

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

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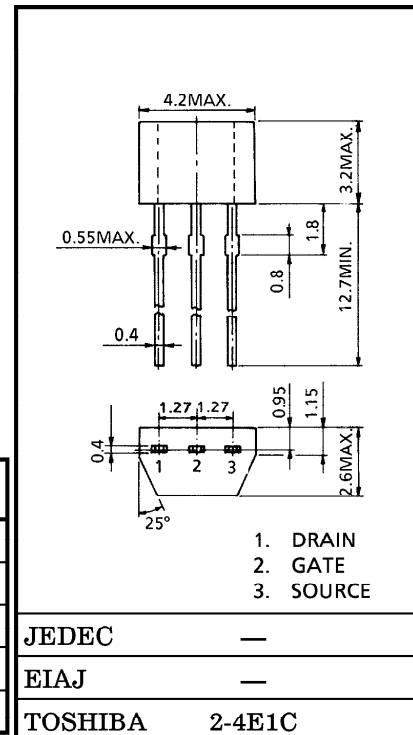
FOR AUDIO AMPLIFIER, ANALOG-SWITCH, CONSTANT CURRENT AND IMPEDANCE CONVERTER APPLICATIONS

Unit in mm

- High Breakdown Voltage : $V_{GDS} = -50V$
- High Input Impedance : $I_{GSS} = -1.0nA$ (Max.)
($V_{GS} = -30V$)
- Low $R_{DS(ON)}$: $R_{DS(ON)} = 80\Omega$ (Typ.)
($I_{DSS} = 5mA$)
- Small Package

MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	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	$^\circ C$
Storage Temperature Range	T_{stg}	-55~125	$^\circ C$



Weight : 0.13g

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	$V_{GS} = -30V, V_{DS} = 0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\mu A$	-50	—	—	V
Drain Current	I_{DSS} (Note 1)	$V_{DS} = 10V, V_{GS} = 0$	1.2	—	14	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS} = 10V, I_D = 0.1\mu A$	-0.25	—	-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V, V_{GS} = 0, f = 1kHz$ (Note 2)	5.0	19	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	—	13	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DG} = 10V, I_D = 0, f = 1MHz$	—	3	—	pF
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{DS} = 10mV, V_{GS} = 0$ (Note 2)	—	80	—	Ω

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

Note 2 : Condition of the typical Value $I_{DSS} = 5mA$

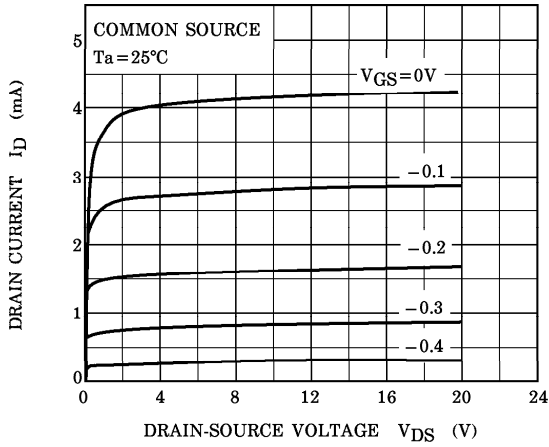
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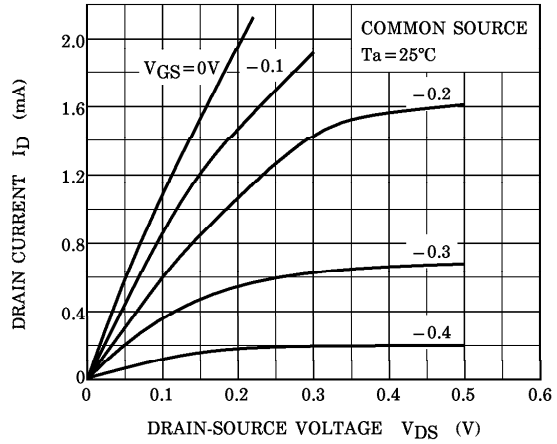
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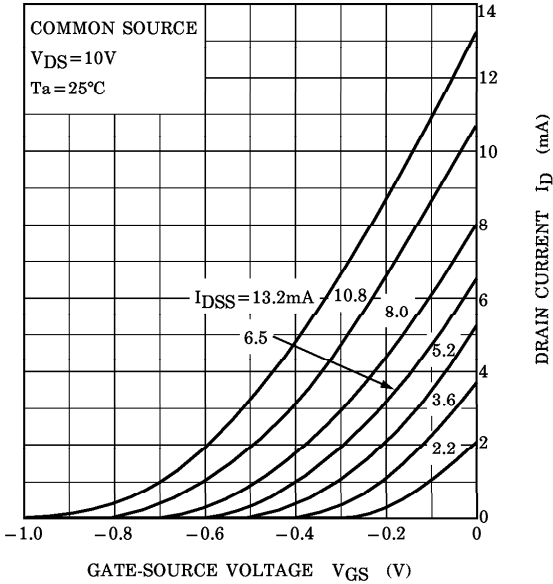
$I_D - V_{DS}$



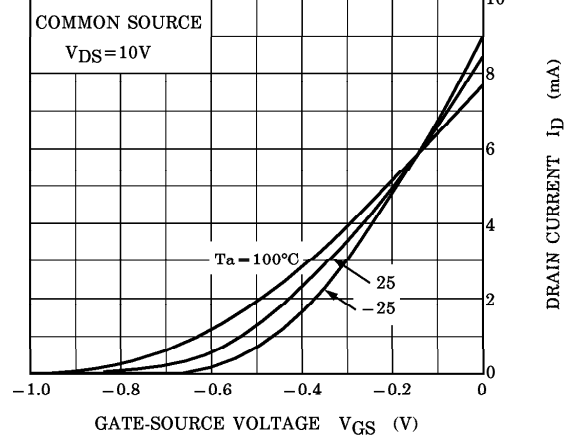
$I_D - V_{DS}$ (LOW VOLTAGE REGION)



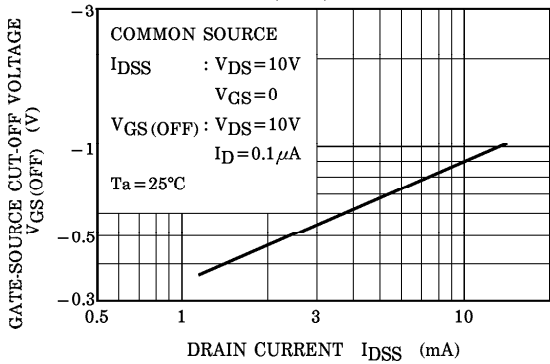
$I_D - V_{GS}$



$I_D - V_{GS}$ (TEMPERATURE DEPENDENCY)



$V_{GS}(\text{OFF}) - I_{DSS}$



$|Y_{fs}| - I_{DSS}$

