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# 2SK3318

**Power MOSFETs** 

## Silicon N-channel power MOSFET

#### For switching

#### ■ Features

- Avalanche energy capability guaranteed
- High-speed switching
- Low ON resistance Ron
- No secondary breakdown

### ■ Absolute Maximum Ratings $T_C = 25$ °C

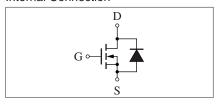
Parameter	Symbol	Symbol Rating	
Drain-source surrender voltage	$V_{DSS}$	600	V
Gate-source surrender voltage	V <sub>GSS</sub>	±30	V
Drain current	$I_D$	±15	A
Peak drain current	$I_{DP}$	±60	A
Avalanche energy capability *	EAS	112.5	mJ
Power	$P_{\mathrm{D}}$	100	W
dissipation $T_a = 25^{\circ}C$		3	
Channel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

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

#### Unit: mm 15.0±0.3 (3.2) 11.0+0.2 ф 3.2±0.1 21.0±0.5 15.0±0.2 2.0±0.1 2.0±0.2 16.2±0.5 1.1±0.1 0.6±0.2 5.45±0.3 1: Gate 2: Drain 3: Source TOP-3F-A1 Package

**Panasonic** 

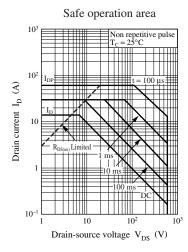
#### Internal Connection

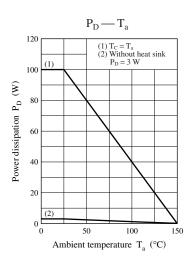


### ■ Electrical Characteristics $T_C = 25$ °C $\pm 3$ °C

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Gate-drain surrender voltage	V <sub>DSS</sub>	$I_D = 1 \text{ mA}, V_{GS} = 0$	600			V
Diode forward voltage	V <sub>DSF</sub>	$I_{DR} = 15 \text{ A}, V_{GS} = 0$			-1.5	V
Gate threshold voltage	V <sub>th</sub>	$V_{DS} = 25 \text{ V}, I_{D} = 1 \text{ mA}$	2		4	V
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 480 \text{ V}, V_{GS} = 0$			10	μΑ
Gate-source cutoff currentt	$I_{GSS}$	$V_{GS} = \pm 30 \text{ V}, V_{DS} = 0$			±1	μΑ
Drain-source on resistance	R <sub>DS(on)</sub>	$V_{GS} = 10 \text{ V}, I_D = 7.5 \text{ A}$		0.33	0.46	Ω
Forward transfer admittance	Y <sub>fs</sub>	$V_{DS} = 25 \text{ V}, I_{D} = 7.5 \text{ A}$	6	10		S
Short-circuit forward transfer capacitance (Common-source)	C <sub>iss</sub>	$V_{DS} = 20 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$		3 500		pF
Short-circuit output capacitance (Common-source)	C <sub>oss</sub>			340		pF
Reverse transfer capacitance (Common-source)	C <sub>rss</sub>			50		pF
Turn-on delay time	t <sub>d(on)</sub>	$V_{DD} = 150 \text{ V}, I_D = 7.5 \text{ A}$		40		ns
Rise time	t <sub>r</sub>	$R_{L} = 20 \Omega, V_{GS} = 10 V$		55		ns
Turn-off delay time	t <sub>d(off)</sub>			310		ns
Fall time	t <sub>f</sub>			70		ns
Channel-case heat resistance	R <sub>th(ch-c)</sub>				1.25	°C/W
Channel-atmosphere heat resistance	R <sub>th(ch-a)</sub>				41.7	°C/W

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





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