

# 2SJ144

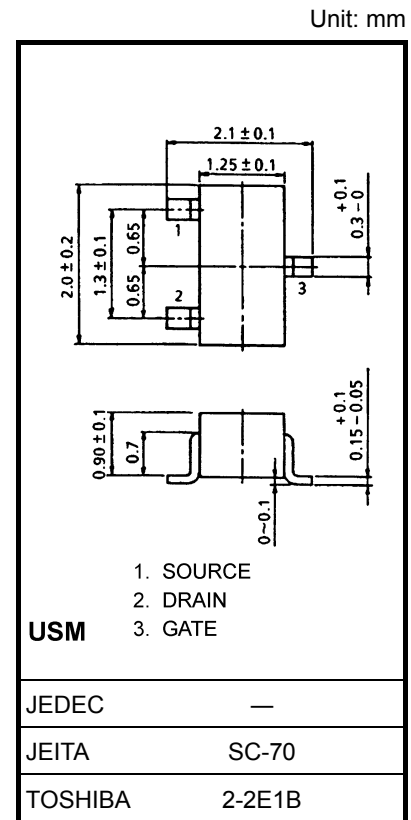
Audio Frequency Amplifier Applications  
 Analog Switch Applications  
 Constant Current Applications  
 Impedance Converter Applications

- High breakdown voltage:  $V_{GDS} = 50 \text{ V (min)}$
- High input impedance:  $I_{GSS} = 1.0 \text{ nA (max)}$  ( $V_{GS} = 30 \text{ V}$ )
- Low  $R_{DS(ON)}$ :  $R_{DS(ON)} = 270 \Omega \text{ (typ.)}$  ( $I_{DSS} = -5 \text{ mA}$ )
- Small package

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Characteristics	Symbol	Rating	Unit
Gate-drain voltage	$V_{GDS}$	50	V
Gate current	$I_G$	-10	mA
Drain power dissipation	$P_D$	100	mW
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55~125	$^\circ\text{C}$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.  
 Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



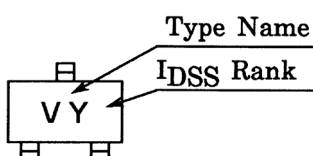
Weight: 0.006 g (typ.)

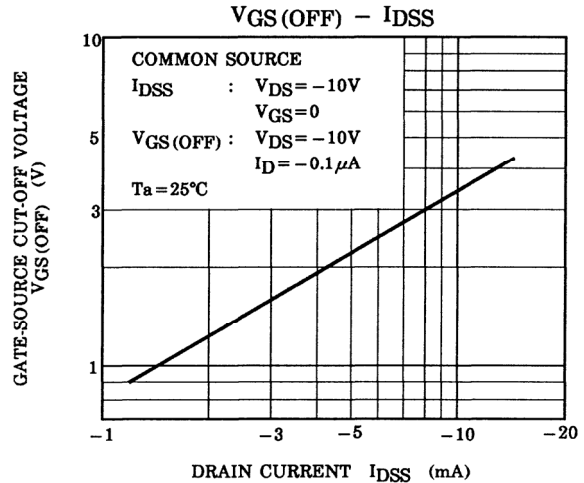
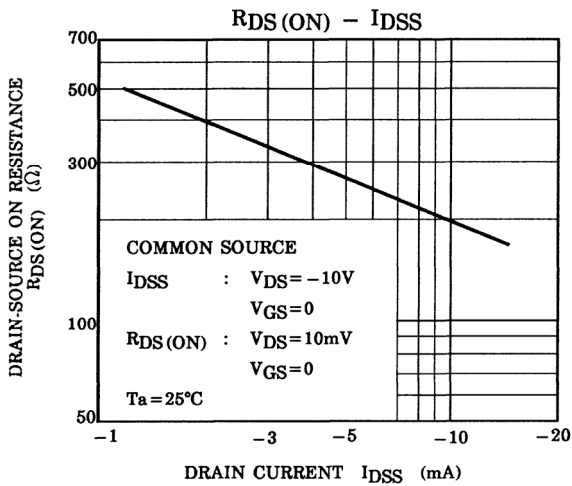
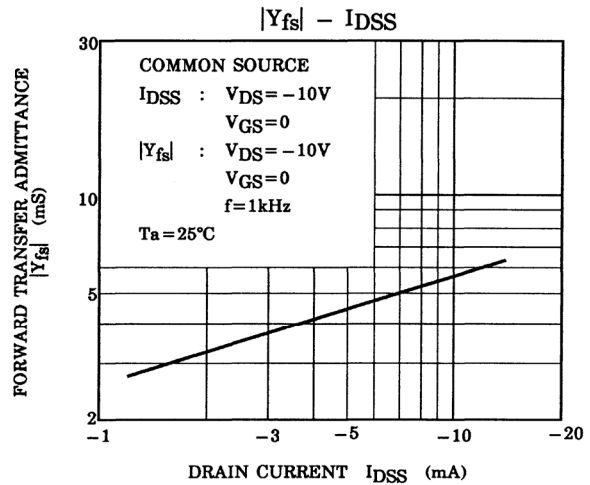
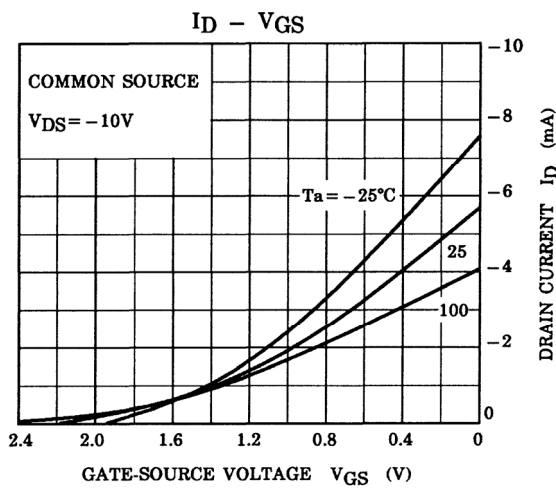
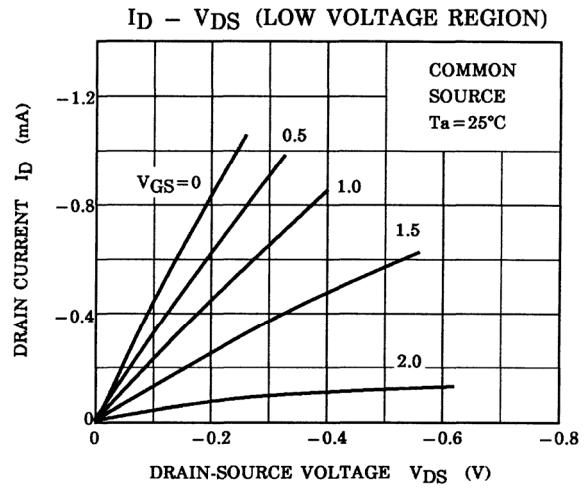
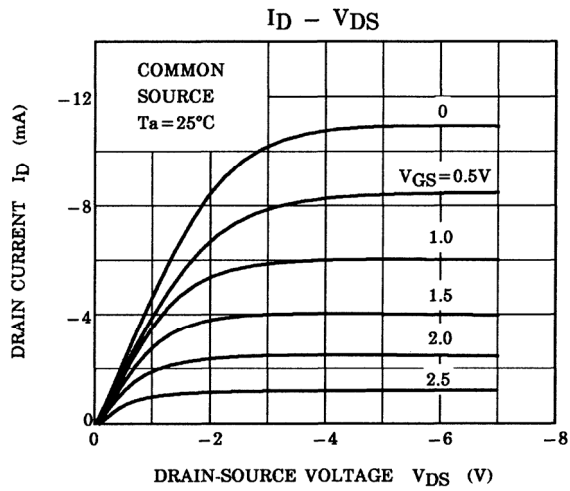
### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

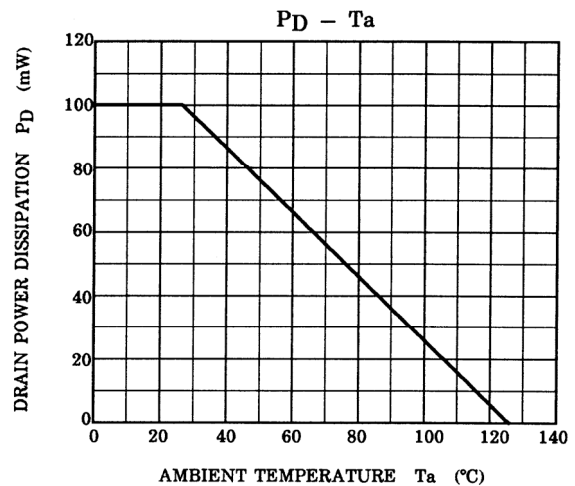
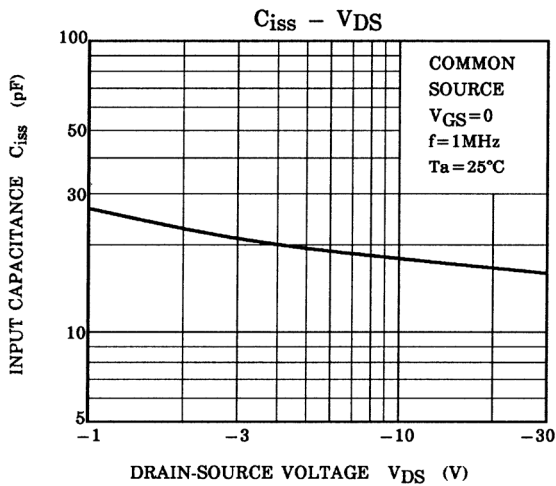
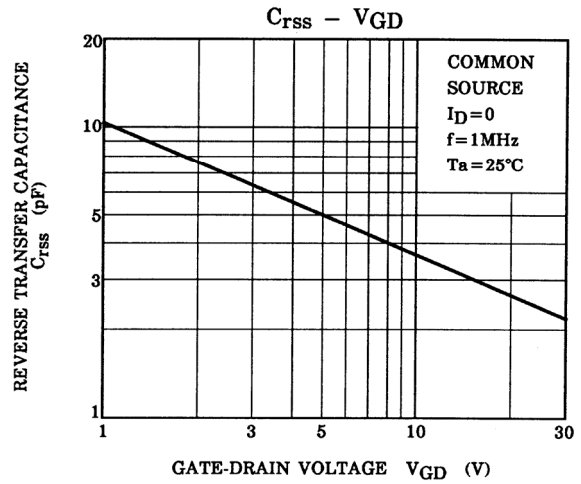
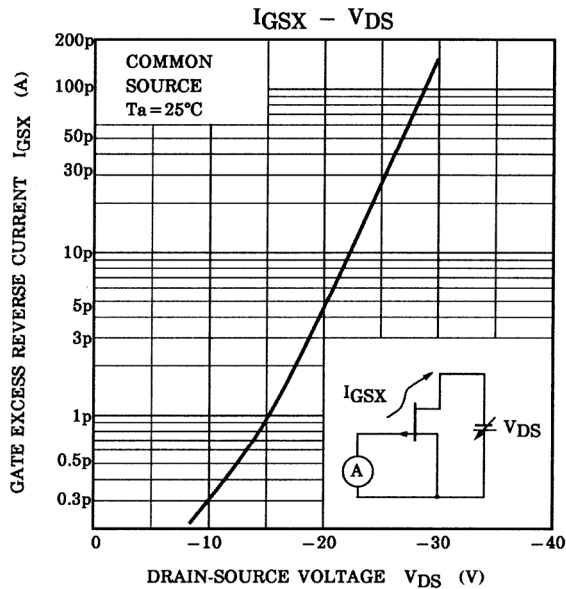
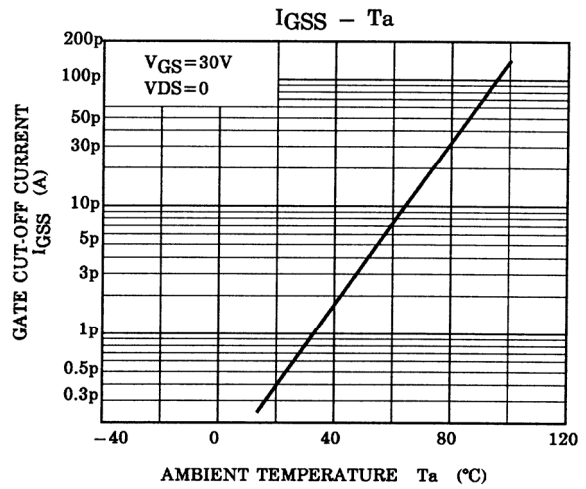
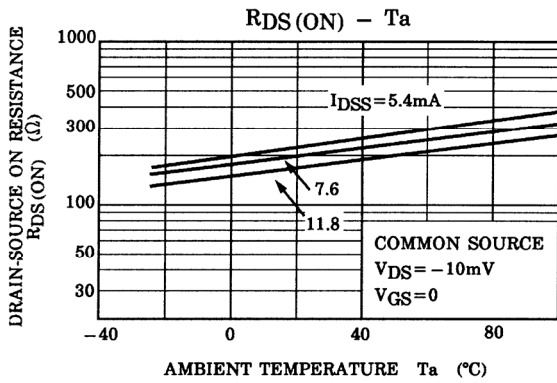
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate cut-off current	$I_{GSS}$	$V_{GS} = 30 \text{ V}, V_{DS} = 0$	—	—	1.0	nA
Gate-drain breakdown voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = 100 \mu\text{A}$	50	—	—	V
Drain current	$I_{DSS}$ (Note)	$V_{DS} = -10 \text{ V}, V_{GS} = 0$	-1.2	—	-14	mA
Gate-source cut-off voltage	$V_{GS(OFF)}$	$V_{DS} = -10 \text{ V}, I_D = -0.1 \mu\text{A}$	0.3	—	6.0	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ kHz}$	1.0	4.0	—	mS
Drain-source on resistance	$R_{DS(ON)}$	$V_{DS} = -10 \text{ mV}, V_{GS} = 0$ $I_{DSS} = -5 \text{ mA}$	—	270	—	$\Omega$
Input capacitance	$C_{iss}$	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	18	—	pF
Reverse transfer capacitance	$C_{rss}$	$V_{DG} = -10 \text{ V}, I_D = 0, f = 1 \text{ MHz}$	—	3.6	—	pF

Note:  $I_{DSS}$  classification Y: -1.2~-3.0 mA, GR (G): -2.6~-6.5 mA, BL (L): -6~-14 mA

### Marking







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20070701-EN GENERAL

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