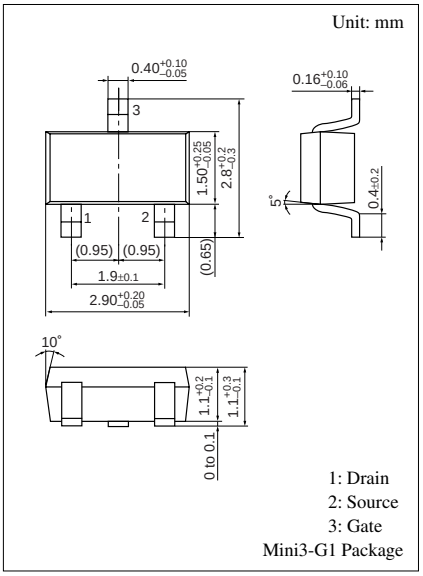
2SK0123 (2SK123)

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



Marking Symbol: 1H

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

■ Absolute Maximum Ratings (T_a = 25°C)

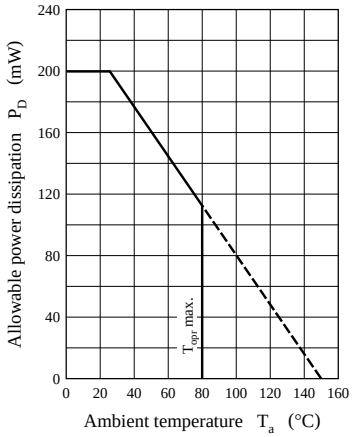
Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSO}	20	V
Drain to Gate voltage	V_{DGO}	20	V
Drain to Source current	I_{DSO}	2	mA
Drain to Gate current	I_{DGO}	2	mA
Gate to Source current	I_{GSO}	2	mA
Allowable power dissipation	P_D	200	mW
Operating ambient temperature	T_{opr}	−20 to +80	°C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

■ Electrical Characteristics (T_a = 25°C)

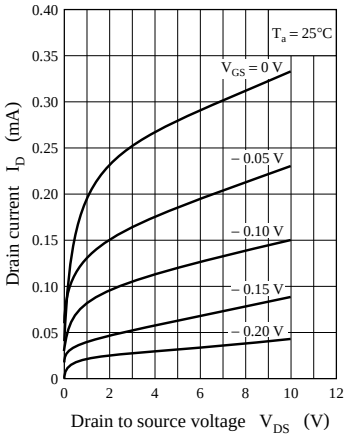
Parameter	Symbol	Conditions	min	typ	max	Unit
Current consumption	I_D	V_D = 4.5 V, C_O = 10 pF, R_D = 2.2 kΩ ± 1%	100		600	μA
Drain to Source cut-off current	I_{DSS}	V_{DS} = 4.5 V, V_{GS} = 0	95		480	μA
Mutual conductance	g_m	V_D = 4.5 V, V_{GS} = 0, f = 1 kHz	0.7	1.6		mS
Noise figure	NV	V_D = 4.5V,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

Note) The part number in the parenthesis shows conventional part number.

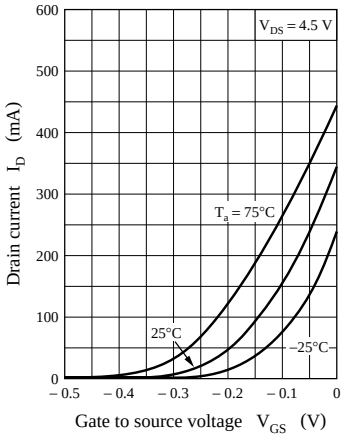
P_D — T_a



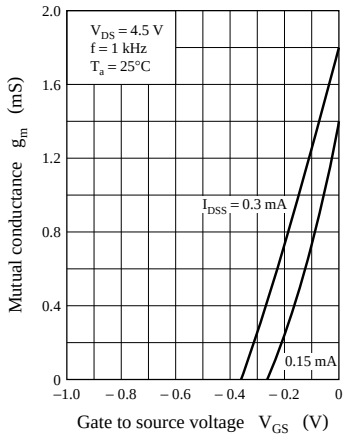
I_D — V_{DS}



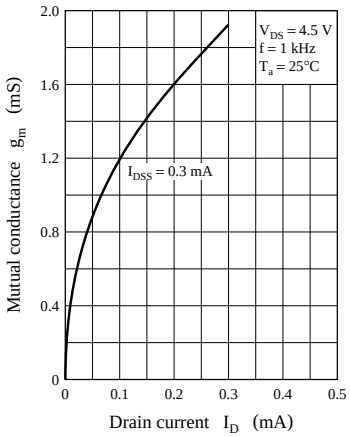
I_D — V_{GS}



g_m — V_{GS}



g_m — I_D



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