

# 2SK3636

## Silicon N-channel power MOSFET

For high-speed switching

### ■ Features

- Avalanche energy capacity guaranteed:  $EAS > 20$  mJ
- Gate-source surrender voltage  $V_{GSS} = \pm 30$  V guaranteed
- High-speed switching:  $t_f = 50$  ns
- No secondary breakdown

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

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	$V_{DSS}$	800	V
Gate-source surrender voltage	$V_{GSS}$	$\pm 30$	V
Drain current	$I_D$	$\pm 3$	A
Peak drain current	$I_{DP}$	$\pm 6$	A
Avalanche energy capability *	EAS	20	mJ
Power dissipation	$P_D$	35	W
		$T_a = 25^\circ\text{C}$	2.0
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

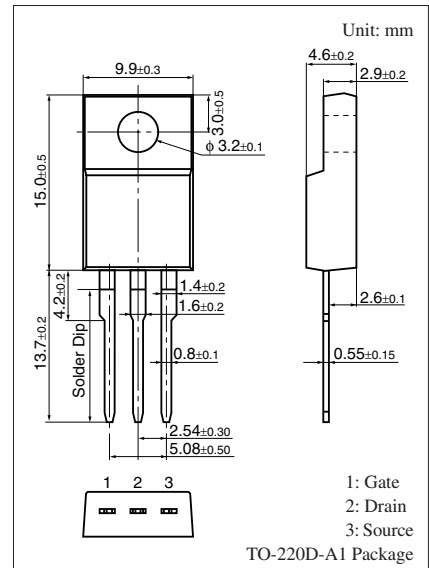
Note) \*:  $L = 5$  mH,  $I_L = 3$  A, 1 pulse

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	$V_{DSS}$	$I_D = 1$ mA, $V_{GS} = 0$	800			V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 640$ V, $V_{GS} = 0$			100	$\mu\text{A}$
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 30$ V, $V_{DS} = 0$			$\pm 1$	$\mu\text{A}$
Gate threshold voltage	$V_{th}$	$V_{DS} = 25$ V, $I_D = 1$ mA	2.0		5.0	V
Forward transfer admittance *	$ Y_{fs} $	$V_{DS} = 25$ V, $I_D = 2$ mA	1.5	2.4		V
Drain-source ON resistance *	$R_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 2$ mA		3.2	4.0	$\Omega$
Diode forward voltage *	$V_{DSF}$	$I_{DR} = 3$ A, $V_{GS} = 0$			-1.6	V
Short-circuit forward transfer capacitance (Common source)	$C_{iss}$	$V_{DS} = 10$ V, $V_{GS} = 0$ , $f = 1$ MHz		730		pF
				90		pF
				40		pF
Reverse transfer capacitance (Common source)	$C_{rss}$					pF
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 200$ V, $I_D = 2$ A, $R_L = 100$ $\Omega$ $V_{GS} = 10$ V		35		ns
Rise time	$t_r$			60		ns
Fall time	$t_f$			50		ns
Turn-off delay time	$t_{d(off)}$			160		ns
Thermal resistance (ch-c)	$R_{th(ch-c)}$				3.6	$^\circ\text{C}/\text{W}$
Thermal resistance (ch-a)	$R_{th(ch-a)}$				62.5	$^\circ\text{C}/\text{W}$

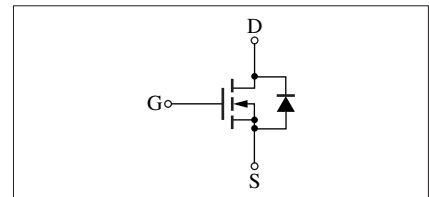
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Pulse measurement



Marking Symbol: K3636

Internal Connection



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