

# 2SK3723

## N-channel enhancement mode MOSFET

### ■ Features

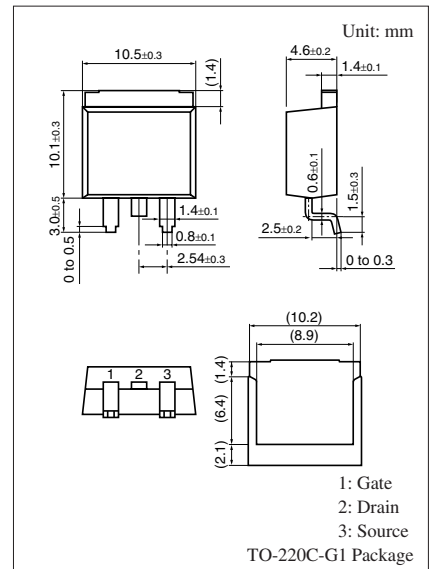
- Low on-resistance, low  $Q_g$
- High avalanche resistance

### ■ Applications

- For PDP
- For high-speed switching

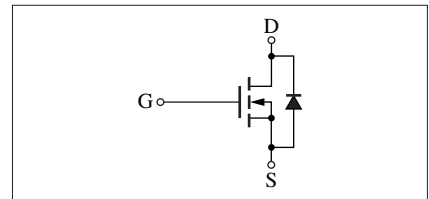
### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source surrender voltage	$V_{DSS}$	150	V
Gate-source surrender voltage	$V_{GSS}$	$\pm 30$	V
Drain current	$I_D$	30	A
Peak drain current	$I_{DP}$	120	A
Power dissipation	$P_D$	50	W
		$T_a = 25^\circ\text{C}$	3
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: K3723

Internal Connection



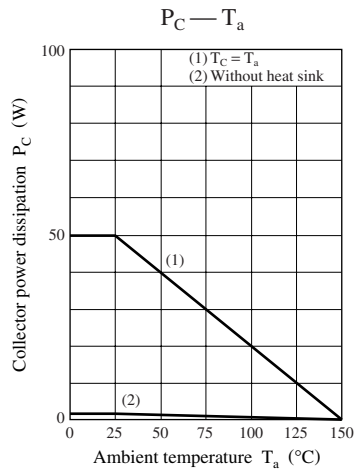
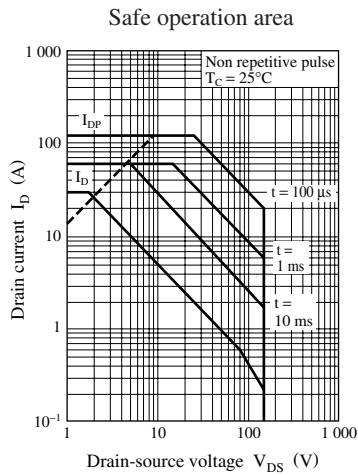
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit	
Drain-source surrender voltage	$V_{DSS}$	$I_D = 1 \text{ mA}$ , $V_{GS} = 0$	150			V	
Gate threshold voltage	$V_{th}$	$V_{DS} = 25 \text{ V}$ , $I_D = 1 \text{ mA}$	2		4	V	
Drain-source cutoff current	$I_{DSS}$	$V_{DS} = 120 \text{ V}$ , $V_{GS} = 0$			100	$\mu\text{A}$	
Gate-source cutoff current	$I_{GSS}$	$V_{GS} = \pm 30 \text{ V}$ , $V_{DS} = 0$			$\pm 1$	$\mu\text{A}$	
Drain-source ON resistance	$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 15 \text{ A}$		33	42	$\text{m}\Omega$	
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 25 \text{ V}$ , $I_D = 15 \text{ A}$	8	18		S	
Short-circuit forward transfer capacitance (Common-source)	$C_{iss}$	$V_{DS} = 25 \text{ V}$ , $V_{GS} = 0$ , $f = 1 \text{ MHz}$		2900		pF	
					618		pF
					91		pF
Turn-on delay time	$t_{d(on)}$	$V_{DD} \approx 100 \text{ V}$ , $I_D = 15 \text{ A}$ $R_L = 6.7 \Omega$ , $V_{GS} = 10 \text{ V}$		32		ns	
Rise time	$T_r$			46		ns	
Turn-off delay time	$t_{d(off)}$			227		ns	
Fall time	$t_f$			66		ns	

■ 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	$t_{rr}$	$L = 230\ \mu\text{H}, V_{DD} = 100\text{ V}$ $I_{DR} = 15\text{ A}, di/dt = 100\text{ A}/\mu\text{s}$		130		ns
Reverse recovery charge	$Q_{rr}$			533		nC
Gate charge load	$Q_g$	$V_{DD} = 100\text{ V}, I_D = 15\text{ A}$ $V_{GS} = 10\text{ V}$		55.4		nC
Gate-source charge	$Q_{gs}$			9.1		nC
Gate-drain charge	$Q_{gd}$			22.4		nC
Thermal resistance (ch-c)	$R_{th(ch-c)}$				2.5	$^\circ\text{C}/\text{W}$
Thermal resistance (ch-a)	$R_{th(ch-a)}$				89.2	$^\circ\text{C}/\text{W}$

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



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