

2SK3192

Silicon N-channel power MOSFET

■ Features

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

■ Applications

- PDP
- Switching mode regulator

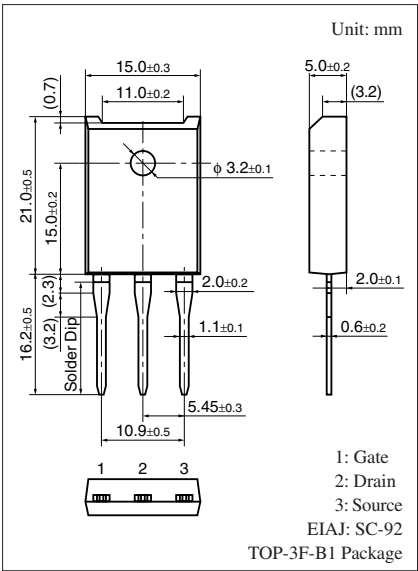
■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	V _{DSS}	250	V
Gate-source surrender voltage	V _{GSS}	±30	V
Drain current	I _D	±30	A
Peak drain current	I _{DP}	±120	A
Avalanche energy capability *	EAS	925	mJ
Power dissipation	P _D	100	W
		3	
T _a = 25°C			
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

Note) *: $L = 1.74$ mH, $I_L = 30$ A, $V_{DD} = 50$ V, 1 pulse, $T_a = 25^\circ\text{C}$

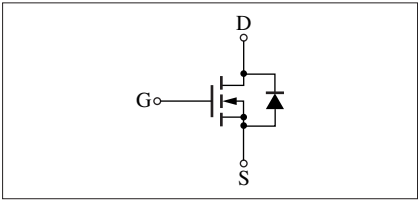
■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain-source surrender voltage	V_{DSS}	$I_D = 1$ mA, $V_{GS} = 0$	250			V
Drain-source cutoff current	I_{DSS}	$V_{DS} = 200$ V, $V_{GS} = 0$			10	μA
Gate-source cutoff current	I_{GSS}	$V_{GS} = \pm 30$ V, $V_{DS} = 0$			± 1	μA
Gate threshold voltage	V_{th}	$V_{DS} = 10$ V, $I_D = 1$ mA	2		4	V
Drain-source ON resistance	$R_{DS(on)}$	$V_{GS} = 10$ V, $I_D = 15$ A		50	68	$\text{m}\Omega$
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10$ V, $I_D = 15$ A	8	15		S
Short-circuit forward transfer capacitance (Common source)	C_{iss}	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ MHz		4 200		pF
Short-circuit output capacitance (Common source)	C_{oss}			1 600		pF
Reverse transfer capacitance (Common source)	C_{rss}			650		pF
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 100$ V, $I_D = 15$ A, $R_L = 6.7$ Ω $V_{GS} = 10$ V		45		ns
Rise time	t_r			115		ns
Turn-off delay time	$t_{d(off)}$			330		ns
Fall time	t_f			130		ns



Marking Symbol: K3192

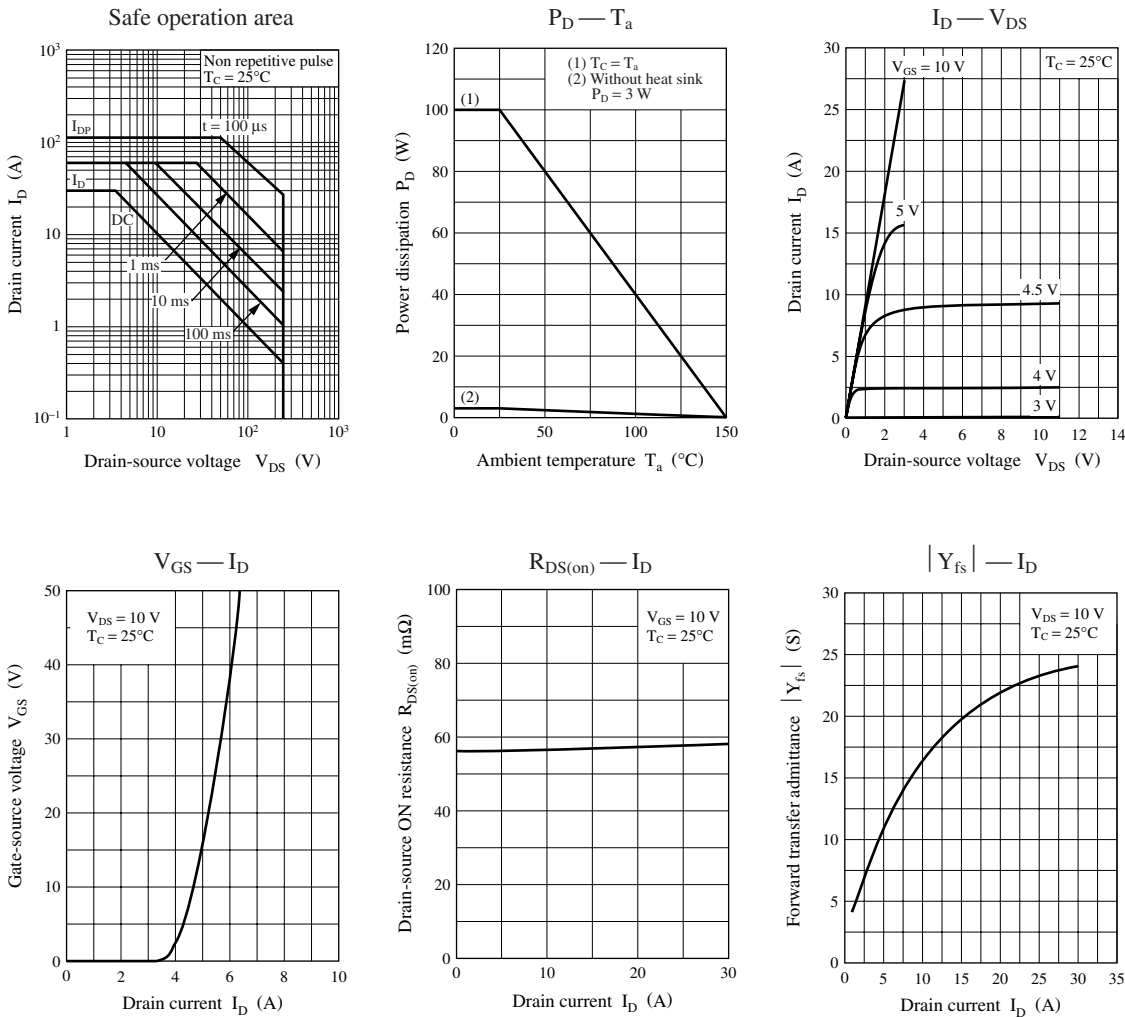
Internal Connection

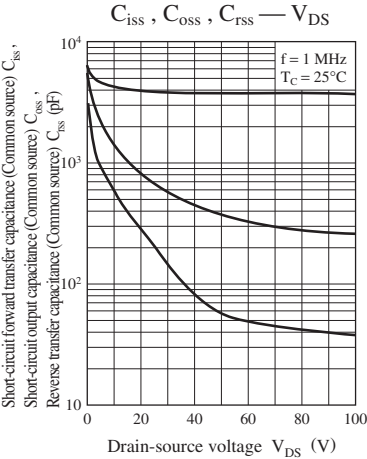


■ Electrical Characteristics (continued) $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Diode forward voltage	V_{DSF}	$I_{DR} = 30\text{ A}$, $V_{GS} = 0$			-1.5	V
Reverse recovery time	t_{rr}	$L = 230\text{ }\mu\text{H}$, $V_{DD} = 100\text{ V}$		260		ns
Reverse recovery charge	Q_{rr}	$I_{DR} = 15\text{ A}$, $di/dt = 100\text{ A}/\mu\text{s}$		1.6		μC
Gate charge load	Q_g	$V_{DD} = 100\text{ V}$, $I_D = 15\text{ A}$		95		nC
Gate-source charge	Q_{gs}	$V_{GS} = 10\text{ V}$		34		nC
Gate-drain charge	Q_{gd}			12		nC
Thermal resistance (ch-c)	$R_{th(ch-c)}$				1.25	$^\circ\text{C}/\text{W}$
Thermal resistance (ch-a)	$R_{th(ch-a)}$				41.7	$^\circ\text{C}/\text{W}$

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





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