

# 2SK365

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

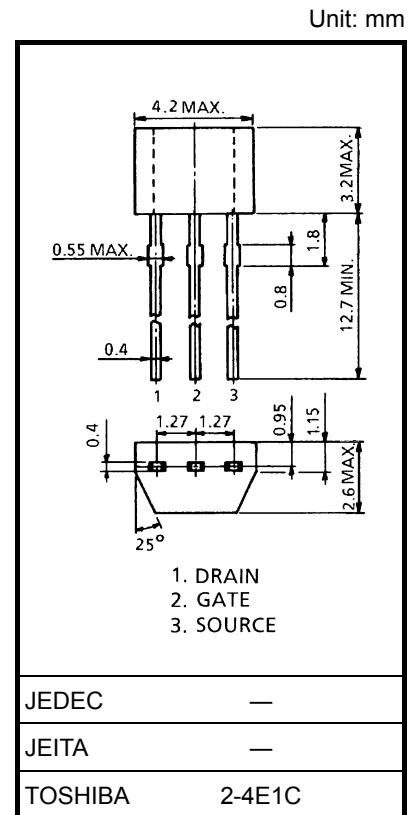
- High breakdown voltage:  $V_{GDS} = -50\text{ V}$
- High input impedance:  $I_{GSS} = -1.0\text{ nA (max)}$  ( $V_{GS} = -30\text{ V}$ )
- Low  $R_{DS(ON)}$ :  $R_{DS(ON)} = 80\ \Omega$  (typ.) ( $I_{DSS} = 5\text{ mA}$ )
- Small package

### Absolute 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	$^\circ\text{C}$

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).



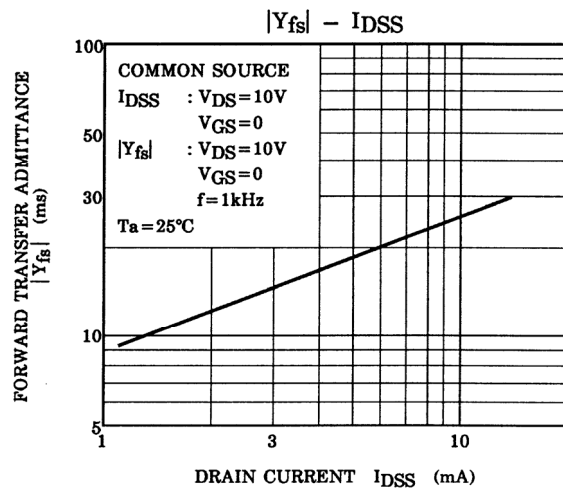
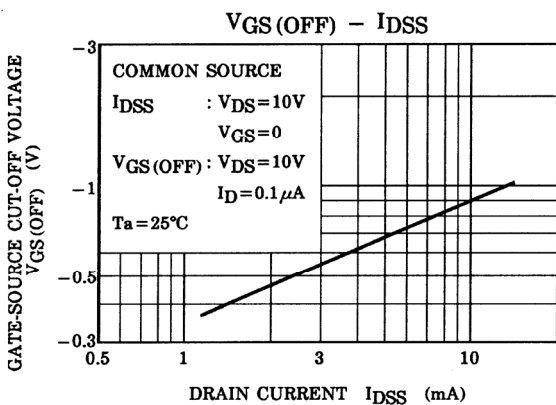
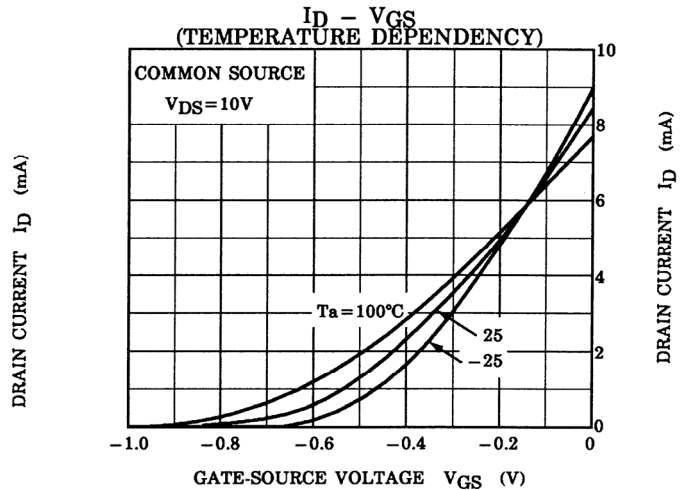
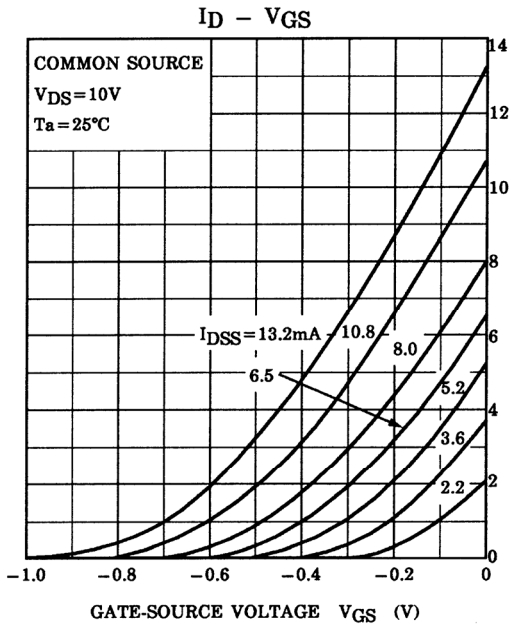
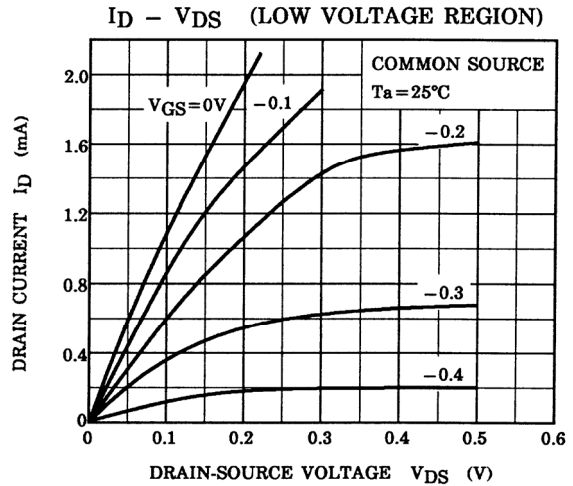
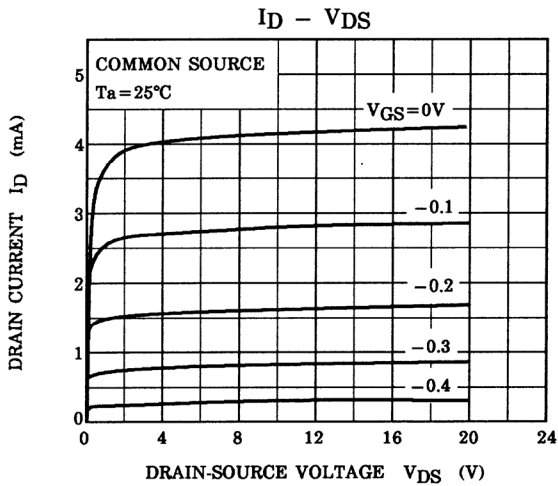
Weight: 0.13 g (typ.)

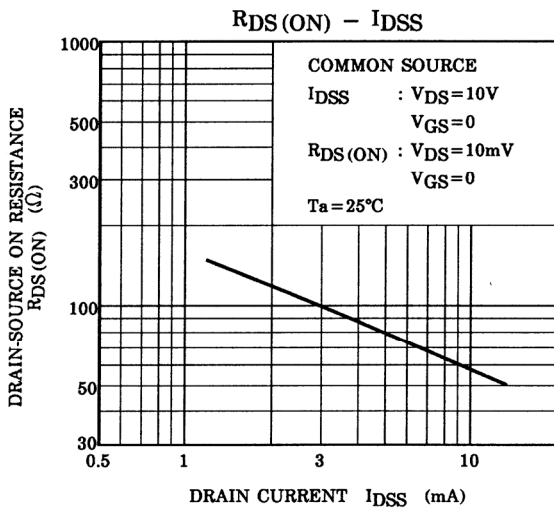
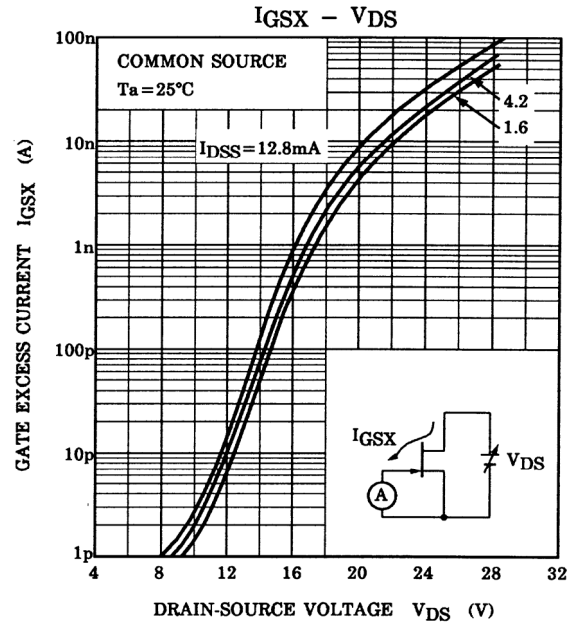
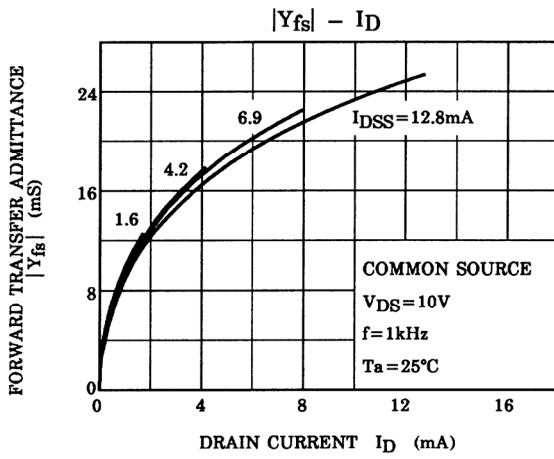
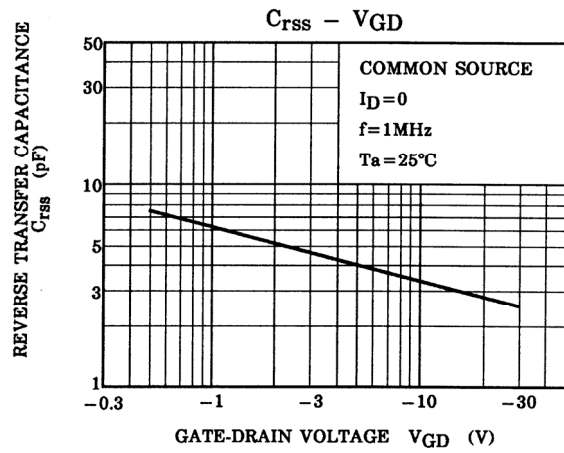
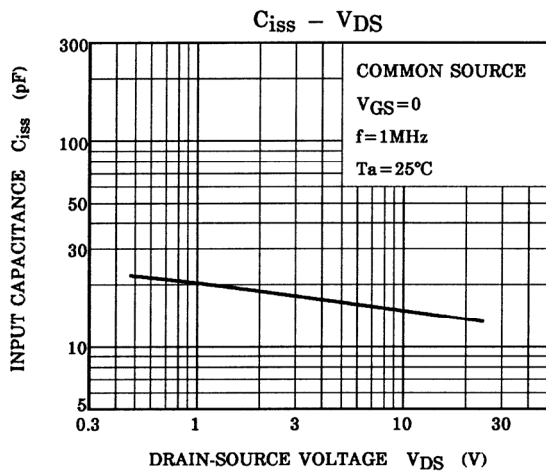
### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

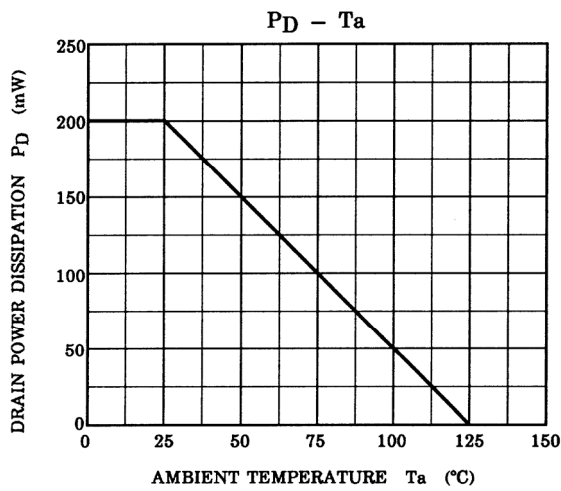
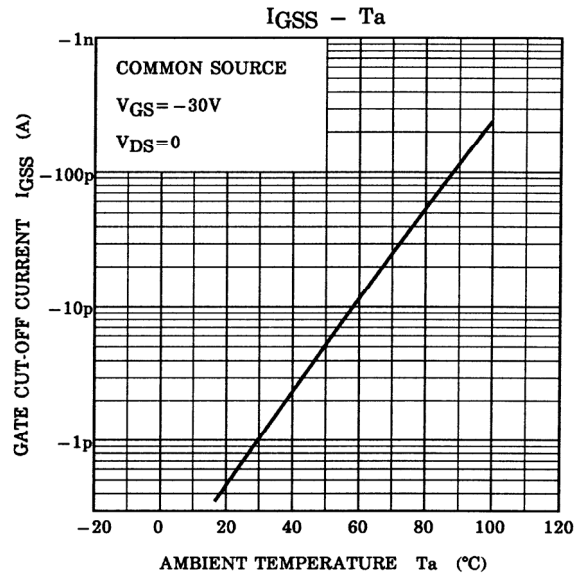
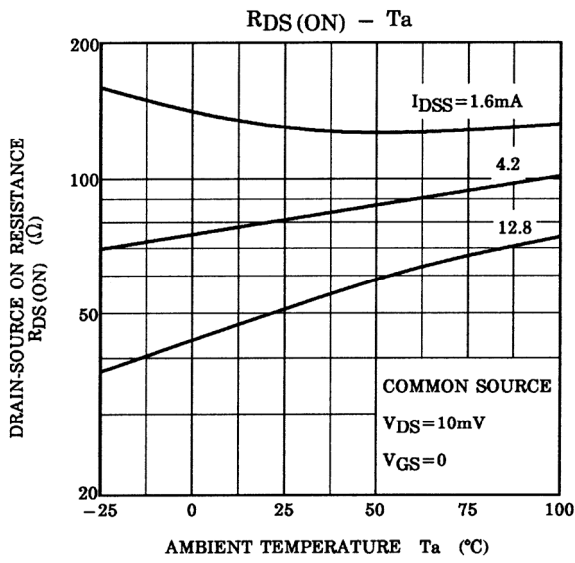
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate cut-off current	$I_{GSS}$	$V_{GS} = -30\text{ V}, V_{DS} = 0$	—	—	-1.0	nA
Gate-drain breakdown voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\ \mu\text{A}$	-50	—	—	V
Drain current	$I_{DSS}$ (Note 1)	$V_{DS} = 10\text{ V}, V_{GS} = 0$	1.2	—	14	mA
Gate-source cut-off voltage	$V_{GS(OFF)}$	$V_{DS} = 10\text{ V}, I_D = 0.1\ \mu\text{A}$	-0.25	—	-1.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10\text{ V}, V_{GS} = 0, f = 1\text{ kHz}$ (Note 2)	5.0	19	—	mS
Input capacitance	$C_{iss}$	$V_{DS} = 10\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$	—	13	—	pF
Reverse transfer capacitance	$C_{rss}$	$V_{DG} = 10\text{ V}, I_D = 0, f = 1\text{ MHz}$	—	3	—	pF
Drain-source ON resistance	$R_{DS(ON)}$	$V_{DS} = 10\text{ mV}, V_{GS} = 0$ (Note 2)	—	80	—	$\Omega$

Note 1:  $I_{DSS}$  classification Y: 1.2~3.0 mA, GR: 2.6~6.5 mA, BL: 6~14 mA

Note 2: Condition of the typical value  $I_{DSS} = 5\text{ mA}$







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20070701-EN GENERAL

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