



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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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	$\text{m}\Omega$	
	$R_{DS(on)2}$	$V_{GS} = 4 \text{ V}$, $I_D = 3 \text{ A}$		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	
					90		pF
					50		
Reverse transfer capacitance (Common source)	C_{rss}					pF	
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 30 \text{ V}$, $I_D = 3 \text{ A}$, $R_L = 10 \Omega$ $V_{GS} = 10 \text{ V}$		15		ns	
Rise time	t_r			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	$^\circ\text{C}/\text{W}$	
Thermal resistance (ch-a)	$R_{th(ch-a)}$				125	$^\circ\text{C}/\text{W}$	

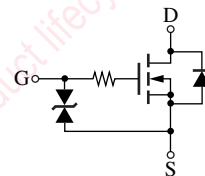
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

■ Package

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

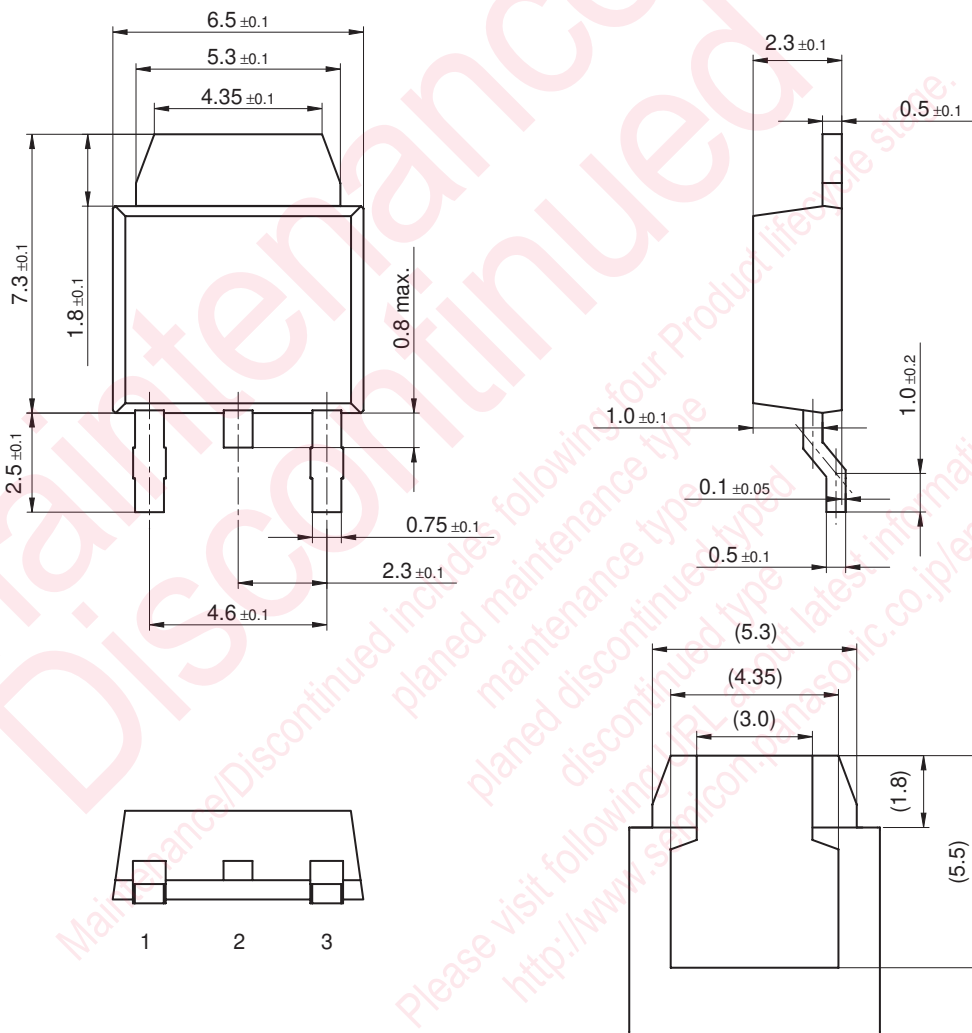
■ Marking Symbol: K3022

■ Internal Connection



U-G2

Unit: mm



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