

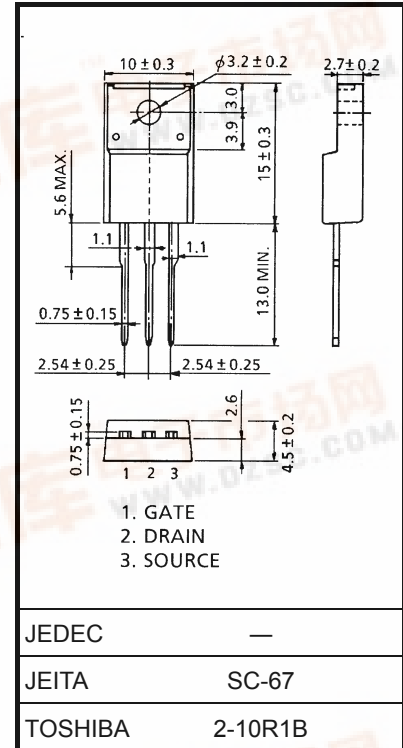
TOSHIBA Field Effect Transistor Silicon P Channel MOS Type

2SJ313

Audio Frequency Power Amplifier Application

- High breakdown voltage: $V_{DS} = -180\text{ V}$
- High forward transfer admittance: $|Y_{fs}| = 0.7\text{ S (typ.)}$
- Complementary to 2SK2013

Unit: mm



Weight: 1.9 g (typ.)

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

Characteristics	Symbol	Rating	Unit
Drain-source voltage	V_{DS}	-180	V
Gate-source voltage	V_{GS}	±20	V
Drain current (Note 1)	I_D	-1	A
Power dissipation ($T_c = 25^\circ\text{C}$)	P_D	25	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~150	$^\circ\text{C}$

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.).

Electrical Characteristics (Ta = 25°C)

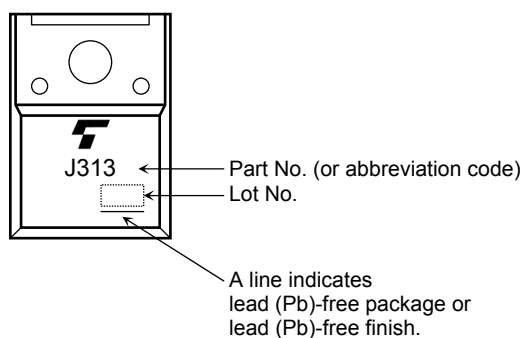
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate leakage current	I_{GSS}	$V_{DS} = 0, V_{GS} = \pm 20 \text{ V}$	—	—	± 100	nA
Drain-source breakdown voltage	$V_{(BR) DSS}$	$I_D = -10 \text{ mA}, V_{GS} = 0$	-180	—	—	V
Gate-source cut-off voltage (Note 2)	$V_{GS (OFF)}$	$V_{DS} = -10 \text{ V}, I_D = -10 \text{ mA}$	-0.8	—	-2.8	V
Drain-source saturation voltage	$V_{DS (ON)}$	$I_D = -0.6 \text{ A}, V_{GS} = -10 \text{ V}$	—	-1.2	-3.0	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = -10 \text{ V}, I_D = -0.3 \text{ A}$	—	0.7	—	S
Input capacitance	C_{iss}	$V_{DS} = -10 \text{ V}, V_{GS} = 0, f = 1 \text{ MHz}$	—	210	—	pF
Output capacitance	C_{oss}		—	90	—	
Reverse transfer capacitance	C_{rss}		—	45	—	

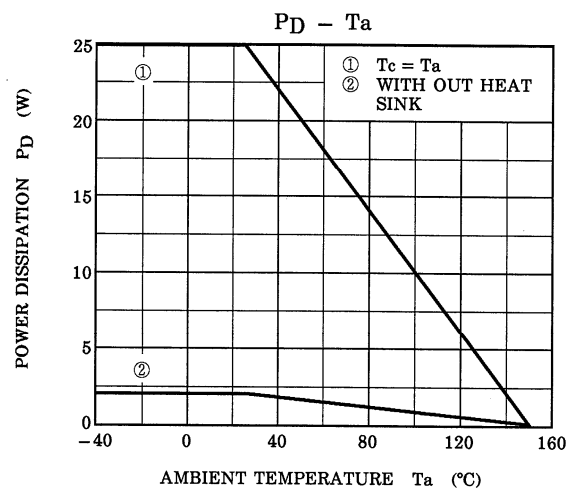
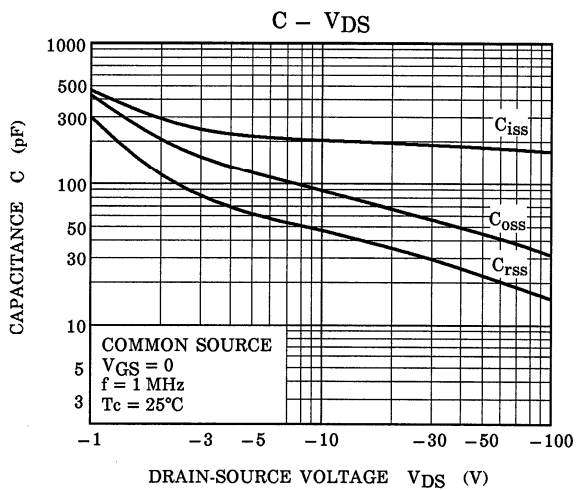
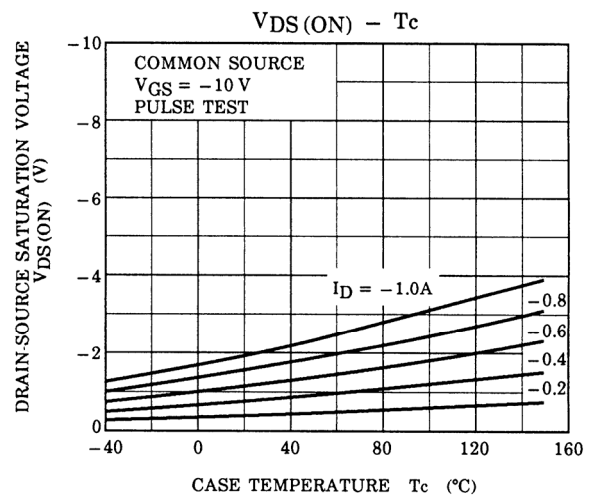
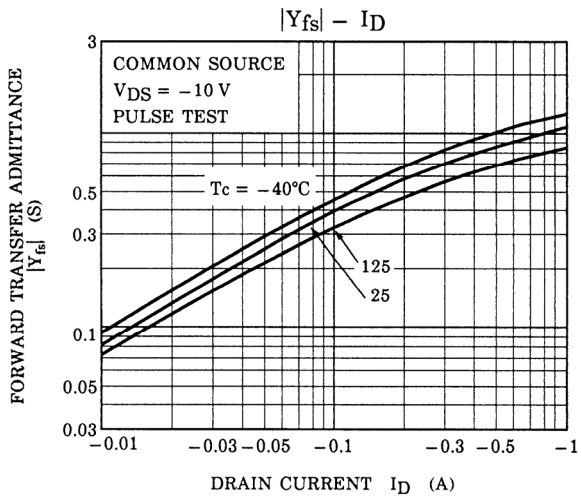
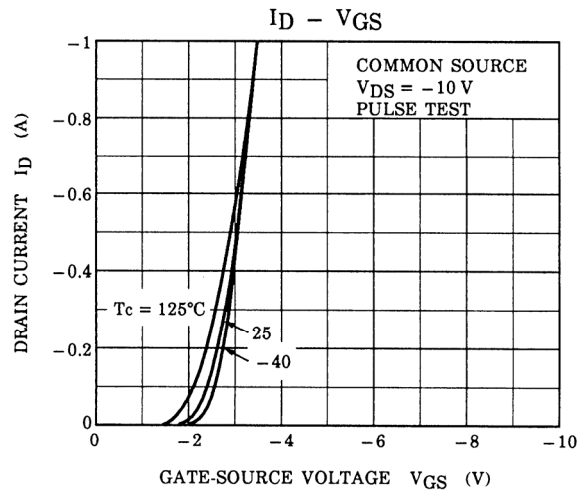
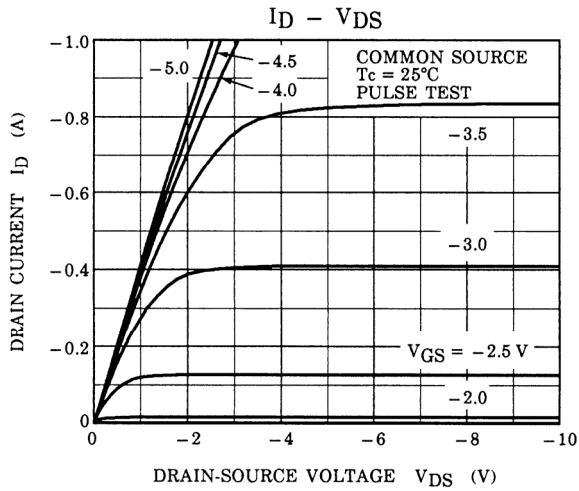
Note 1: Ensure that the channel temperature does not exceed 150°C.

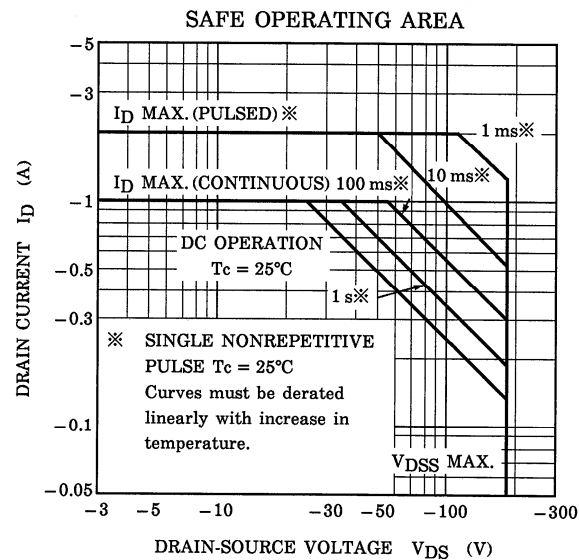
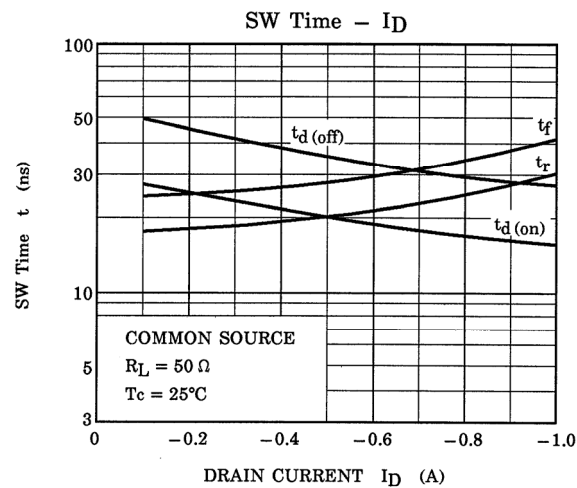
Note 2: $V_{GS (OFF)}$ Classification O: -0.8~-1.6, Y: -1.4~-2.8

This transistor is the electrostatic-sensitive device.
Please handle with caution.

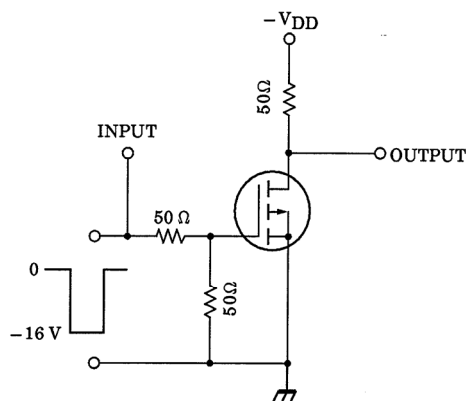
Marking



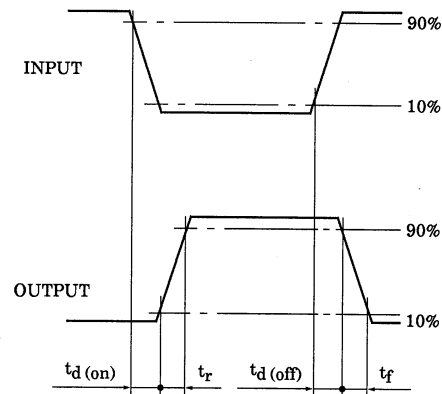




Test Circuit



Waveforms



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20070701-EN

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