

TOSHIBA Field Effect Transistor Silicon N Channel Junction Type

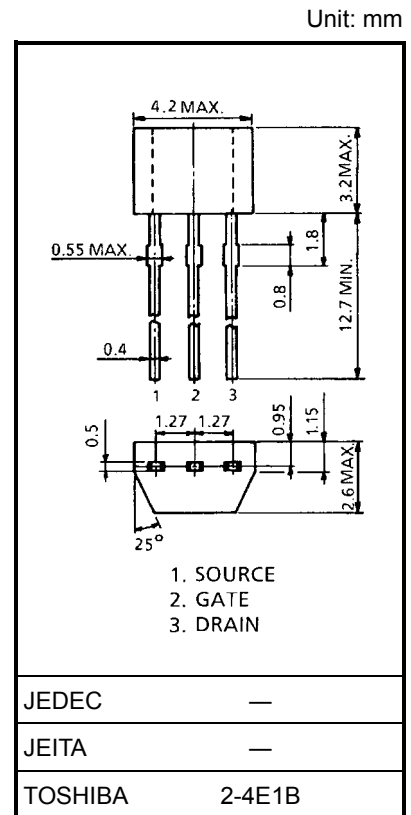
2SK330

For Audio Amplifier, Analog Switch, Constant Current and Impedance Converter Applications

- High breakdown voltage: $V_{GDS} = -50$ V
- High input impedance: $I_{GSS} = -1$ nA (max) ($V_{GS} = -30$ V)
- Low $R_{DS(ON)}$: $R_{DS(ON)} = 320 \Omega$ (typ.) ($I_{DSS} = 5$ mA)
- Complementary to 2SJ105
- Small package

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	200	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$



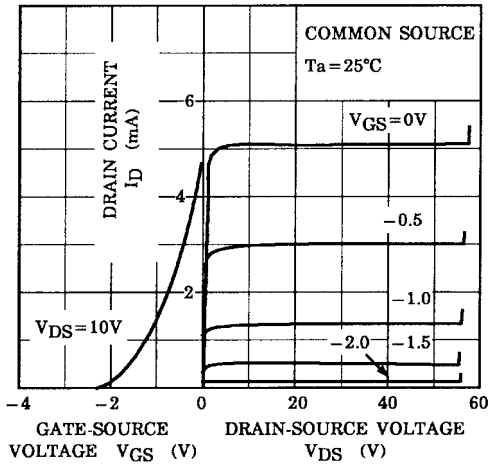
Weight: 0.13 g (typ.)

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

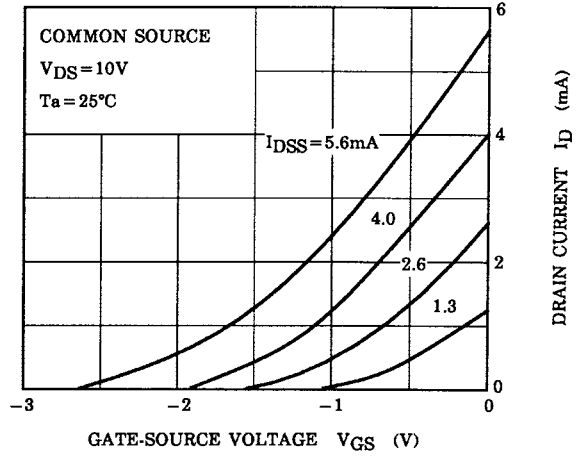
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate cut-off current	I_{GSS}	$V_{GS} = -30$ V, $V_{DS} = 0$	—	—	-1.0	nA
Gate-drain breakdown voltage	$V_{(BR)GDS}$	$V_{DS} = 0$, $I_G = -100 \mu\text{A}$	-50	—	—	V
Drain current	I_{DSS} (Note)	$V_{DS} = 10$ V, $V_{GS} = 0$	1.2	—	14	mA
Gate-source cut-off voltage	$V_{GS(OFF)}$	$V_{DS} = 10$ V, $I_D = 0.1 \mu\text{A}$	-0.7	—	-6.0	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ kHz	1.5	4	—	mS
Drain-source ON resistance	$R_{DS(ON)}$	$V_{DS} = 10$ mV, $V_{GS} = 0$, $I_{DSS} = 5$ mA	—	320	—	Ω
Input capacitance	C_{iss}	$V_{DS} = 10$ V, $V_{GS} = 0$, $f = 1$ MHz	—	9.0	—	pF
Reverse transfer capacitance	C_{rss}	$V_{GD} = -10$ V, $I_D = 0$, $f = 1$ MHz	—	2.5	—	pF

Note: I_{DSS} classification Y: 1.2~3.0 mA, GR: 2.6~6.5 mA, BL: 6~14 mA

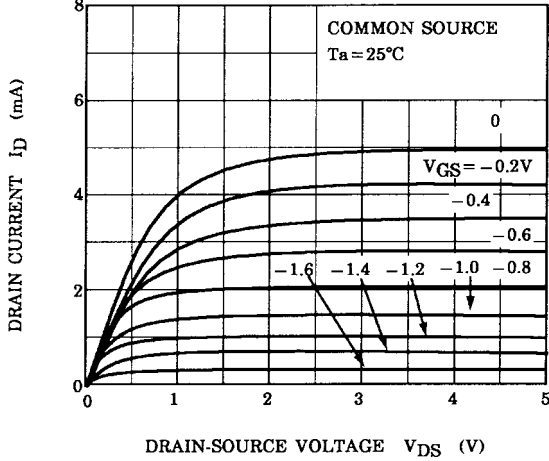
STATIC CHARACTERISTIC



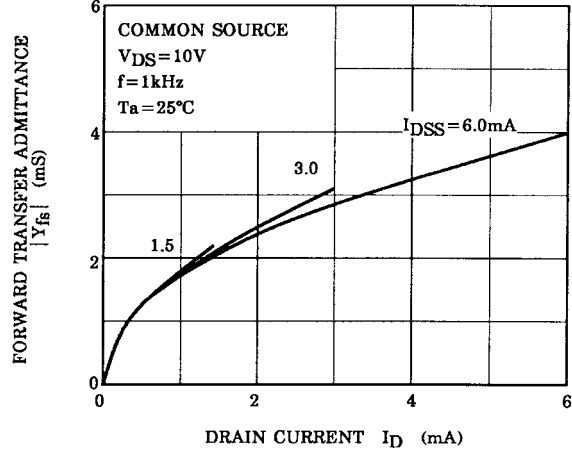
$I_D - V_{GS}$



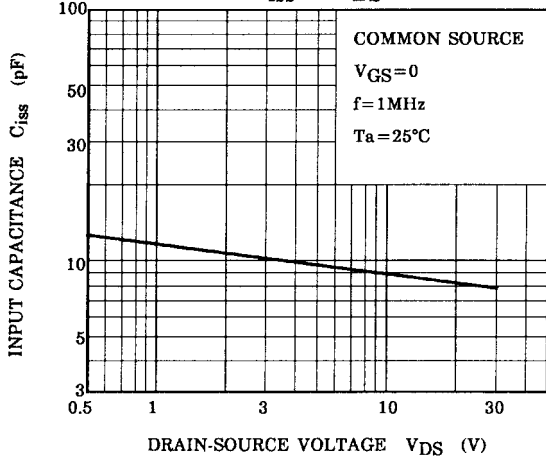
$I_D - V_{DS}$ (LOW VOLTAGE REGION)



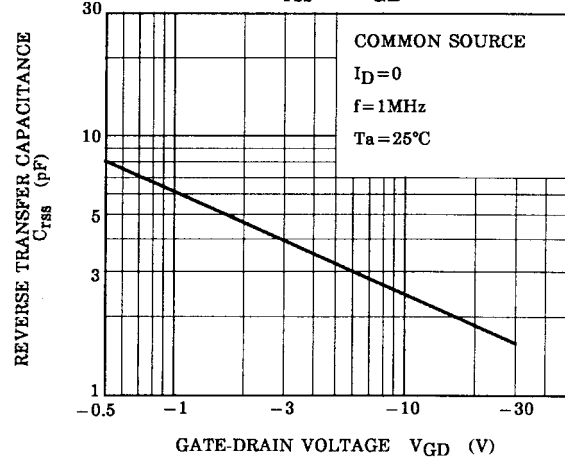
$|Y_{fs}| - I_D$

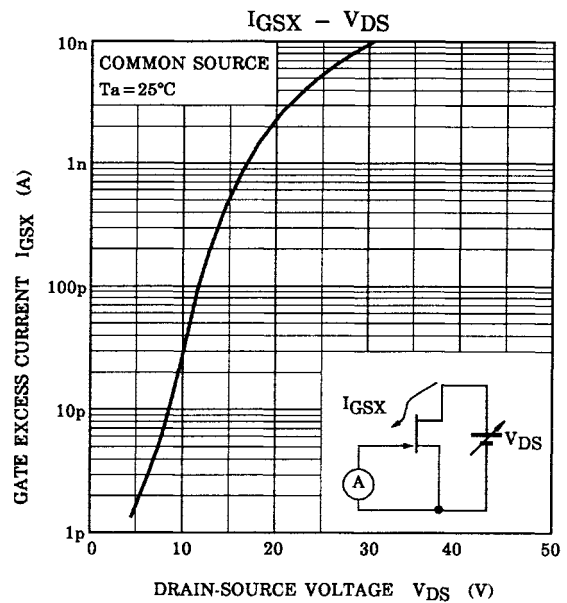
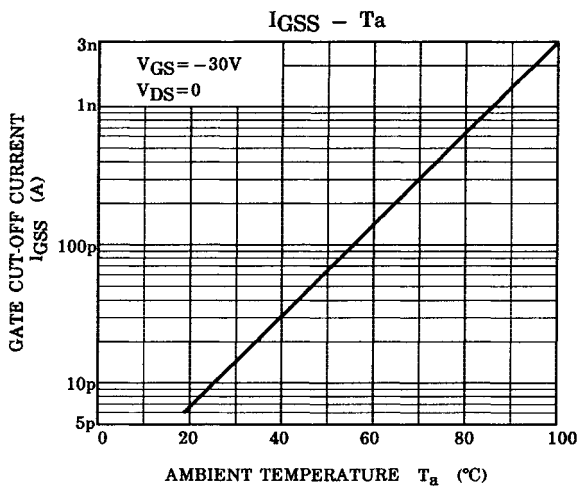
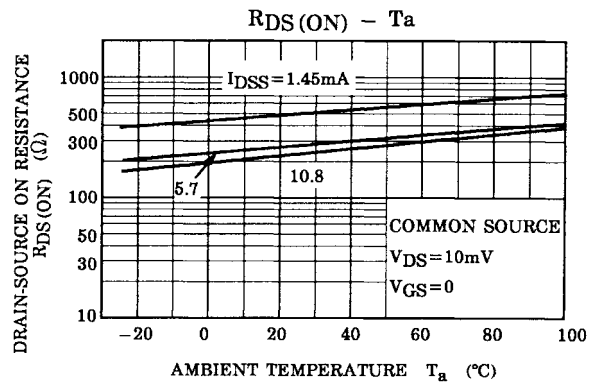
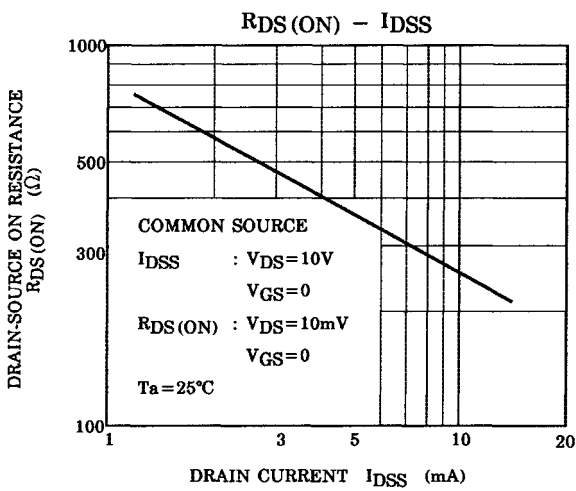
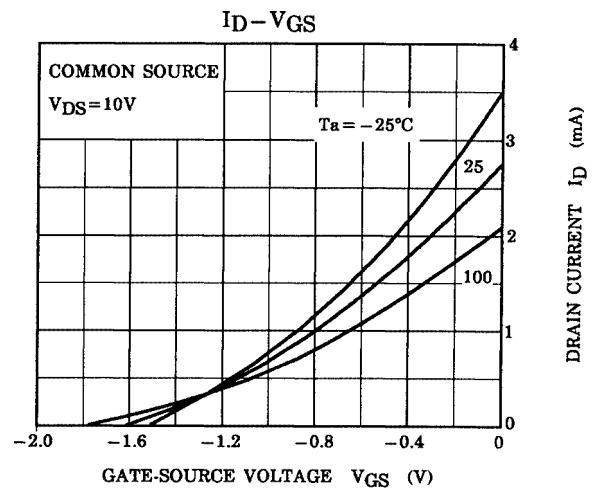
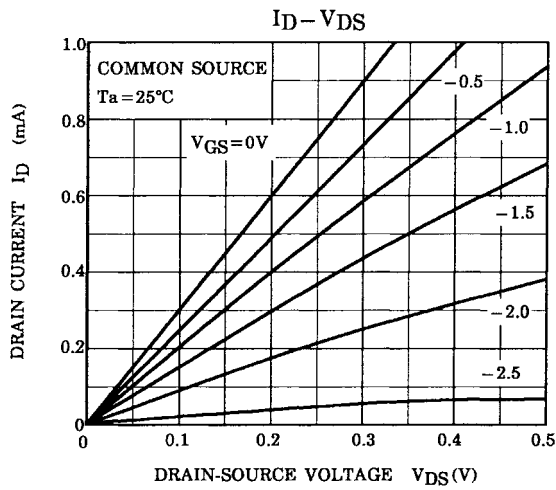


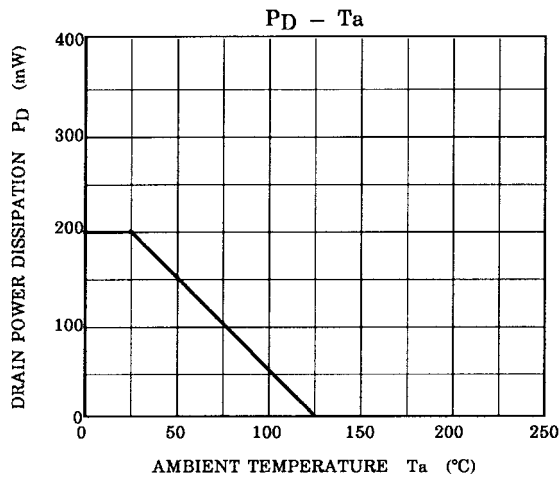
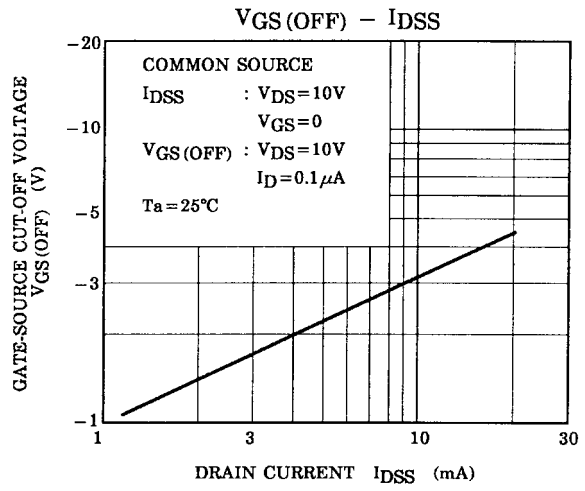
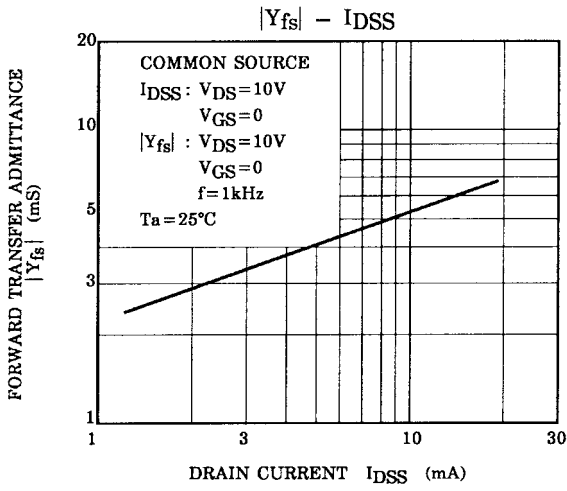
$C_{iss} - V_{DS}$



$C_{rss} - V_{GD}$







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