

2SK123

Silicon N-Channel Junction FET

For impedance conversion in low frequency

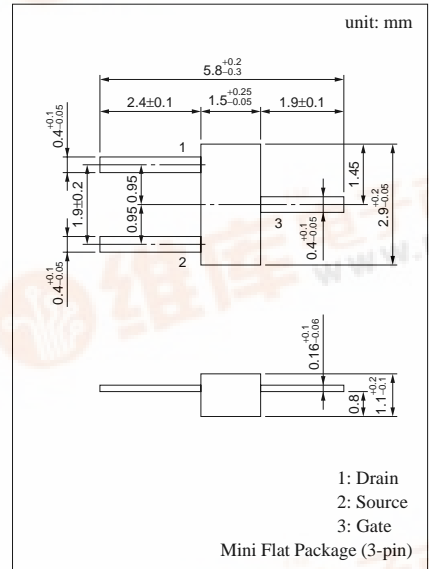
For electret capacitor microphone

■ Features

- High mutual conductance g_m
- Low noise voltage of NV

■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSO}	20	V
Drain to Gate voltage	V_{DGO}	20	V
Drain to Source current	I_{DSO}	2	mA
Drain to Gate current	I_{DGO}	2	mA
Gate to Source current	I_{GSO}	2	mA
Allowable power dissipation	P_D	200	mW
Operating ambient temperature	T_{opr}	-20 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Marking Symbol: 1H

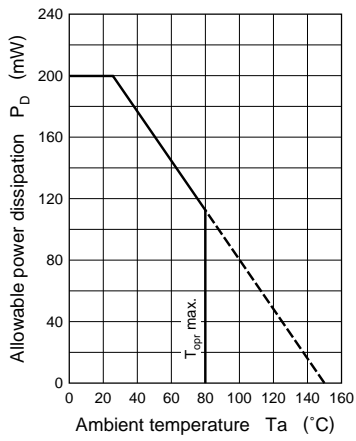
Note: For the forming type, (Y) is indicated after the part No.

■ Electrical Characteristics ($T_a = 25^\circ\text{C}$)

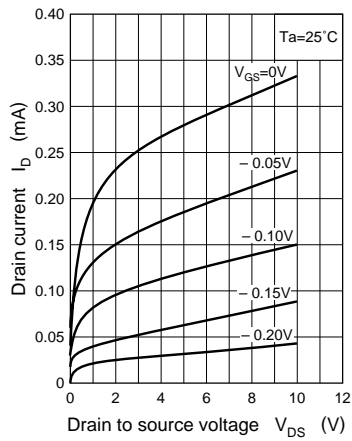
Parameter	Symbol	Conditions	min	typ	max	Unit
Current consumption	I_D	$V_D = 4.5\text{V}$, $C_O = 10\text{pF}$, $R_D = 2.2\text{k}\Omega \pm 1\%$	100		600	μA
Drain to Source cut-off current	I_{DSS}	$V_{DS} = 4.5\text{V}$, $V_{GS} = 0$	95		480	μA
Mutual conductance	g_m	$V_D = 4.5\text{V}$, $V_{GS} = 0$, $f = 1\text{kHz}$	0.7	1.6		mS
Noise figure	NV	$V_D = 4.5\text{V}$, $R_D = 2.2\text{k}\Omega \pm 1\%$ $C_O = 10\text{pF}$, A-curve			4	μV
Voltage gain	G_{V1}	$V_D = 4.5\text{V}$, $R_D = 2.2\text{k}\Omega \pm 1\%$ $C_O = 10\text{pF}$, $e_G = 10\text{mV}$, $f = 1\text{kHz}$	-3	2		dB
	G_{V2}	$V_D = 12\text{V}$, $R_D = 2.2\text{k}\Omega \pm 1\%$ $C_O = 10\text{pF}$, $e_G = 10\text{mV}$, $f = 1\text{kHz}$	0	3.3		dB
	G_{V3}	$V_D = 1.5\text{V}$, $R_D = 2.2\text{k}\Omega \pm 1\%$ $C_O = 10\text{pF}$, $e_G = 10\text{mV}$, $f = 1\text{kHz}$	-4.5	-0.3		dB
Voltage gain difference	$\Delta G_{V2} - G_{V1} $		0		+3.5	dB
	$\Delta G_{V1} - G_{V3} $		0		+3.5	dB



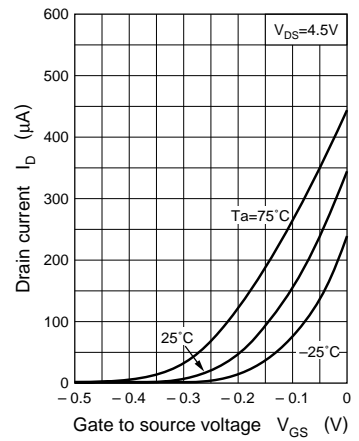
$P_D - T_a$



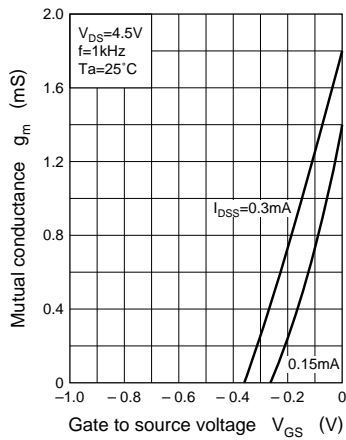
$I_D - V_{DS}$



$I_D - V_{GS}$



$g_m - V_{GS}$



$g_m - I_D$

