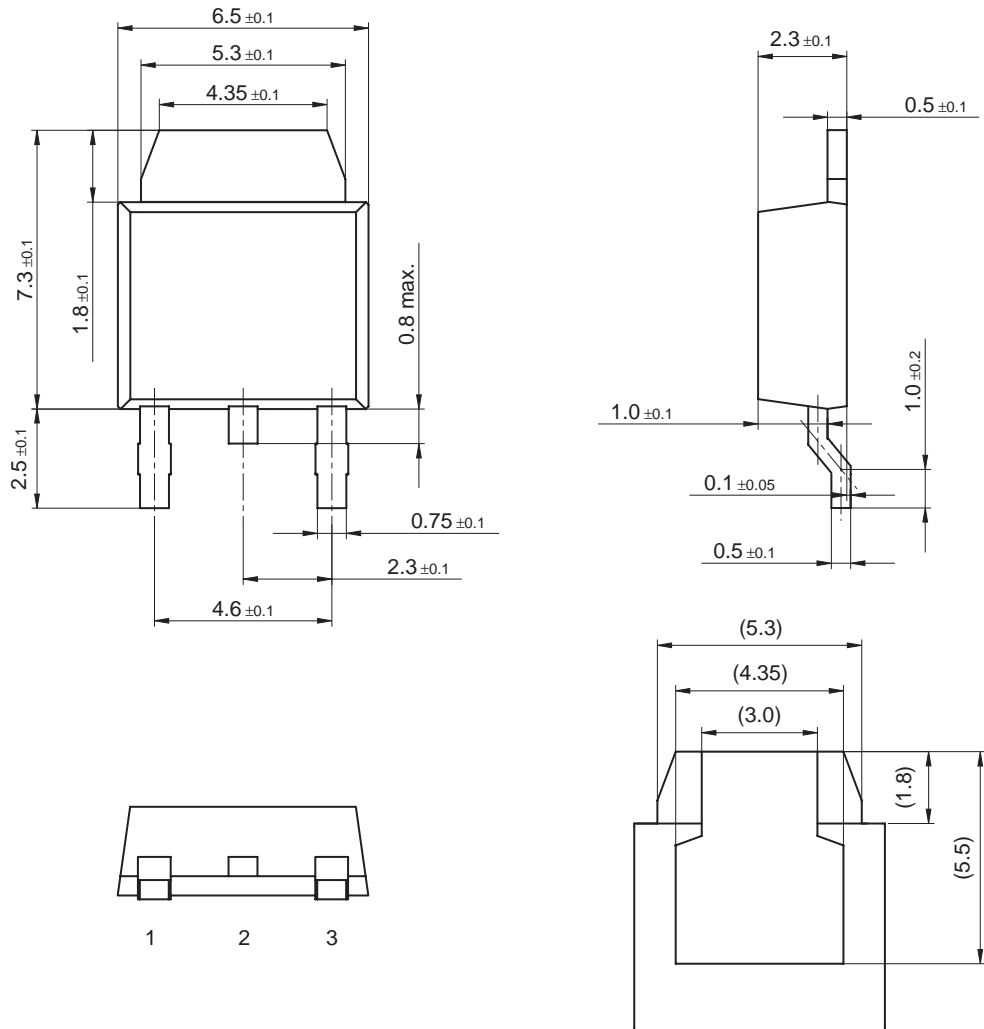
■ Marking Symbol: K3022

■ Internal Connection



U-G2

Unit: mm



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