

Silicon N Channel Junction FET

2SK170



LOW NOISE AUDIO AMPLIFIER APPLICATIONS

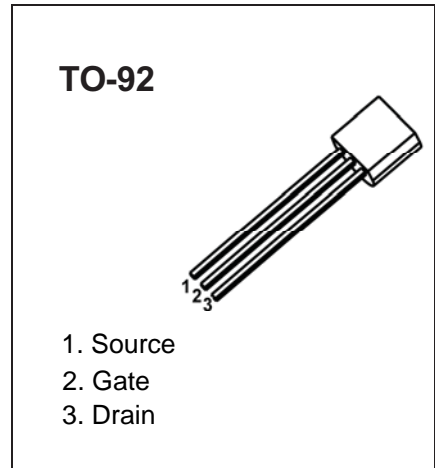
- Recommended for first stages of EQ and M.C.Head Amplifiers.

High $|Y_{fs}|$ $|Y_{fs}|=2.2\text{mS} (T_{yp.})$
 $(V_{Ds}=10\text{V}, V_{Gs}=0, I_{pss}=3\text{mA})$

- High Breakdown Voltage: $V_{GDS}=-40\text{V}$
- Low Noise $:E_n=0.95\text{nV}/\sqrt{\text{Hz}}(\text{Typ.})$
 $(V_{Ds}=10\text{V}, I_p=1\text{mA}, f=1\text{kHz})$
- High Input Impedance $:I_{GSS}=-1\text{nA}(\text{Max.})(V_{Gs}=-30\text{V})$

MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	-25	V
Gate Current	I_G	10	mA
Drain Power Dissipation	PD	400	mW
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55~125	°C

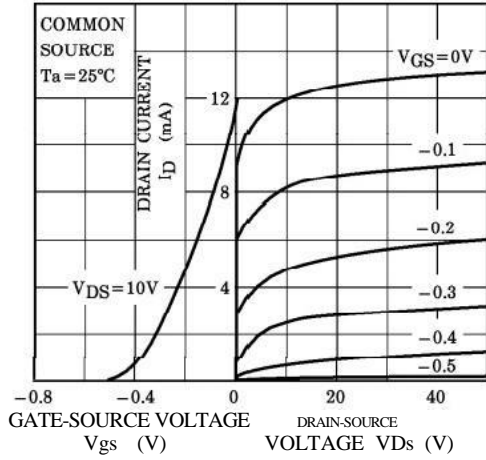


ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

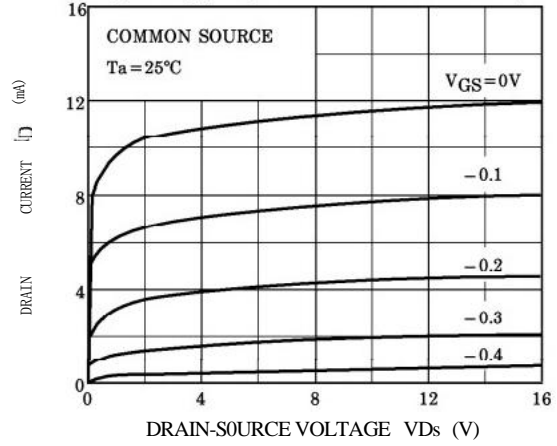
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	$V_{Gs}=-30\text{V}, V_{Ds}=0$			-1.0	nA
Gate-Drain Breakdown Voltage	$V(BR)_{GDS}$	$V_{Ds}=0, I_G=-100\mu\text{A}$	-25			V
Drain Current	I_{DSS} (Note)	$V_{Ds}=10\text{V}, V_{Gs}=0$	2.6		20	mA
Gate-Source Cut-off Voltage	$V_{Gs}(\text{OFF})$	$V_{Ds}=10\text{V}, I_p=0.1\mu\text{A}$	-0.2		-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{Ds}=10\text{V}, V_{Gs}=0, f=1\text{kHz}$		22		mS
Input Capacitance	C_{iss}	$V_{Ds}=10\text{V}, V_{Gs}=0, f=1\text{MHz}$		30		pF
Reverse Transfer Capacitance	C_{rgs}	$V_{Dg}=10\text{V}, I_p=0, f=1\text{MHz}$		6		pF
Noise Figure	NF (1)	$V_{Ds}=10\text{V}, I_p=1.0\text{mA}, R_g=1\text{k}\Omega, f=1\text{kHz}$		1.0	10	dB
	NF (2)	$V_{Ds}=10\text{V}, I_p=1.0\text{mA}, R_G=1\text{k}\Omega, f=1\text{kHz}$	-	0.5	2	

Note: I_{DSS} classification GR: 2.6~6.5 mA, BL: 6.0~12 mA, V: 10~20 mA

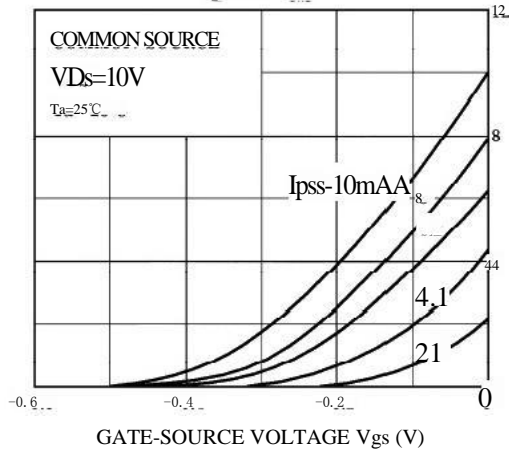
STATIC CHARACTERISTICS



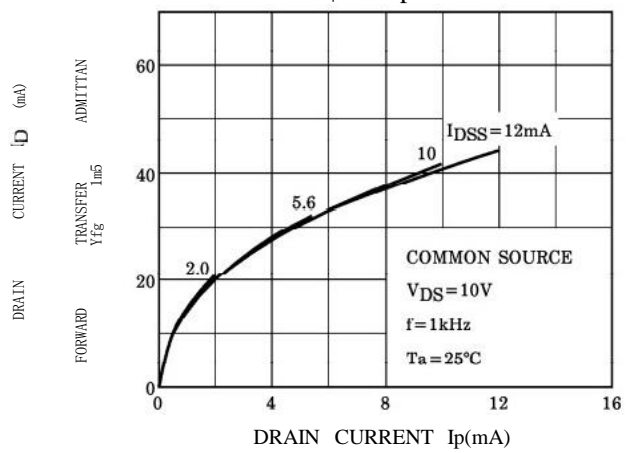
$I_D - V_{DS}$ (LOW VOLTAGE REGION)



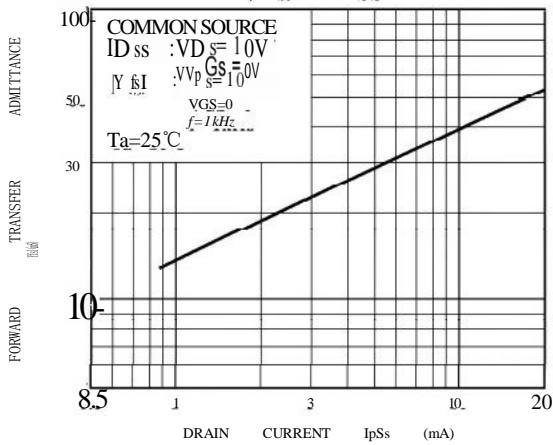
$I_p - V_{GS}$



$|Y_{fs}| - I_p$



$|Y_{fs}| - I_{DSS}$



$V_{GS(OFF)} - I_{DSS}$

