

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

# 2SK2145

AUDIO FREQUENCY LOW NOISE AMPLIFIER APPLICATIONS.

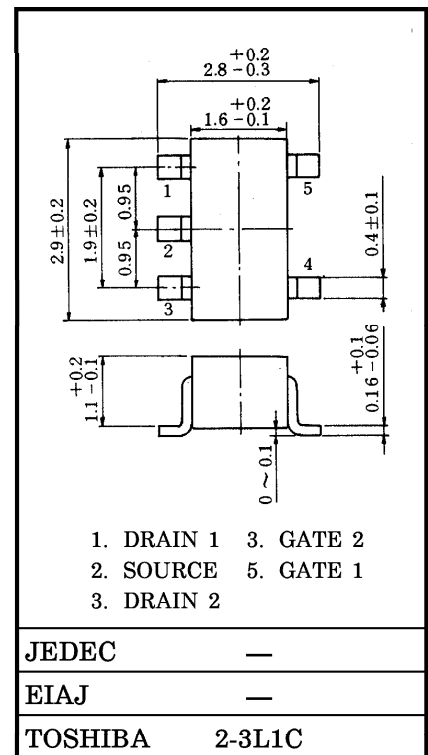
Unit in mm

- Including Two Devices in SM5 (Super Mini Type with 5 Leads.)
- High  $|Y_{fs}|$  :  $|Y_{fs}|=15\text{mS (Typ.)}$  at  $V_{DS}=10\text{V}$ ,  $V_{GS}=0$
- High Breakdown Voltage :  $V_{GDS}=-50\text{V}$
- Low Noise :  $NF=1.0\text{dB (Typ.)}$   
at  $V_{DS}=10\text{V}$ ,  $I_D=0.5\text{mA}$ ,  $f=1\text{kHz}$ ,  $R_g=1\text{k}\Omega$
- High Input Impedance :  $I_{GSS}=-1\text{nA (Max.)}$  at  $V_{GS}=-30\text{V}$

MAXIMUM RATINGS ( $T_a=25^\circ\text{C}$ ) (Q1, Q2 COMMON)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	$V_{GDS}$	-50	V
Gate Current	$I_G$	10	mA
Drain Power Dissipation	$P_D^*$	300	mW
Junction Temperature	$T_j$	125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~125	$^\circ\text{C}$

\* Total Rating



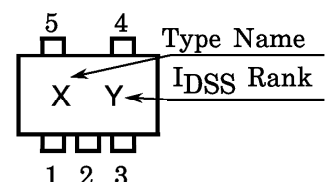
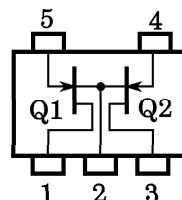
ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ ) (Q1, Q2 COMMON)

Weight : 0.016g

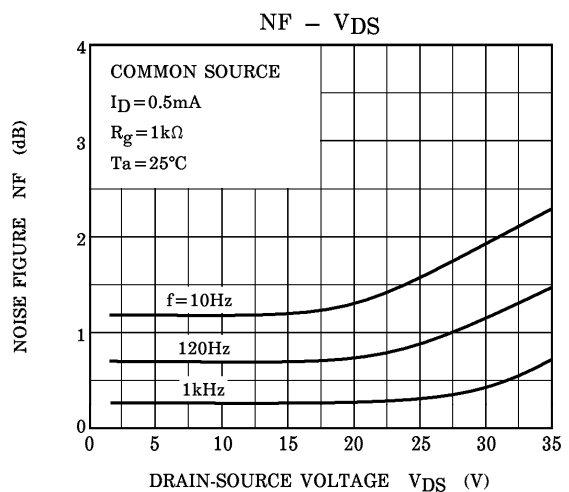
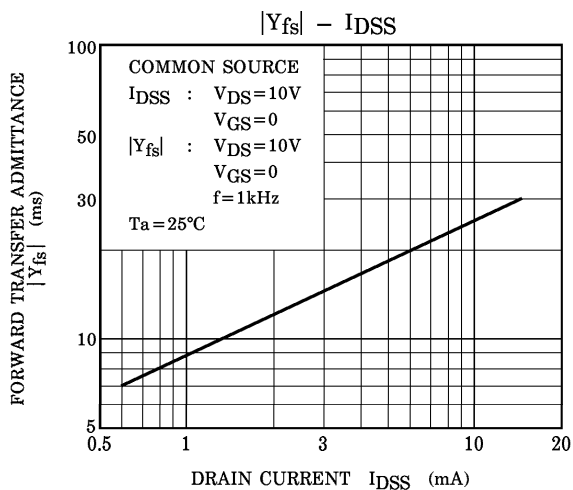
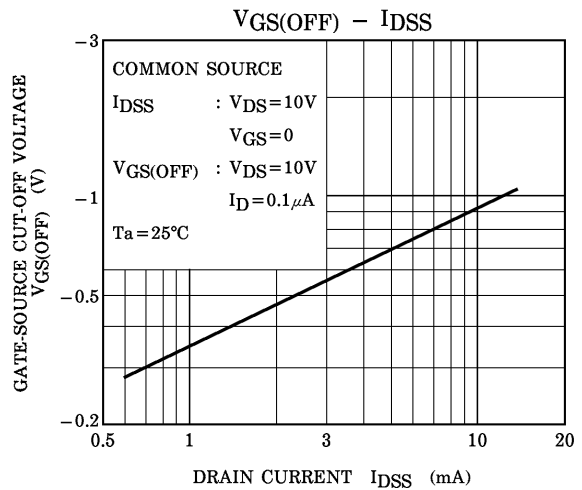
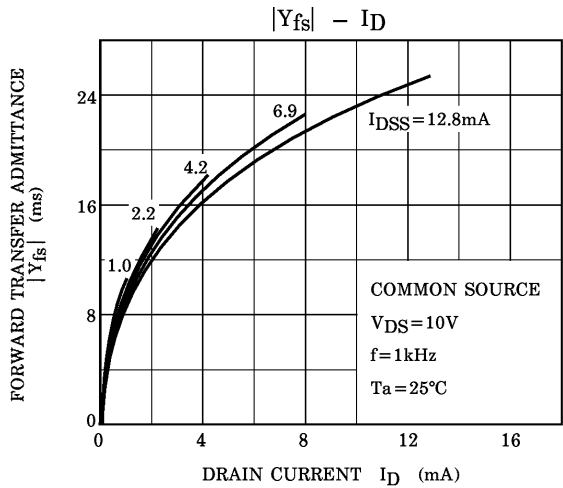
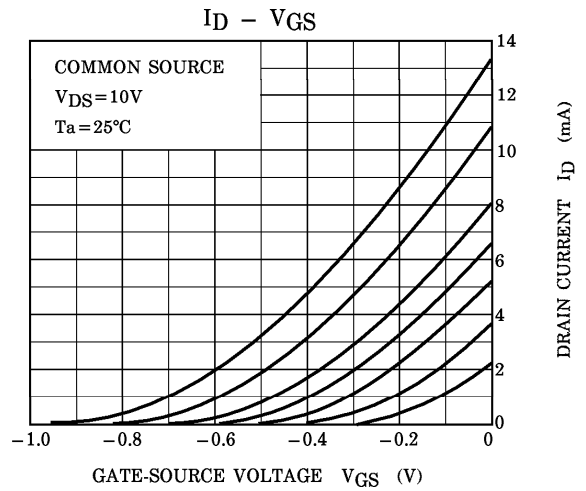
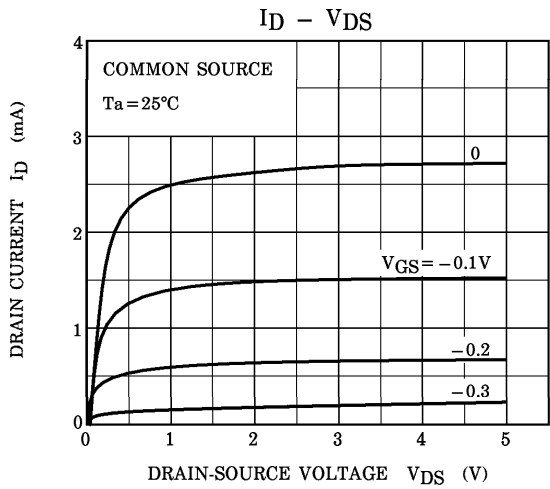
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate-Leakage Current	$I_{GSS}$	$V_{GS}=-30\text{V}$ , $V_{DS}=0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS}=0$ , $I_G=-100\mu\text{A}$	-50	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS}=10\text{V}$ , $V_{GS}=0$	1.2	—	14.0	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS}=10\text{V}$ , $I_D=0.1\mu\text{A}$	-0.2	—	-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10\text{V}$ , $V_{GS}=0$ , $f=1\text{kHz}$	4.0	15	—	mS
Input Capacitance	$C_{iss}$	$V_{DS}=10\text{V}$ , $V_{GS}=0$ , $f=1\text{MHz}$	—	13	—	pF
Reverse Transfer Capacitance	$C_{rss}$	$V_{DG}=10\text{V}$ , $I_D=0$ , $f=1\text{MHz}$	—	3	—	pF
Noise Figure	NF (1)	$V_{DS}=10\text{V}$ , $R_g=1\text{k}\Omega$ $I_D=0.5\text{mA}$ , $f=10\text{Hz}$	—	5	—	dB
	NF (2)	$V_{DS}=10\text{V}$ , $R_g=1\text{k}\Omega$ $I_D=0.5\text{mA}$ , $f=1\text{kHz}$	—	1	—	

PIN ASSIGNMENT (TOP VIEW) MARKING

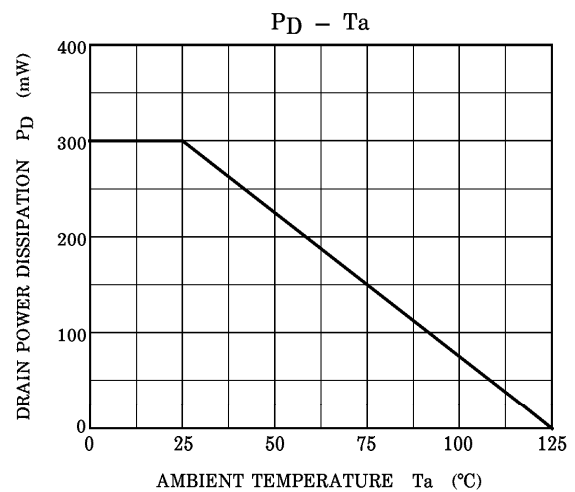
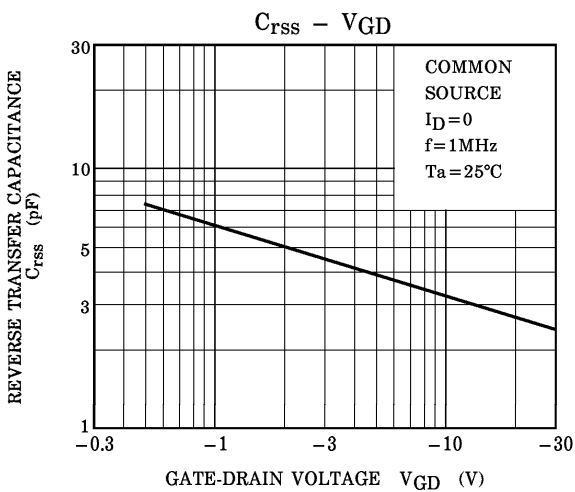
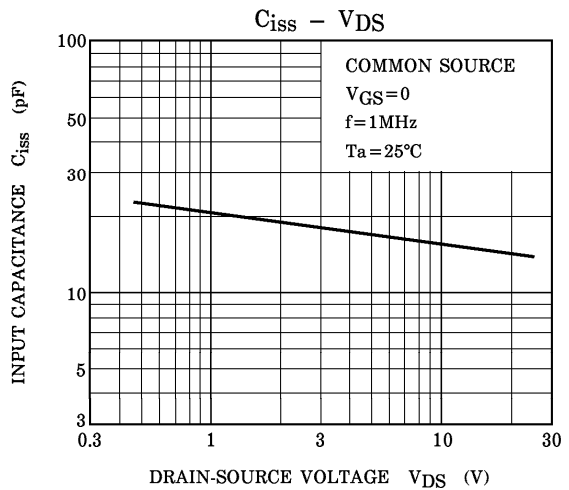
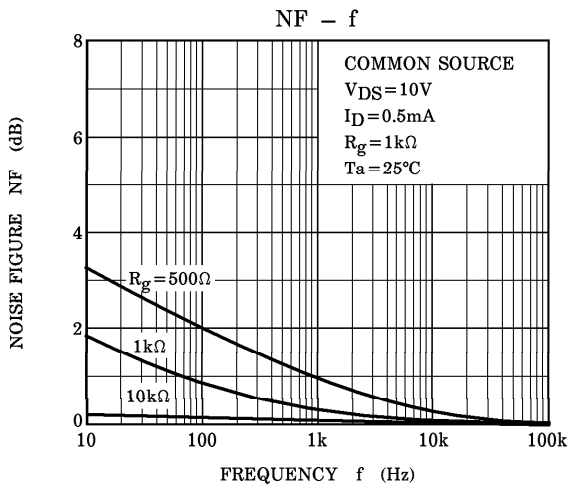
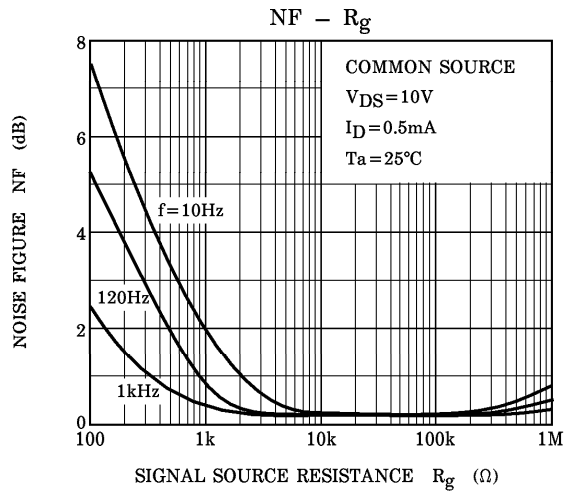
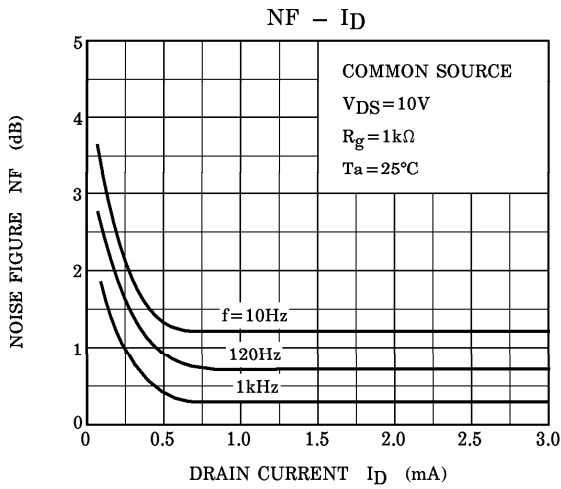
Note :  $I_{DSS}$  Classification  
 Y(Y) : 1.2~3.0mA, GR(G) : 2.6~6.5mA  
 BL(L) : 6.0~14.0mA  
 ( ) Marking Symbol



(Q1, Q2 COMMON)



(Q1, Q2 COMMON)



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