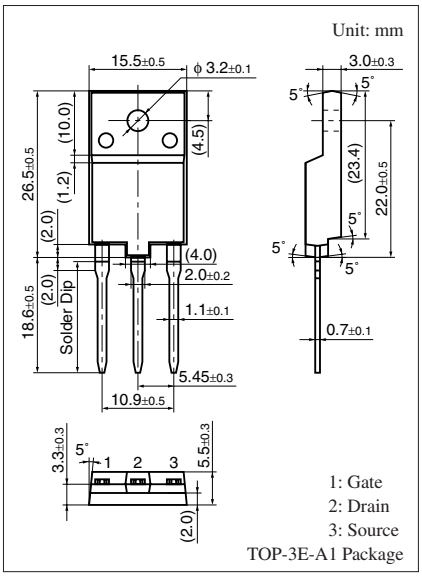
2SK3637

Silicon N-channel power MOSFET

For PDP/For high-speed switching



■ Features

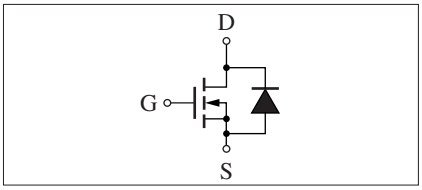
- Low on-resistance, low Q_g
- High avalanche resistance

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Drain-source surrender voltage		V_{DSS}	200	V
Gate-source surrender voltage		V_{GSS}	±30	V
Drain current		I_D	50	A
Peak drain current		I_{DP}	200	A
Avalanche energy capability *		EAS	2000	mJ
Power dissipation		P_D	100	W
	$T_a = 25°C$		3	
Channel temperature		T_{ch}	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

Note) *: L = 0.8 mH, I_L = 50 A, V_{DD} = 100 V, 1 pulse, T_a = 25°C

Internal Connection



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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Gate-drain surrender voltage	V_{DSS}	I_D = 1 mA, V_{GS} = 0	200			V
Diode forward voltage	V_{DSF}	I_{DR} = 50 A, V_{GS} = 0			−1.5	V
Gate threshold voltage	V_{th}	V_{DS} = 25 V, I_D = 10 mA	2		4	V
Drain-source cutoff current	I_{DSS}	V_{DS} = 160 V, V_{GS} = 0			100	μA
Gate-source cutoff currentt	I_{GSS}	V_{GS} = ±30 V, V_{DS} = 0			±1	μA
Drain-source on resistance	$R_{DS(on)}$	V_{GS} = 10 V, I_D = 25 A		29	40	mΩ
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = 25 V, I_D = 25 A	15	30		S
Short-circuit forward transfer capacitance (Common-source)	C_{iss}	V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz		4550		pF
Short-circuit output capacitance (Common-source)	C_{oss}			750		pF
Reverse transfer capacitance (Common-source)	C_{rss}			75		pF
Turn-on delay time	$t_{d(on)}$	V_{DD} = 100 V, I_D = 25 A		50		ns
Rise time	t_r	R_L = 4 Ω, V_{GS} = 10 V		125		ns
Turn-off delay time	$t_{d(off)}$			390		ns
Fall time	t_f			140		ns
Reverse recovery time	t_{rr}	L = 230 μH, V_{DD} = 100 V		210		ns
Reverse recovery charge	Q_{rr}	I_{DR} = 25 A, di /dt = 100 A/ μs		820		nC

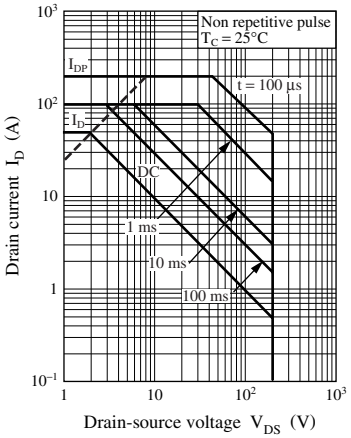
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Total gate charge	Q_g	V_{DD} = 100 V, I_D = 25 A		85		nC
Gate-source charge	Q_{gs}	V_{GS} = 10 V		30		nC
Gate-drain charge	Q_{gd}			12		nC
Channel-case heat resistance	$R_{th(ch-c)}$				1.25	°C/W
Channel-atmosphere heat resistance	$R_{th(ch-a)}$				41.6	°C/W

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

Safe operation area



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