TOSHIBA Field Effect Transistor Silicon N Channel MOS Type

2SK2013

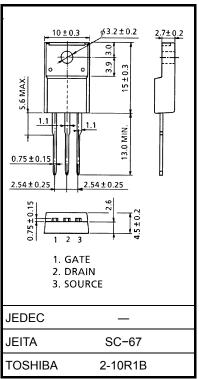
Audio Frequency Power Amplifier Application

- High breakdown voltage : V_{DSS} = 180V
- High forward transfer admittance \therefore |Y_{fs}| = 0.7 S (typ.)
- Complementary to 2SJ313

Absolute Maximum Ratings (Ta = 25°C)

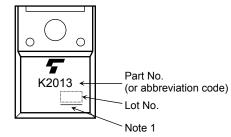
Characteristics	Symbol	Rating	Unit	
Drain-source voltage	V _{DSS}	180	V	
Gate-source voltage	V _{GSS}	±20	V	
Drain current (Note 2)	۱ _D	1	А	
Drain power dissipation (Tc = 25°C)	PD	25	W	
Channel temperature	T _{ch}	150	°C	
Storage temperature range	T _{stg}	-55 to 150	°C	

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: 1.9 g (typ.)

Marking



Note 1: A line under a Lot No. identifies the indication of product Labels. Not underlined: [[Pb]]/INCLUDES > MCV Underlined: [[G]]/RoHS COMPATIBLE or [[G]]/RoHS [[Pb]]

Please contact your TOSHIBA sales representative for details as to environmental matters such as the RoHS compatibility of Product. The RoHS is the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Electrical Characteristics (Ta = 25°C)

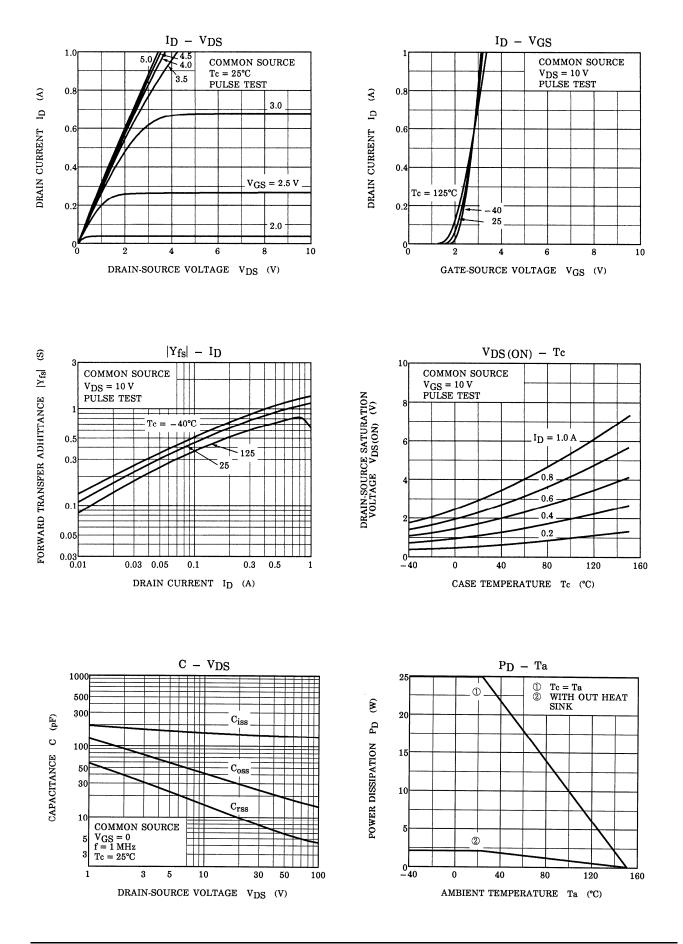
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Gate leakage current	I _{GSS}	V_{DS} = 0, V_{GS} = ±20 V	—	_	±100	nA
Drain-source breakdown voltage	V (BR) DSS	I _D = 10 mA, V _{GS} = 0	180	_	—	V
Gate-source cut-off voltage (Note 3)	V _{GS (OFF)}	V _{DS} = 10 V, I _D = 10 mA	1.8	_	2.8	V
Drain-source saturation voltage	V _{DS (ON)}	I _D = 0.6 A, V _{GS} = 10 V	_	1.7	3.0	V
Forward transfer admittance	Y _{fs}	V _{DS} = 10 V, I _D = 0.3 A	—	0.7	—	S
Input capacitance	C _{iss}	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz	_	170	—	
Output capacitance	C _{oss}	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz	_	45	_	pF
Reverse transfer capacitance	C _{rss}	$V_{DD} \approx 10 \text{ V}, \text{ V}_{GS} = 0, \text{ f} = 1 \text{ MHz}$		17	_	

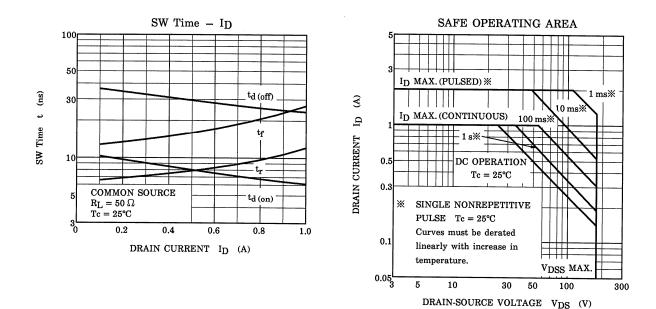
Note 2: Ensure that the channel temperature does not exceed 150°C.

Note 3: $V_{GS (OFF)}$ Classification O: 0.8~1.6, This transistor is an electrostatic-sensitive device. Please handle with caution.

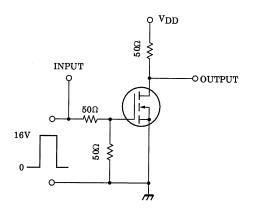
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Y: 1.4~2.8
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Unit: mm

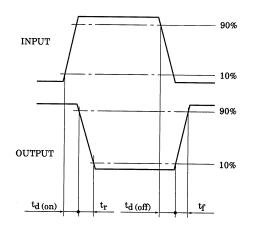




Switching Time Test Circuit



Waveforms



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