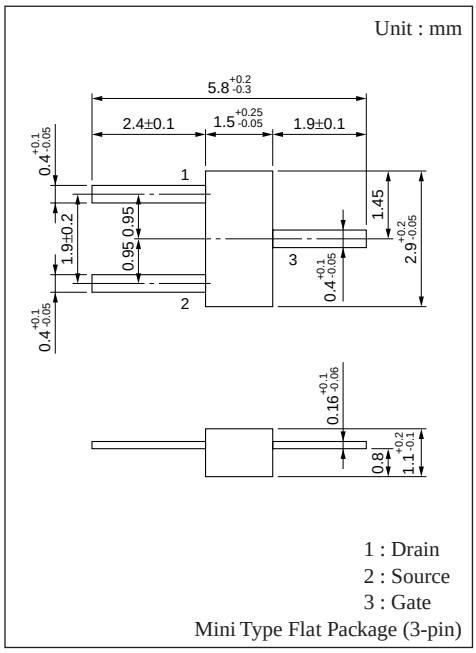
2SK123

Silicon N-Channel Junction

For impedance conversion in low frequency
For electret capacitor microphone

■ Features

- High mutual conductance g_m
- Low noise voltage of NV



Part Number Symbol : 1H

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

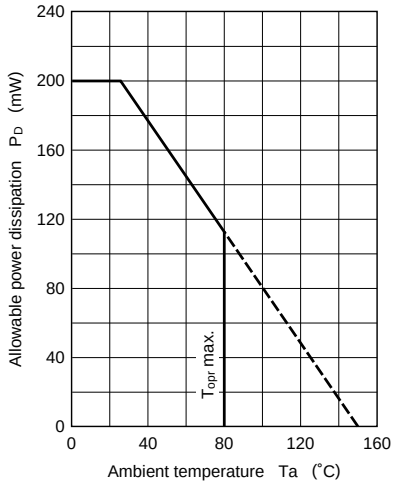
■ Absolute Maximum Ratings (Ta = 25˚C)

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

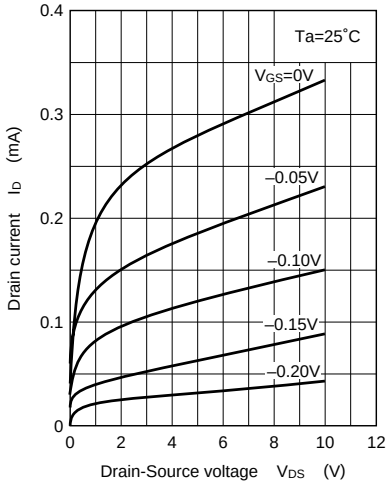
■ Electrical Characteristics (Ta = 25˚C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Current consumption	I_D	V_D= 4.5V, C_O=10pF, R_D= 2.2kΩ1%	150		500	µA
Drain-Source cut-off current	I_{DSS}	V_{DS}= 4.5V, V_{GS}= 0	130	200	375	µA
Mutual conductance	g_m	V_D= 4.5V, V_{GS}= 0, f=1kHz	0.9	1.6		mS
Noise voltage	NV	V_D= 4.5V, R_D= 2.2kΩ ±1% C_O=10pF, A-curve			4	µV
Voltage gain	G_{V1}	V_D= 4.5V, R_D= 2.2kΩ ±1% C_O=10pF, e_G=10mV, f=70Hz	–1			dB
	G_{V2}	V_D=12V, R_D= 2.2kΩ ±1% C_O=10pF, e_G=10mV, f=70Hz	0			dB
	G_{V3}	V_D=1.5V, R_D= 2.2k ±1% C_O=10pF, e_G=10mV, f=70Hz	– 4			dB
Voltage gain difference	$\Delta\lvert G_{V2}-G_{V1}\rvert$		+ 0.5		+ 4	dB
	$\Delta\lvert G_{V1}-G_{V3}\rvert$		0		+ 3.5	dB
Input capacitance	C_{iss}	V_{DS}= 4.5V, V_{GS}= 0, f=1MHz		7.5		pF
Output capacitance	C_{oss}			2		pF
Feedback capacitance	C_{rss}			1.6		pF

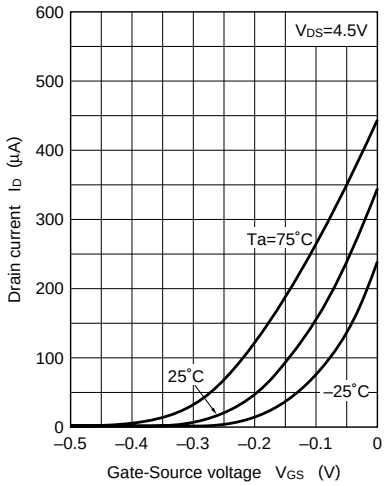
$P_D - Ta$



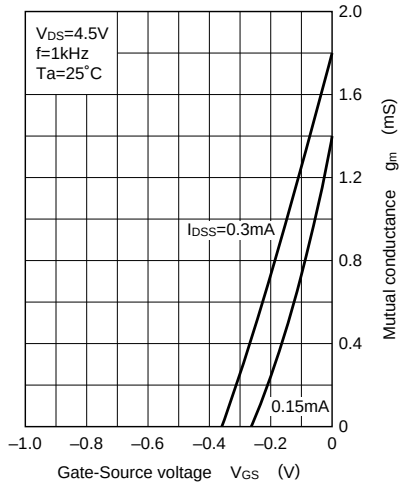
$I_D - V_{DS}$



$I_D - V_{GS}$



$g_m - V_{GS}$



$g_m - I_D$