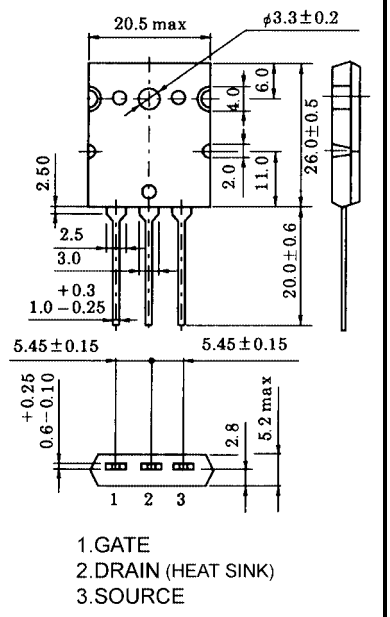
TOSHIBA Field Effect Transistor Silicon P Channel MOS Type

2SJ201

High Power Amplifier Application

- High breakdown voltage : V_{DSS} = −200 V
- High forward transfer admittance : $|Y_{fs}|$ = 5.0 S (typ.)
- Complementary to 2SK1530

Unit: mm



1.GATE
2.DRAIN (HEAT SINK)
3.SOURCE

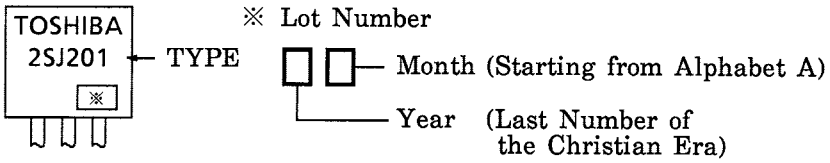
JEDEC	—
JEITA	—
TOSHIBA	2-21F1B

Weight: 9.75 g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Drain−source voltage	V_{DSS}	−200	V
Gate−source voltage	V_{GSS}	±20	V
Drain current (Note 1)	I_D	−12	A
Drain power dissipation (Tc = 25°C)	P_D	150	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	−55~150	°C

Marking



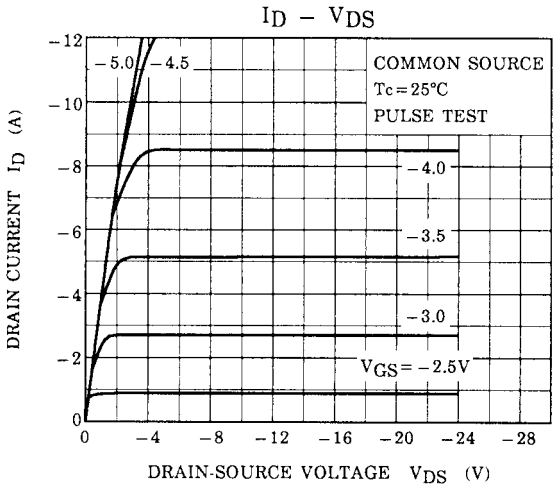
Electrical Characteristics (Ta = 25°C)

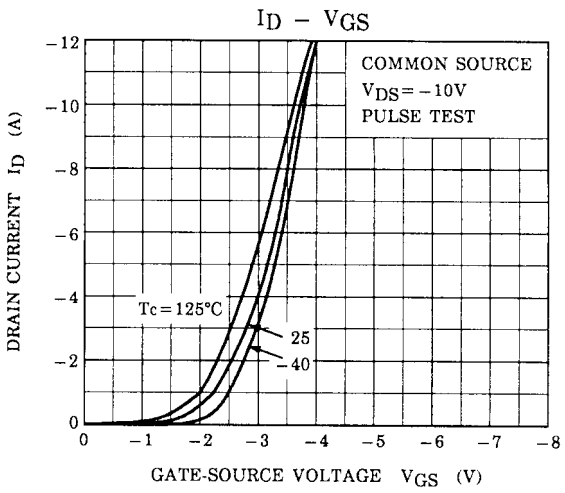
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Drain cut−off current	I_{DSS}	V_{DS} = −200 V, V_{GS} = 0	—	—	−1.0	mA
Gate leakage current	I_{GSS}	V_{DS} = 0, V_{GS} = ±20 V	—	—	±0.5	μA
Drain−source breakdown voltage	$V_{(BR)\ DSS}$	I_D = −10 mA, V_{GS} = 0	−200	—	—	V
Gate−source cut−off voltage (Note 2)	$V_{GS\ (OFF)}$	V_{DS} = −10 V, I_D = −0.1 A	−0.8	—	−2.8	V
Drain−source saturation voltage	$V_{DS\ (ON)}$	I_D = −8 A, V_{GS} = −10 V	—	−2.0	−5.0	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = −10 V, I_D = −5 A	—	5.0	—	S
Input capacitance	C_{iss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	1500	—	pF
Output capacitance	C_{oss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	430	—	
Reverse transfer capacitance	C_{rss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	230	—	

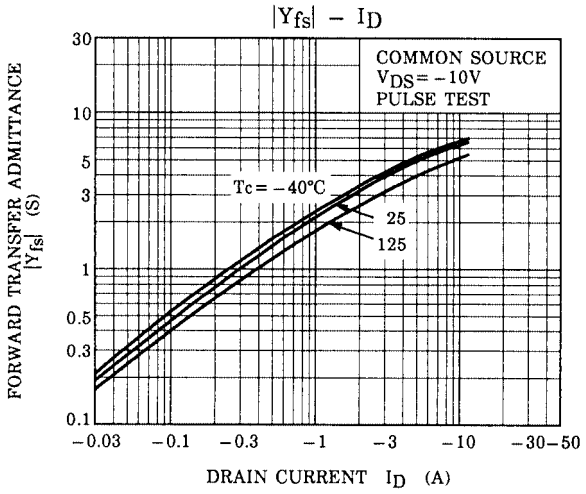
Note 1: Please use devices on condition that the channel temperature is below 150°C.

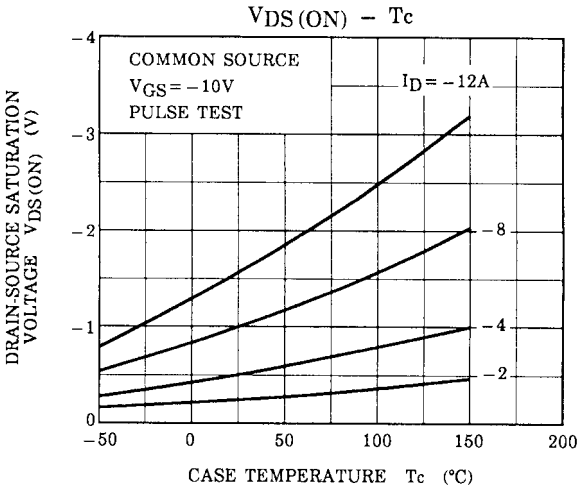
Note 2: $V_{GS\ (OFF)}$ Classification O: −0.8~−1.6, Y: −1.4~−2.8

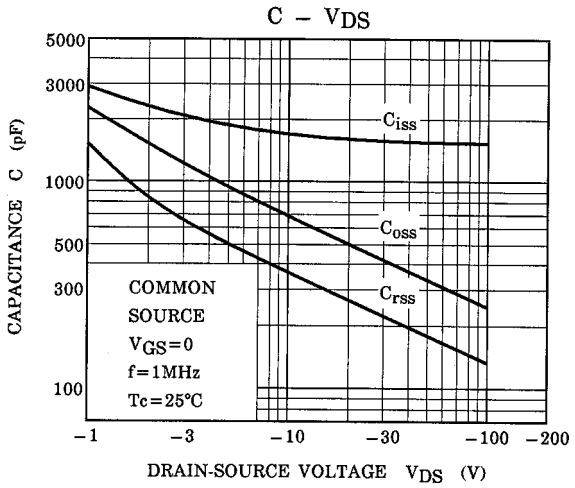
This transistor is an electrostatic sensitive device.
Please handle with caution.

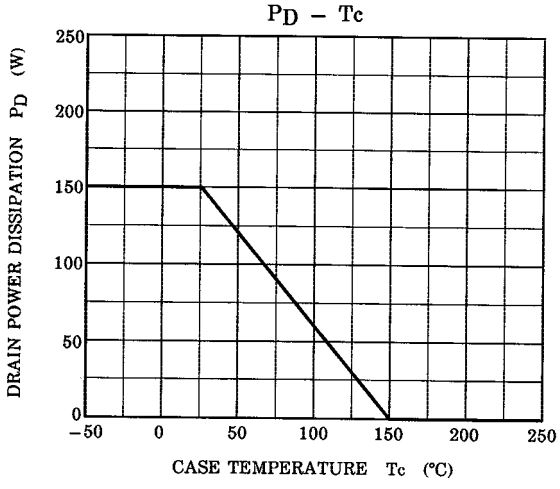

$I_D - V_{DS}$
COMMON SOURCE
Tc = 25°C
PULSE TEST
−5.0
−4.5
−4.0
−3.5
−3.0
V_{GS} = −2.5V
DRAIN CURRENT I_D (A)
DRAIN-SOURCE VOLTAGE V_{DS} (V)

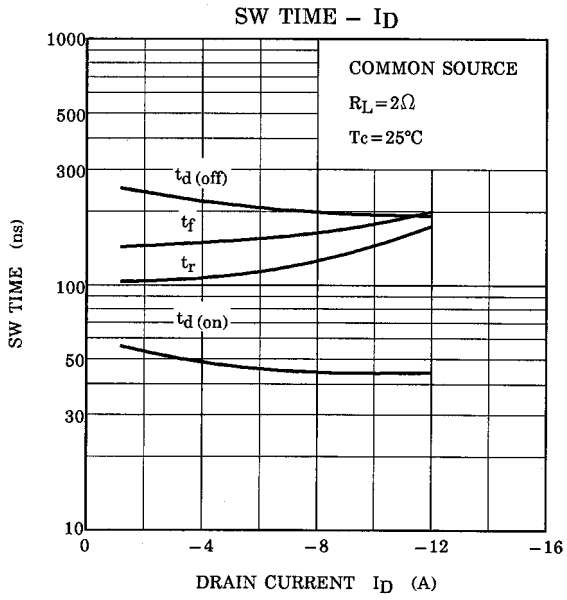

$I_D - V_{GS}$
COMMON SOURCE
V_{DS} = −10V
PULSE TEST
Tc = 125°C
25
−40
DRAIN CURRENT I_D (A)
GATE-SOURCE VOLTAGE V_{GS} (V)

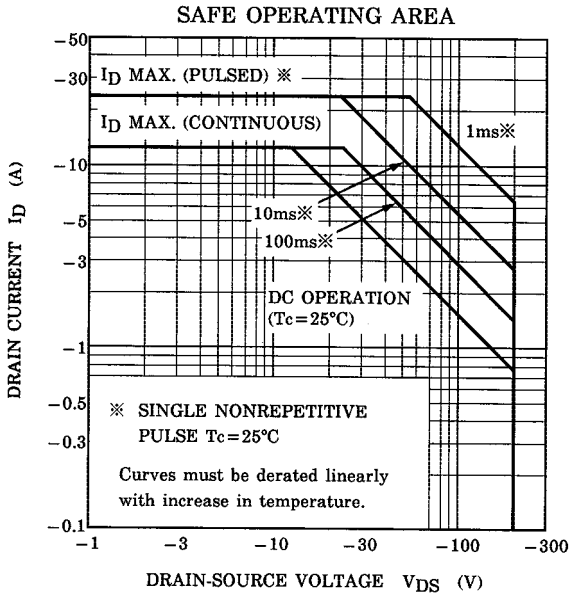

$|Y_{fs}| - I_D$
COMMON SOURCE
V_{DS} = −10V
PULSE TEST
Tc = −40°C
25
125
FORWARD TRANSFER ADMITTANCE $|Y_{fs}|$ (S)
DRAIN CURRENT I_D (A)


$V_{DS\,(ON)} - Tc$
COMMON SOURCE
V_{GS} = −10V
PULSE TEST
I_D = −12A
−8
−4
−2
DRAIN-SOURCE SATURATION VOLTAGE $V_{DS\,(ON)}$ (V)
CASE TEMPERATURE Tc (°C)

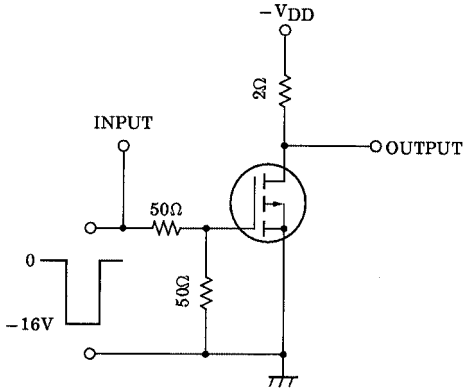

C − V_{DS}
C_{iss}
C_{oss}
C_{rss}
COMMON SOURCE
V_{GS} = 0
f = 1MHz
Tc = 25°C
CAPACITANCE C (pF)
DRAIN-SOURCE VOLTAGE V_{DS} (V)


P_D − Tc
DRAIN POWER DISSIPATION P_D (W)
CASE TEMPERATURE Tc (°C)

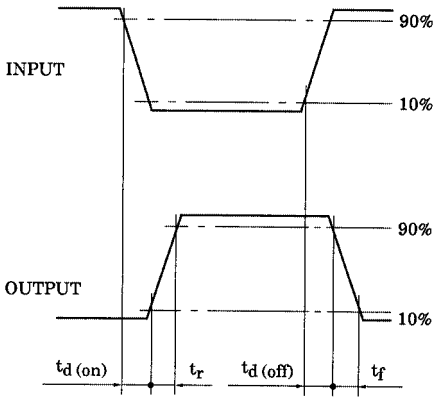




Switching Time Test Circuit



Waveforms



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