

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

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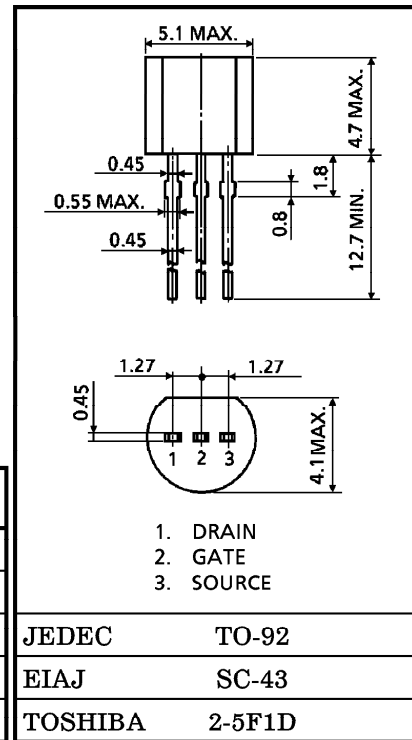
FOR AUDIO AMPLIFIER, ANALOG SWITCH, CONSTANT CURRENT AND IMPEDANCE CONVERTER APPLICATIONS

Unit in mm

- High Breakdown Voltage : $V_{GDS} = -40V$
- High Input Impedance : $I_{GSS} = -1.0nA$ (Max.)
($V_{GS} = -30V$)
- Low $R_{DS(ON)}$: $R_{DS(ON)} = 20\Omega$ (Typ.)
($I_{DSS} = 15mA$)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Gate-Drain Voltage	V_{GDS}	-40	V
Gate Current	I_G	10	mA
Drain Power Dissipation	P_D	400	mW
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature Range	T_{stg}	-55~125	$^\circ C$



Weight : 0.21g (Typ.)

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	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\mu A$	-40	—	—	V
Drain Current	I_{DSS} (Note 1)	$V_{DS} = 10V, V_{GS} = 0$	5.0	—	30	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS} = 10V, I_D = 0.1\mu A$	-0.3	—	-1.2	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V, V_{GS} = 0, f = 1kHz$ (Note 2)	25	60	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	—	75	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GD} = -10V, I_D = 0, f = 1MHz$	—	15	—	pF
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{DS} = 10mV, V_{GS} = 0$ (Note 2)	—	20	—	Ω

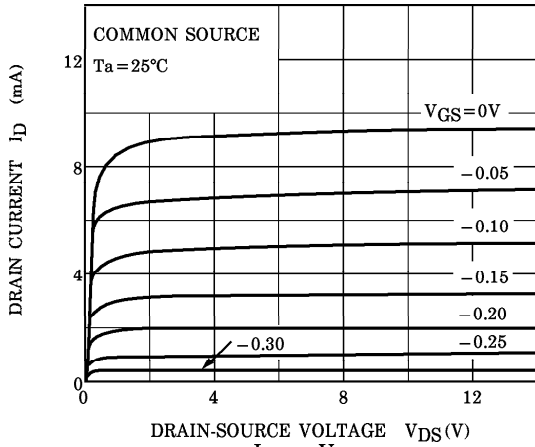
Note 1 : I_{DSS} Classification GR : 5.0~10.0mA, BL : 8.0~16.0mA, V : 14.0~30.0mA

Note 2 : Condition of the typical value $I_{DSS} = 15mA$

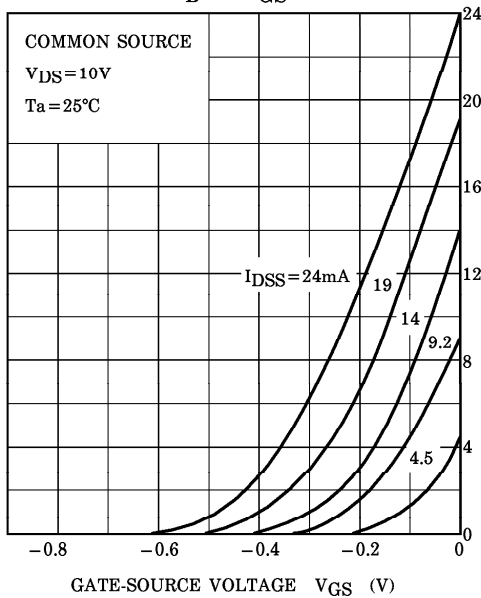
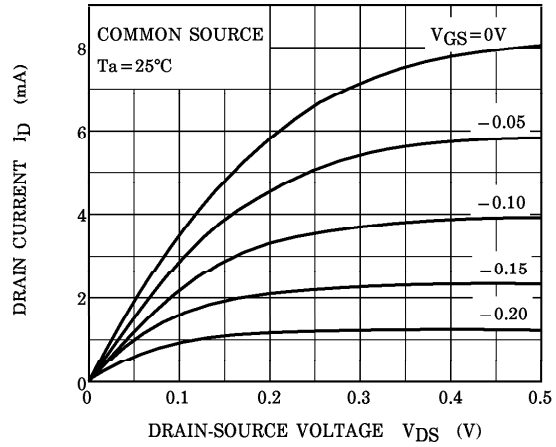
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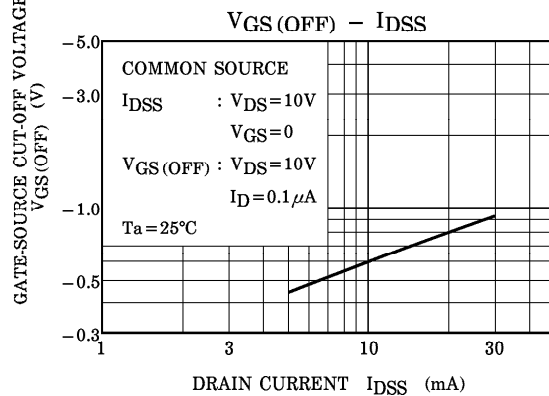
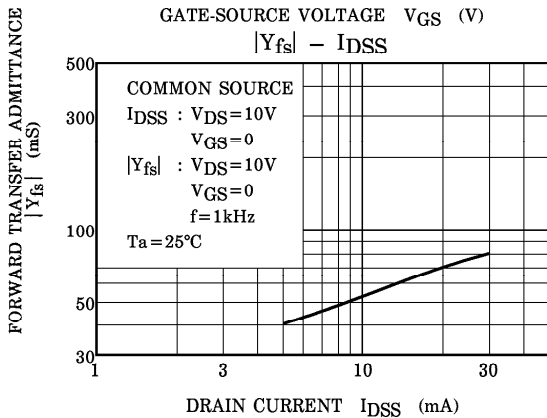
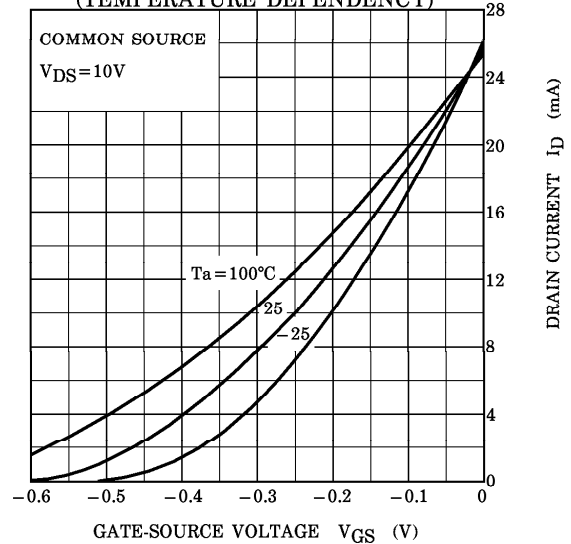
$I_D - V_{DS}$



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



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



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