

2SK3318

Silicon N-channel power MOSFET

For switching

■ Features

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

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

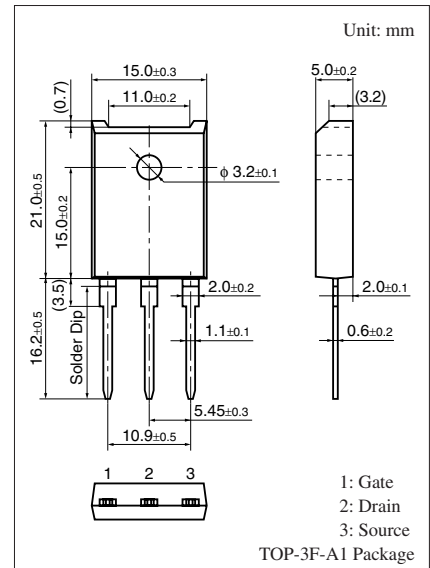
Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V_{DSS}	600	V
Gate-source surrender voltage	V_{GSS}	± 30	V
Drain current	I_D	± 15	A
Peak drain current	I_{DP}	± 60	A
Avalanche energy capability *	EAS	112.5	mJ
Power dissipation	P_D	100	W
	$T_a = 25^\circ\text{C}$	3	
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Note) *: $L = 1 \text{ mH}$, $I_L = 15 \text{ A}$, 1 pulse

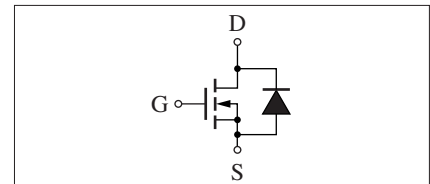
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Gate-drain surrender voltage	V_{DSS}	$I_D = 1 \text{ mA}$, $V_{GS} = 0$	600			V
Diode forward voltage	V_{DSF}	$I_{DR} = 15 \text{ A}$, $V_{GS} = 0$			-1.5	V
Gate threshold voltage	V_{th}	$V_{DS} = 25 \text{ V}$, $I_D = 1 \text{ mA}$	2		4	V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 480 \text{ V}$, $V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 30 \text{ V}$, $V_{DS} = 0$			± 1	μA
Drain-source on resistance	$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$, $I_D = 7.5 \text{ A}$		0.33	0.46	Ω
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 25 \text{ V}$, $I_D = 7.5 \text{ A}$	6	10		S
Short-circuit forward transfer capacitance (Common-source)	C_{iss}	$V_{DS} = 20 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$		3500		pF
Short-circuit output capacitance (Common-source)	C_{oss}			340		pF
Reverse transfer capacitance (Common-source)	C_{rss}			50		pF
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 150 \text{ V}$, $I_D = 7.5 \text{ A}$ $R_L = 20 \Omega$, $V_{GS} = 10 \text{ V}$		40		ns
Rise time	t_r			55		ns
Turn-off delay time	$t_{d(off)}$			310		ns
Fall time	t_f			70		ns
Channel-case heat resistance	$R_{th(ch-c)}$				1.25	$^\circ\text{C/W}$
Channel-atmosphere heat resistance	$R_{th(ch-a)}$				41.7	$^\circ\text{C/W}$

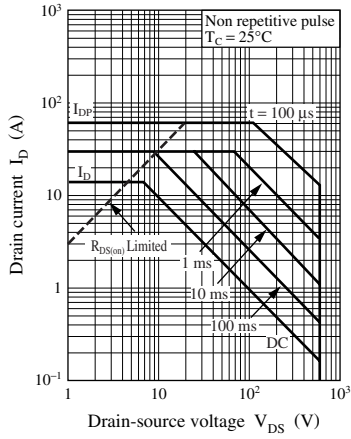
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.



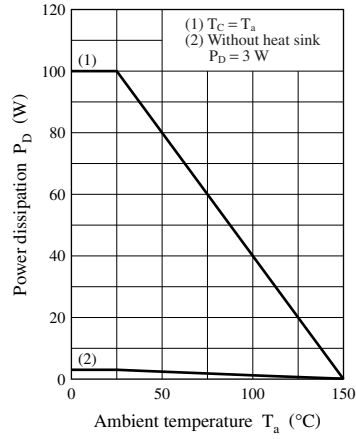
Internal Connection



Safe operation area



$P_D - T_a$



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