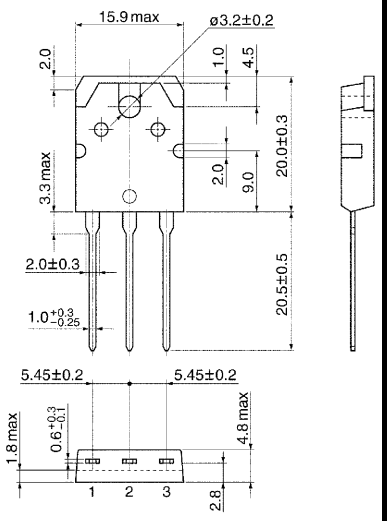
TOSHIBA Field Effect Transistor Silicon P Channel MOS Type

2SJ200

High Power Amplifier Application

- High breakdown voltage : V_{DSS} = −180 V
- High forward transfer admittance : $|Y_{fs}|$ = 4.0 S (typ.)
- Complementary to 2SK1529

Unit: mm



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

JEDEC	—
JEITA	—
TOSHIBA	2-16C1B

Weight: 4.6 g (typ.)

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 1)	I_D	−10	A
Drain power dissipation (Tc = 25°C)	P_D	120	W
Channel temperature	T_{ch}	150	°C
Storage temperature range	T_{stg}	−55~150	°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).

Electrical Characteristics (Ta = 25°C)

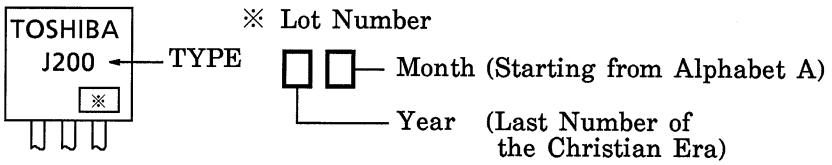
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Drain cut−off current	I_{DSS}	V_{DS} = −180 V, V_{GS} = 0	—	—	−1.0	mA
Gate leakage current	I_{GSS}	V_{DS} = 0, V_{GS} = ±20 V	—	—	±0.5	μA
Drain−source breakdown voltage	$V_{(BR)\ DSS}$	I_D = −10 mA, V_{GS} = 0	−180	—	—	V
Gate−source cut−off voltage (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 = −6 A, V_{GS} = −10 V	—	−1.5	−5.0	V
Forward transfer admittance	$\|Y_{fs}\|$	V_{DS} = −10 V, I_D = −3 A	—	4.0	—	S
Input capacitance	C_{iss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	1300	—	pF
Output capacitance	C_{oss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	350	—	
Reverse transfer capacitance	C_{rss}	V_{DS} = −30 V, V_{GS} = 0, f = 1 MHz	—	200	—	

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

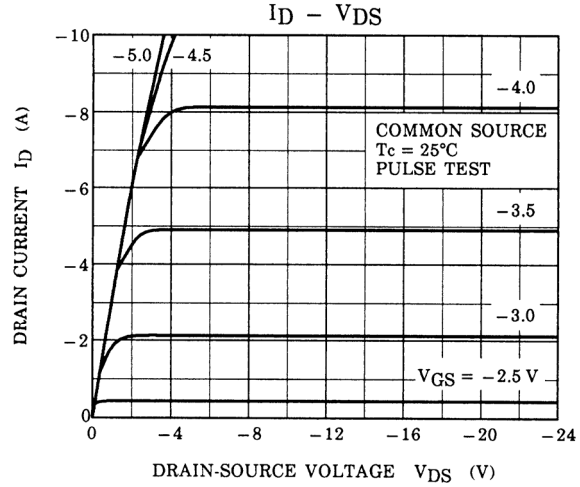
Note 2: $V_{GS\ (OFF)}$ Classification O: −0.8~−1.6, Y: −1.4~−2.8

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

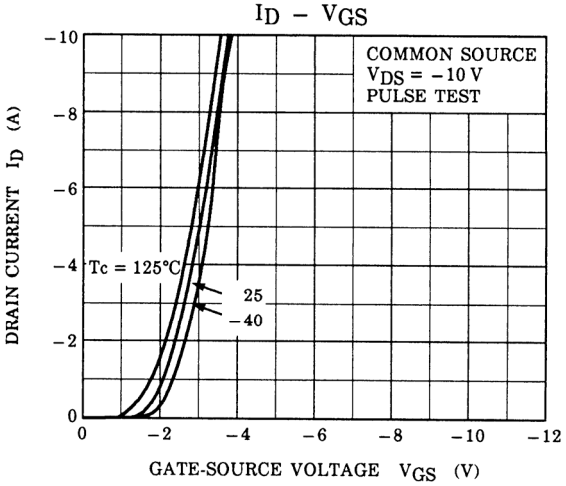
Marking



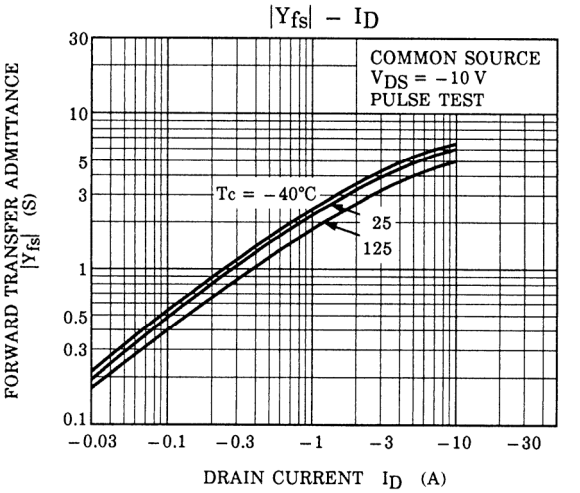
$I_D - V_{DS}$



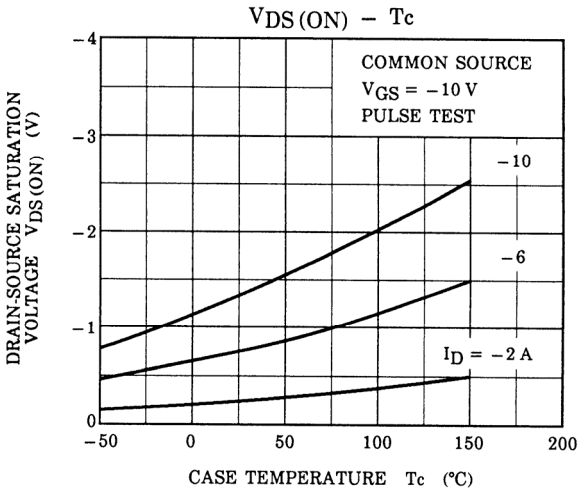
$I_D - V_{GS}$



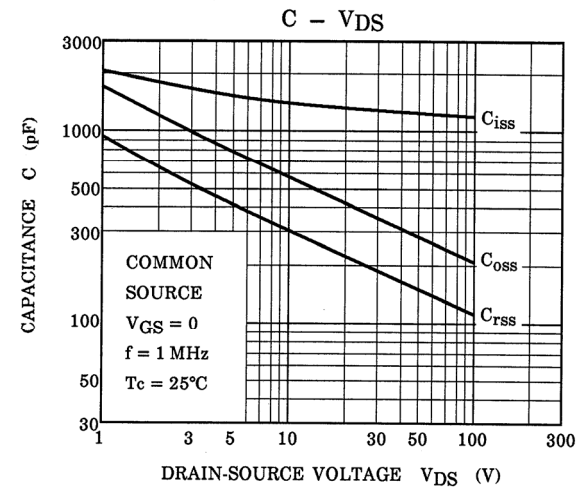
$|Y_{fs}| - I_D$



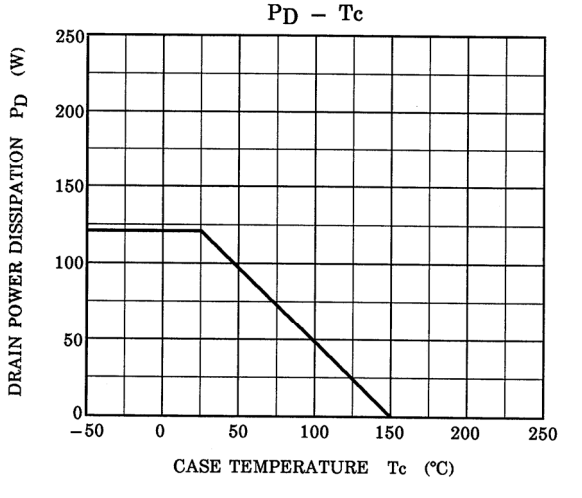
$V_{DS(ON)} - Tc$

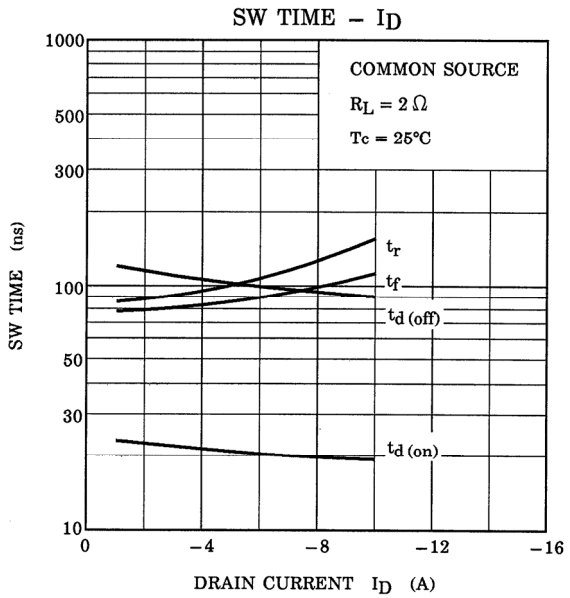


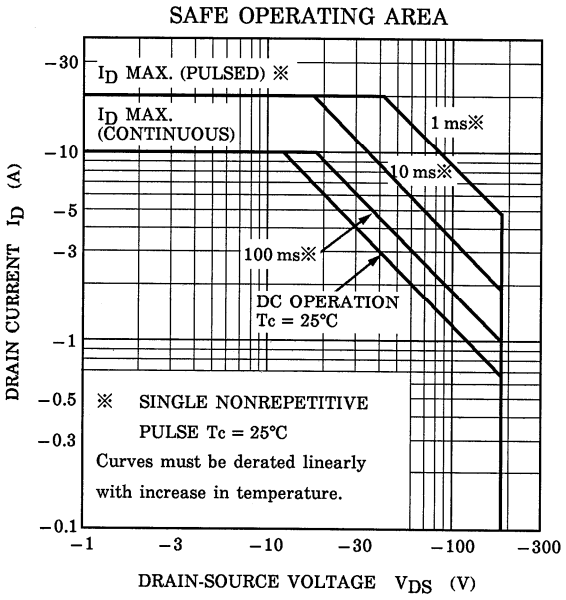
$C - V_{DS}$



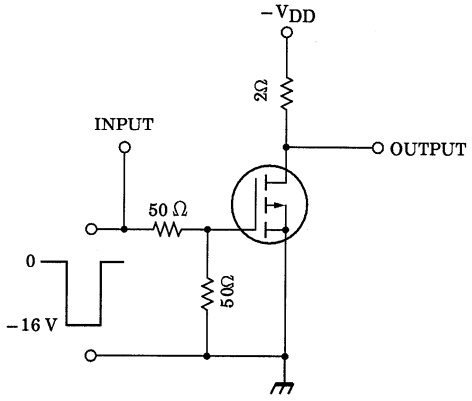
$P_D - Tc$



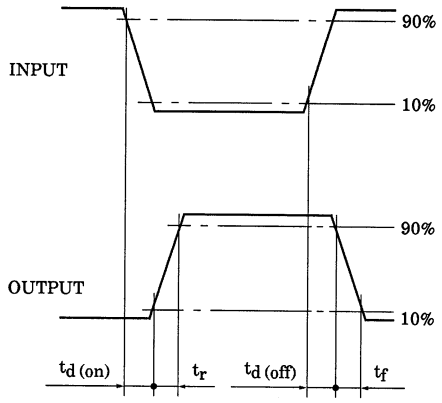




Switching Time Test Circuit



Waveforms



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