2SK3025

Silicon N-channel power MOS FET

■ Features

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

■ Applications

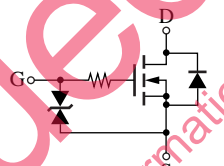
- Non-contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching mode regulator

■ Package

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

■ Marking Symbol: K3025

■ Internal Connection



■ Absolute Maximum Ratings $T_C = 25°C$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	60	V
Gate-source surrender voltage	V_{GSS}	±20	V
Drain current	I_D	±30	A
Peak drain current	I_{DP}	±90	A
Avalanche energy capability *	EAS	45	mJ
Power dissipation	P_D	25	W
$T_a = 25°C$		1	
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) *: L = 0.1 mH, I_L = 30 A, 1 pulse

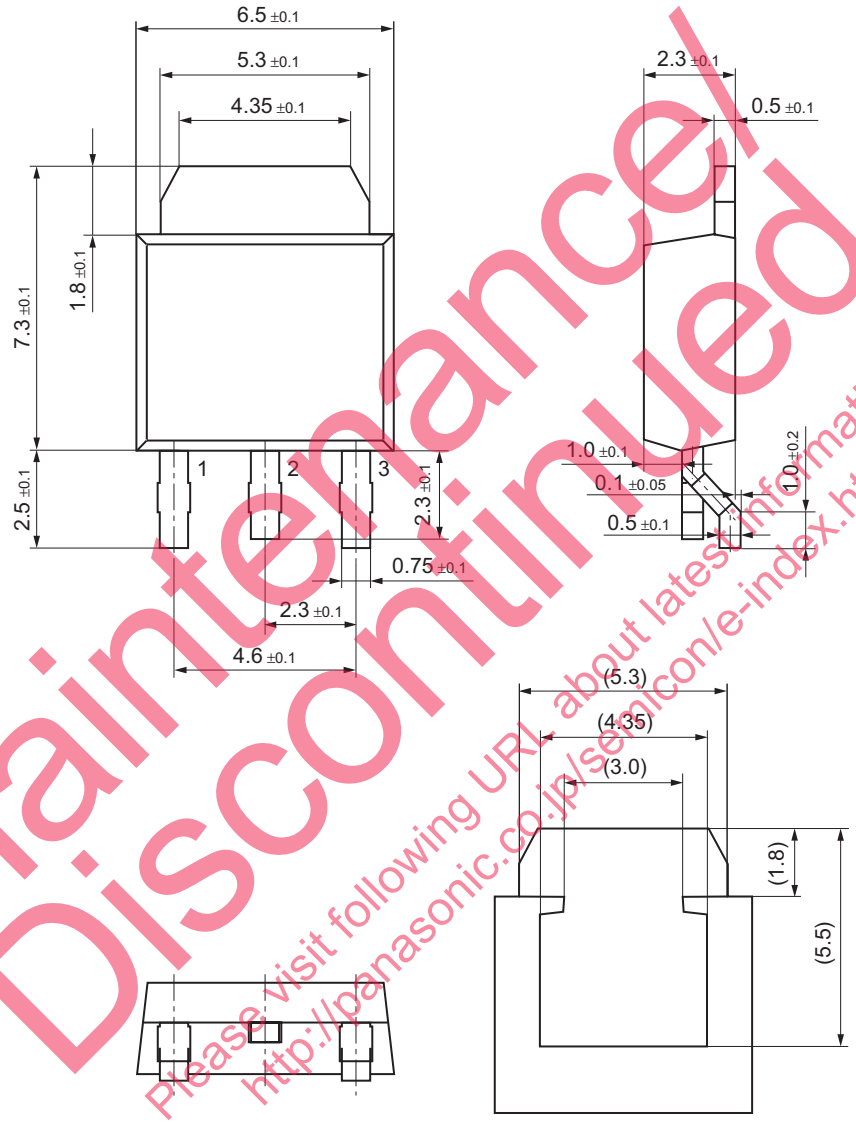
■ Electrical Characteristics $T_C = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	60			V
Drain-source cutoff current	I_{DSS}	V_{DS} = 50 V, V_{GS} = 0			10	μA
Gate-source cutoff current	I_{GSS}	V_{GS} = ±20 V, V_{DS} = 0			±10	μA
Gate threshold voltage	V_{th}	V_{DS} = 10 V, I_D = 1 mA	1.0		2.5	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = 10 V, I_D = 15 A	10	18		S
Drain-source ON resistance	$R_{DS(on)1}$	V_{GS} = 10 V, I_D = 15 A		25	40	mΩ
	$R_{DS(on)2}$	V_{GS} = 4 V, I_D = 15 A		35	55	
Diode forward voltage	V_{DSF}	I_{DR} = 15 A, V_{GS} = 0			−1.3	V
Short-circuit forward transfer capacitance (Common source)	C_{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz		1 200		pF
Short-circuit output capacitance (Common source)	C_{oss}			400		pF
Reverse transfer capacitance (Common source)	C_{rss}			200		pF
Turn-on delay time	$t_{d(on)}$	V_{DD} = 30 V, I_D = 15 A, R_L = 2 Ω		10		ns
Rise time	t_r	V_{GS} = 10 V		20		ns
Fall time	t_f			140		ns
Turn-off delay time	$t_{d(off)}$			350		ns
Thermal resistance (ch-c)	$R_{th(ch-c)}$				5.0	°C/W
Thermal resistance (ch-a)	$R_{th(ch-a)}$				125	°C/W

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

U-DL

Unit: mm



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