

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

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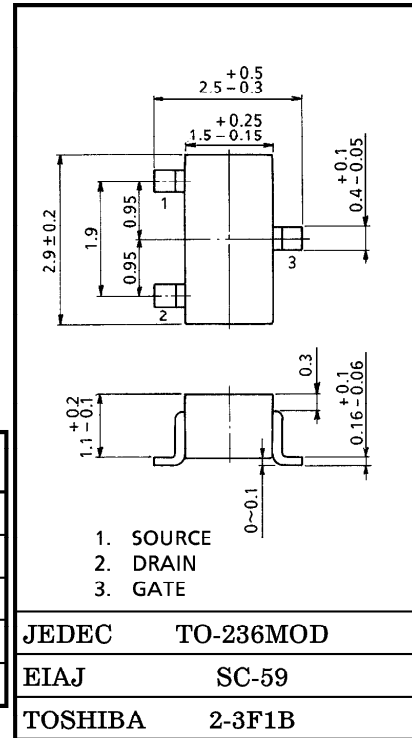
GENERAL PURPOSE AND IMPEDANCE CONVERTER AND CONDENSER MICROPHONE APPLICATIONS

Unit in mm

- High Breakdown Voltage : $V_{GDS} = -50V$
- High Input Impedance : $I_{GSS} = -1.0nA$ (Max.) ($V_{GS} = -30V$)
- Low Noise : $NF = 0.5dB$ (Typ.)
($R_G = 100k\Omega$, $f = 120Hz$)
- 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	100	mW
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature Range	T_{stg}	-55~125	$^\circ C$



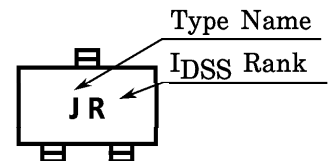
Weight : 0.012g

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)	$V_{DS} = 10V, V_{GS} = 0$	0.3	—	6.5	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS} = 10V, I_D = 0.1\mu A$	-0.4	—	-5.0	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10V, V_{GS} = 0, f = 1kHz$	1.2	—	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0, f = 1MHz$	—	8.2	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GD} = -10V, I_D = 0, f = 1MHz$	—	2.6	—	pF
Noise Figure	NF	$V_{DS} = 15V, V_{GS} = 0$ $R_G = 100k\Omega, f = 120Hz$	—	0.5	—	dB

Note : I_{DSS} Classification R : 0.30~0.75mA, O : 0.60~1.40mA
Y : 1.2~3.0mA, GR : 2.6~6.5mA

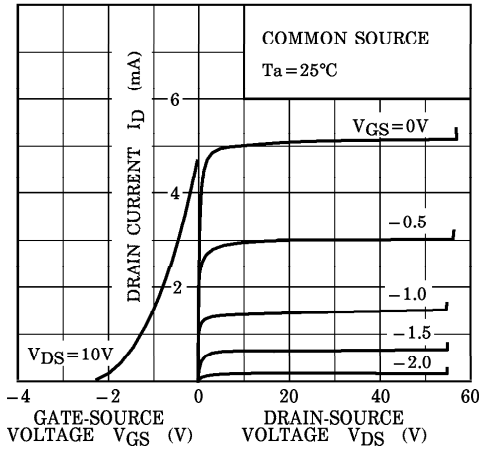
Marking



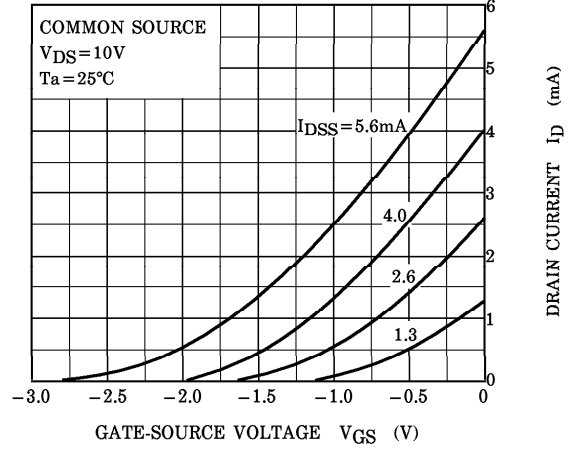
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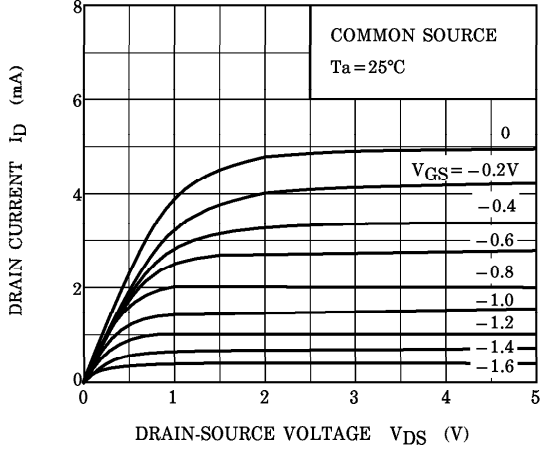
STATIC CHARACTERISTICS



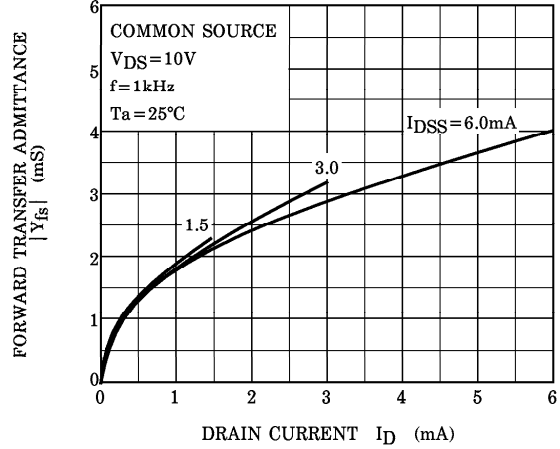
I_D - V_{GS}



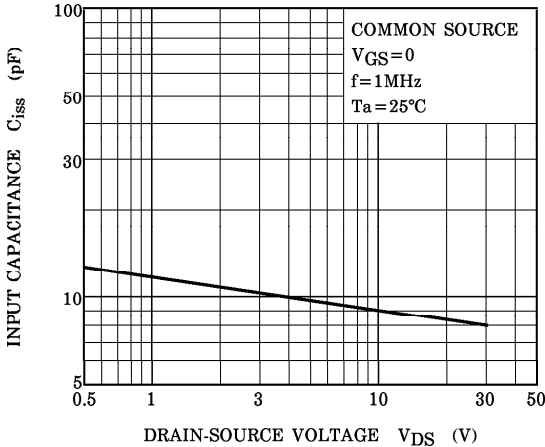
I_D - V_{DS} (LOW VOLTAGE REGION)



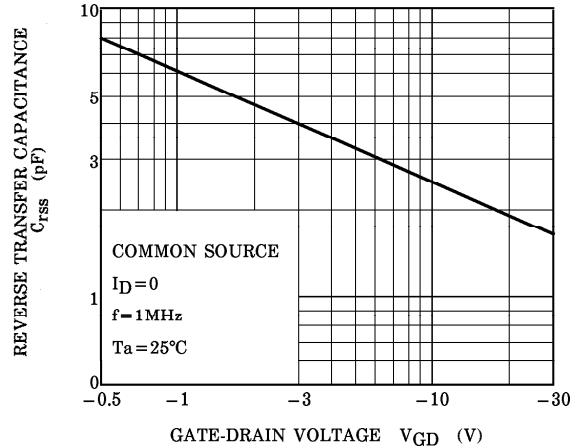
|Y_{fs}| - I_D



C_{iss} - V_{DS}



C_{rss} - V_{GD}



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