

# 2SK65

## Silicon N-Channel Junction

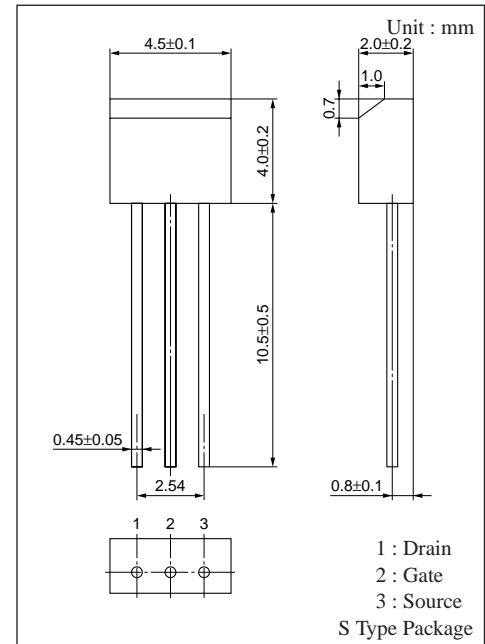
For impedance conversion in low frequency  
For electret capacitor microphone

### ■ Features

- Diode connected between gate and source
- Low noise voltage

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Rating	Unit
Drain-Source voltage	V <sub>DSO</sub>	12	V
Gate-Drain voltage	V <sub>GDO</sub>	-12	V
Drain-Source current	I <sub>DSO</sub>	2	mA
Drain-Gate current	I <sub>DGO</sub>	2	mA
Gate-Source current	I <sub>GSO</sub>	2	mA
Allowable power dissipation	P <sub>D</sub>	20	mW
Operating ambient temperature	T <sub>opr</sub>	-10 to +70	°C
Storage temperature	T <sub>stg</sub>	-20 to +150	°C



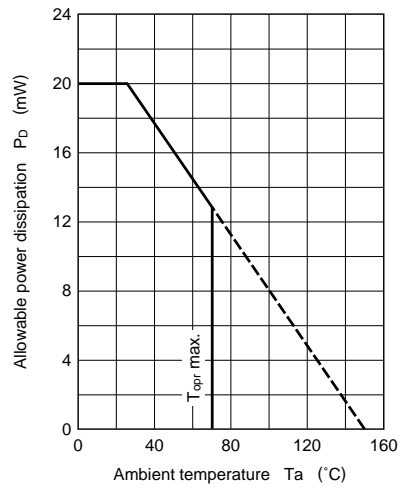
### ■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain-Source cut-off current	I <sub>DSS</sub> *	V <sub>DS</sub> = 4.5V, V <sub>GS</sub> = 0, R <sub>S</sub> = 2.2kΩ±1%	0.04		0.8	mA
Mutual conductance	g <sub>m</sub>	V <sub>DS</sub> = 4.5V, V <sub>GS</sub> = 0 R <sub>S</sub> = 2.2kΩ ±1%, f=1kHz	300	500		μS
Noise voltage	NV	V <sub>DS</sub> = 4.5V, R <sub>S</sub> = 2.2kΩ±1% C <sub>G</sub> =10pF, A-curve			4	μV
Voltage gain	G <sub>V1</sub> *	V <sub>DS</sub> = 4.5V, R <sub>S</sub> = 2.2kΩ±1% C <sub>G</sub> =10pF, e <sub>G</sub> =100mV, f=70Hz		-10		dB
	G <sub>V2</sub> *	V <sub>DS</sub> =12V, R <sub>S</sub> = 2.2kΩ±1% C <sub>G</sub> =10pF, e <sub>G</sub> =100mV, f=70Hz		-9.5		dB
	G <sub>V3</sub> *	V <sub>DS</sub> =1V, R <sub>S</sub> = 2.2kΩ±1% C <sub>G</sub> =10pF, e <sub>G</sub> =100mV, f=70Hz		-11		dB

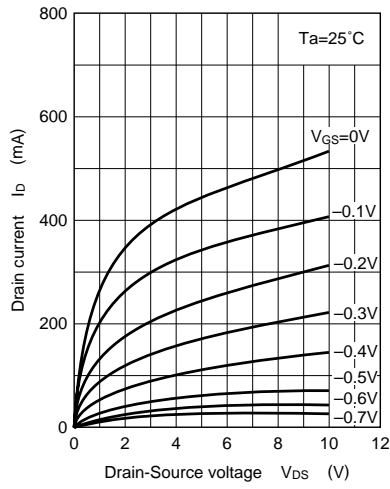
\* I<sub>DSS</sub> rank classification and G<sub>V</sub> value

Rank	P	Q
I <sub>DSS</sub> (mA)	0.04 to 0.2	0.15 to 0.8
G <sub>V1</sub> (dB)	> -13	> -12
G <sub>V2</sub> (dB)	> -12	> -11
Δ   G <sub>V1</sub> - G <sub>V2</sub>   (dB)	< 3	< 3

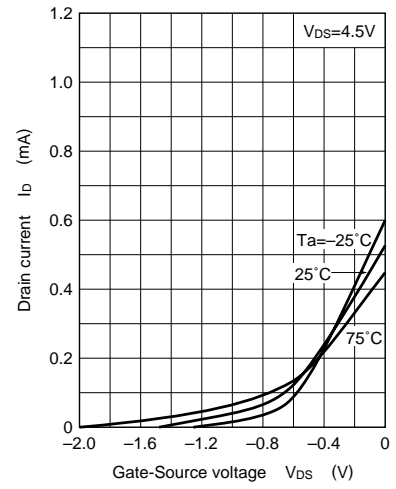
$P_D - T_a$



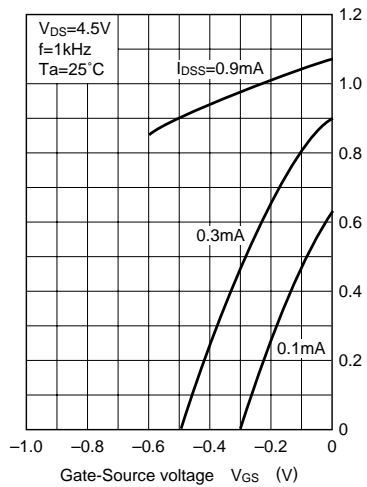
$I_D - V_{DS}$



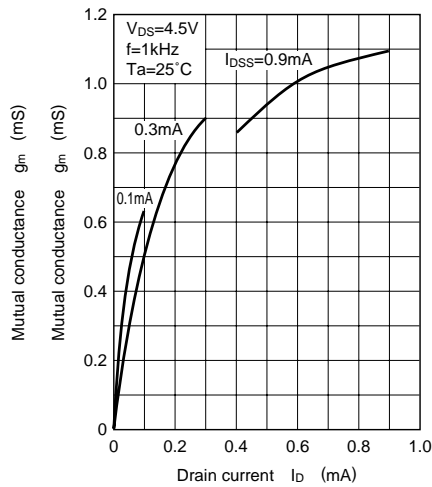
$I_D - V_{GS}$



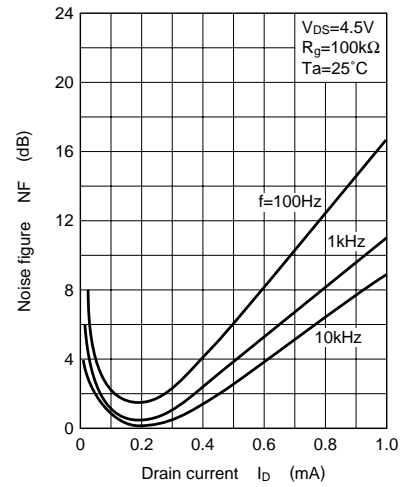
$g_m - V_{GS}$



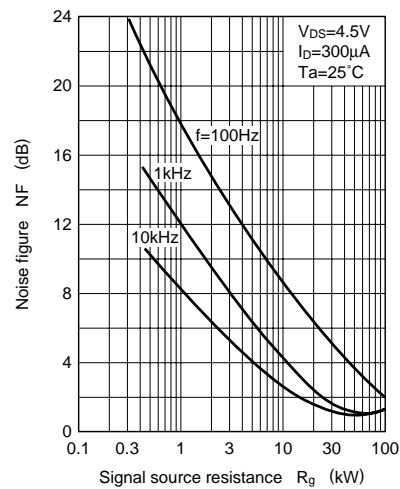
$g_m - I_D$



$NF - I_D$



$NF - R_g$



$NF - f$

