

SILICON N CHANNEL JUNCTION TYPE

2SK146

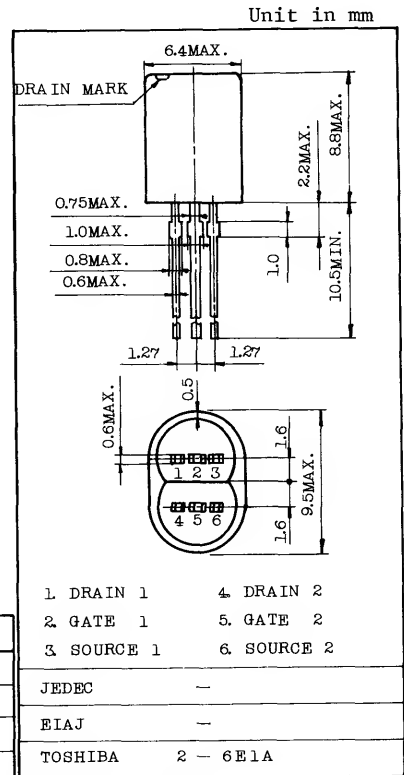
LOW NOISE AUDIO AMPLIFIER APPLICATIONS.
DIFFERENTIAL AMPLIFIER APPLICATIONS.

FEATURES:

- High $|y_{fs}|$
: $|y_{fs}|=40\text{mS}(\text{Typ.})$ ($V_{DS}=10\text{V}$, $V_{GS}=0$, $I_{DSS}=5\text{mA}$)
- Excellent Pair Characteristics
: $|V_{GS1}-V_{GS2}|=20\text{mV}(\text{Max.})$ ($V_{DS}=10\text{V}$, $I_D=5\text{mA}$)
- High Breakdown Voltage : $V_{(BR)GS}=-4\text{CV}$
- Low Noise : $\text{NF}=1.0\text{dB}(\text{Typ.})$
($V_{DS}=10\text{V}$, $I_D=5\text{mA}$, $R_g=100\Omega$, $f=1\text{kHz}$)
- High Input Impedance : $I_{GSS}=-1\text{nA}(\text{Max.})$ ($V_{GS}=-30\text{V}$)
- High Drain Power Dissipation : $P_D=600\text{mW} \times 2$

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	-40	V
Gate Current	I_G	10	mA
Drain Power Dissipation	P_D	600x2	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



Weight : 1.08g

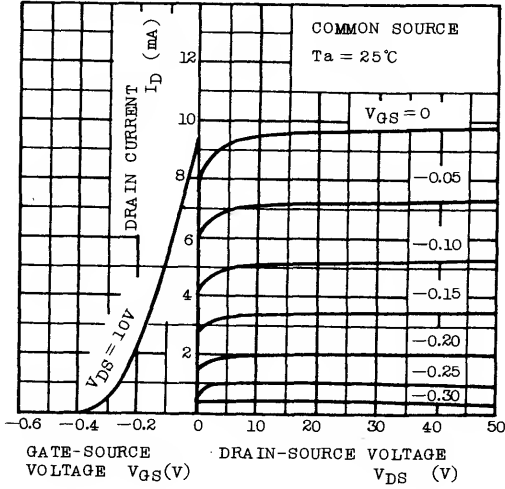
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	I_{GSS}	$V_{GS}=-30\text{V}$, $V_{DS}=0$	-	-	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS}=0$, $I_G=-100\mu\text{A}$	-40	-	-	V
Drain Current	I_{DSS} (Note1)	$V_{DS}=10\text{V}$, $V_{GS}=0$	5.0	-	30	mA
Gate-Source Cut-off Voltage	$V_{GS}(\text{OFF})$	$V_{DS}=10\text{V}$, $I_D=0.1\mu\text{A}$	-0.3	-	-1.2	V
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=10\text{V}$, $V_{GS}=0$, $f=1\text{kHz}$, $I_{DSS}=5\text{mA}$	30	40	-	mS
Differential Gate-Source Voltage	$V_{GS1}-V_{GS2}$	$V_{DS}=10\text{V}$, $I_D=5\text{mA}$	-	-	20	mV
Input Capacitance	C_{iss}	$V_{DS}=10\text{V}$, $V_{GS}=0$, $f=1\text{MHz}$	-	75	-	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DG}=10\text{V}$, $I_D=0$, $f=1\text{MHz}$	-	15	-	pF
Noise Figure (Note 2)	NF(1)	$V_{DS}=10\text{V}$, $R_g=100\Omega$, $I_D=5\text{mA}$, $f=100\text{Hz}$	-	5	10	dB
	NF(2)	$V_{DS}=10\text{V}$, $R_g=100\Omega$, $I_D=5\text{mA}$, $f=1\text{kHz}$	-	1	2	

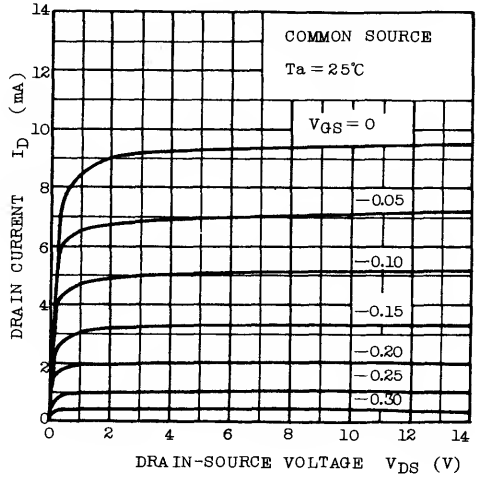
Note 1 : I_{DSS} Classification GR : 5.0~10, BL : 8.0~16, V : 14.0~30

2 : When low noise audio amplifier, recommended V_{DS} up to 15V.

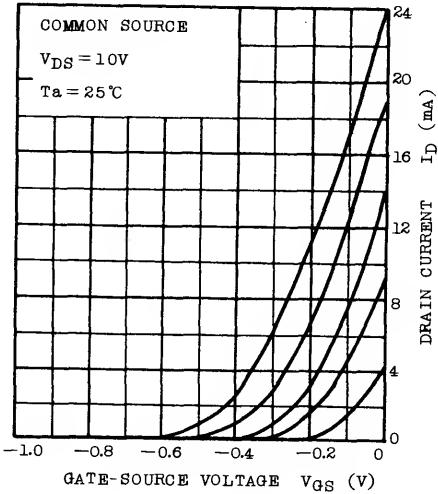
STATIC CHARACTERISTICS



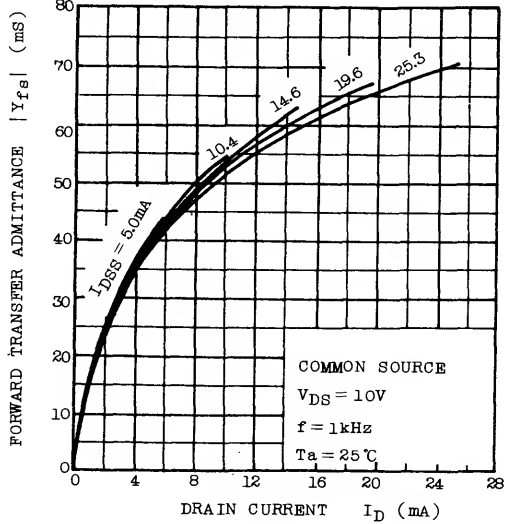
I_D - V_{DS} (LOW VOLTAGE REGION)

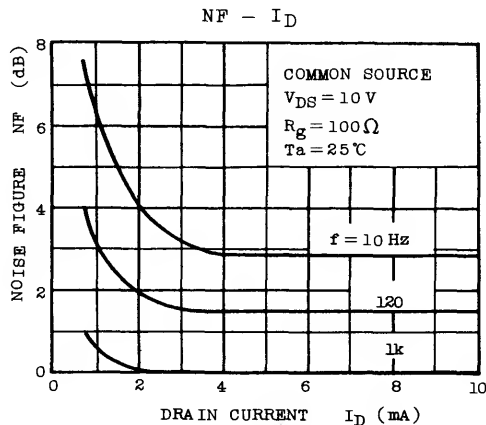
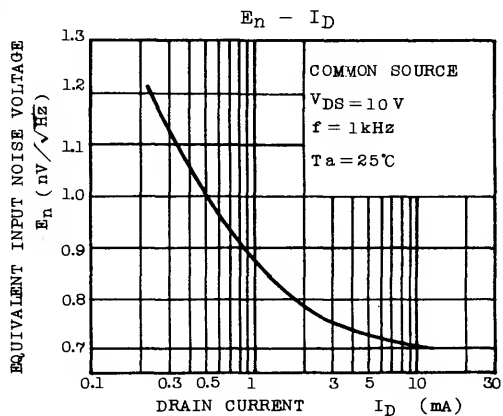
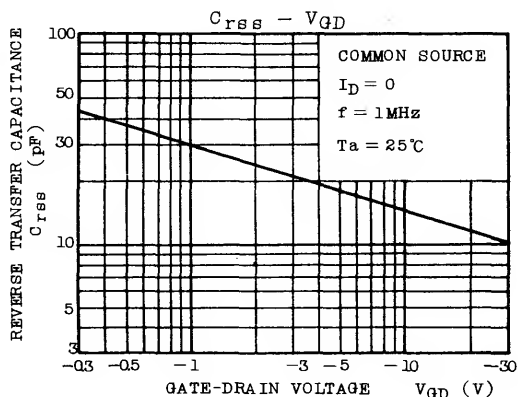
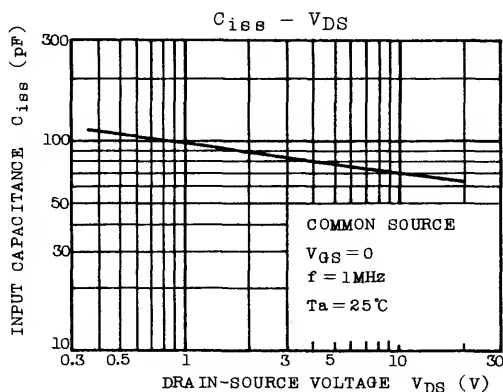
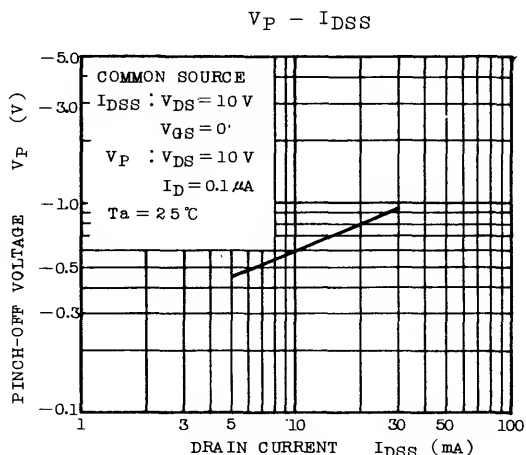
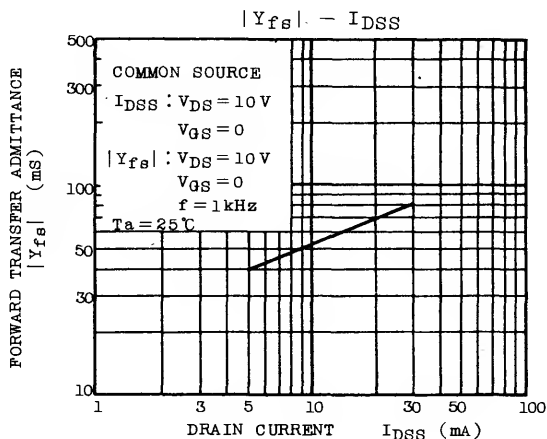


I_D - V_{GS}

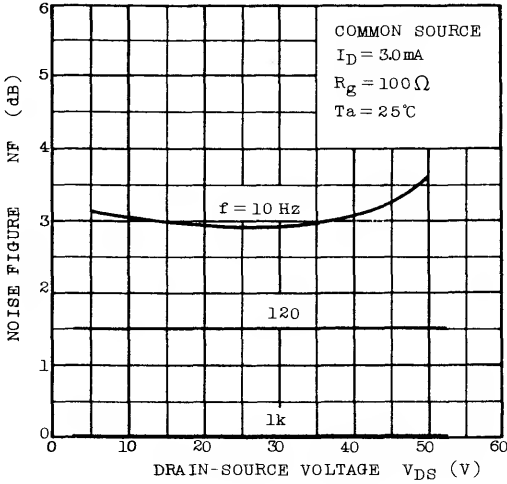


|Y_{fs}| - I_D

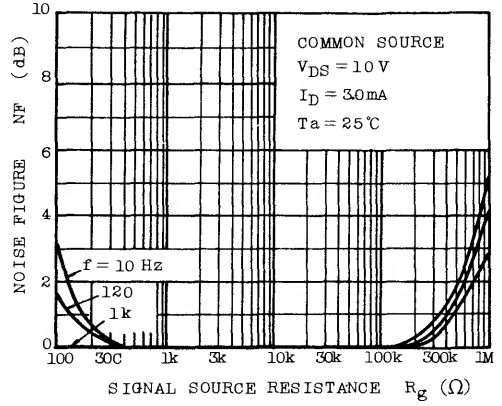




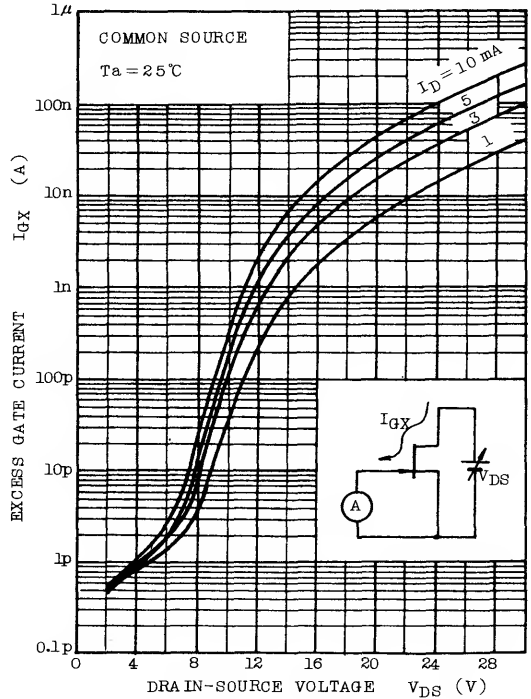
NF - V_{DS}



NF - R_g



$I_{GX} - V_{DS}$



NF - f

