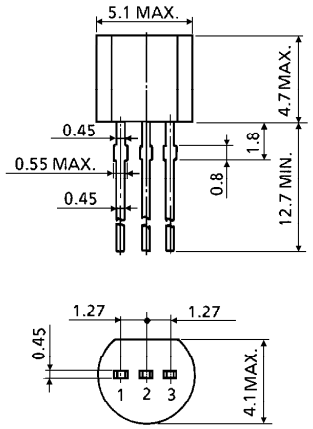
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

2SK30ATM

LOW NOISE PRE-AMPLIFIER, TONE CONTROL AMPLIFIER AND DC-AC HIGH INPUT IMPEDANCE AMPLIFIER CIRCUIT APPLICATIONS

- High Breakdown Voltage : $V_{GDS} = -50V$
- High Input Impedance : $I_{GSS} = -1nA$ (Max.) ($V_{GS} = -30V$)
- Low Noise : NF = 0.5dB (Typ.) ($V_{DS} = 15V$, $V_{GS} = 0$, $R_G = 100k\Omega$, f = 120Hz)

Unit in mm



1. SOURCE
2. GATE
3. DRAIN

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1C

Weight : 0.21g (Typ.)

MAXIMUM RATINGS (Ta = 25°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	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°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}	$V_{GS} = 0$, $V_{DS} = 0$, f = 1MHz	—	8.2	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{GD} = -10V$, $V_{DS} = 0$, f = 1MHz	—	2.6	—	pF
Noise Figure	NF	$V_{DS} = 15V$, $V_{GS} = 0$, $R_G = 100k\Omega$, f = 120Hz	—	0.5	5.0	dB

Note : I_{DSS} Classification R : 0.30~0.75, O : 0.60~1.40, Y : 1.20~3.00, GR : 2.60~6.50

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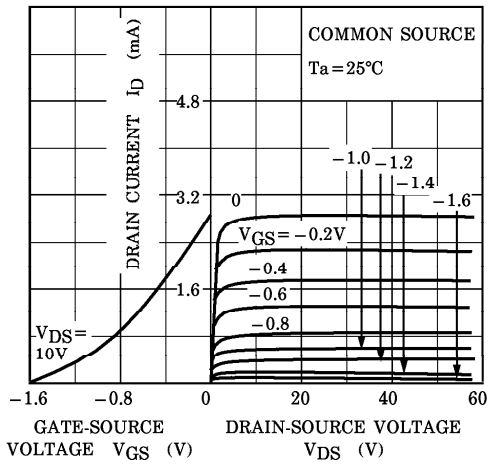
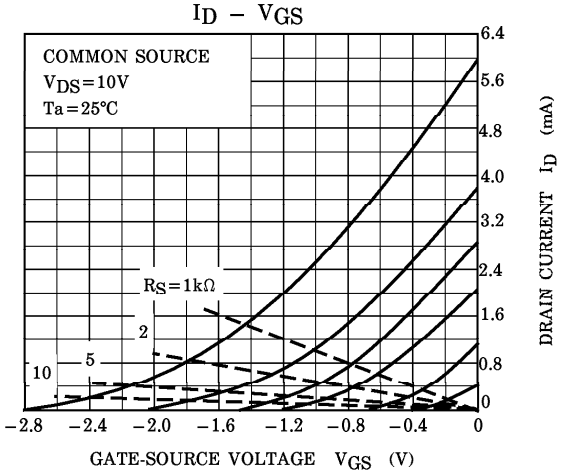
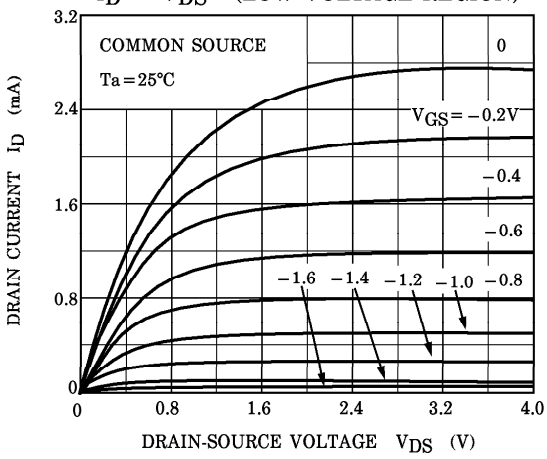
STATIC CHARACTERISTICS



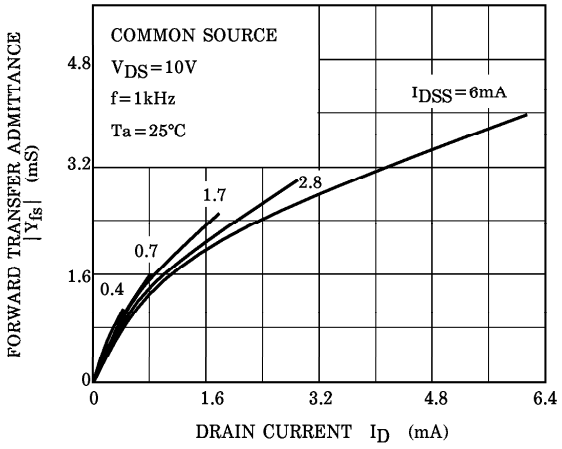
I_D – V_{GS}



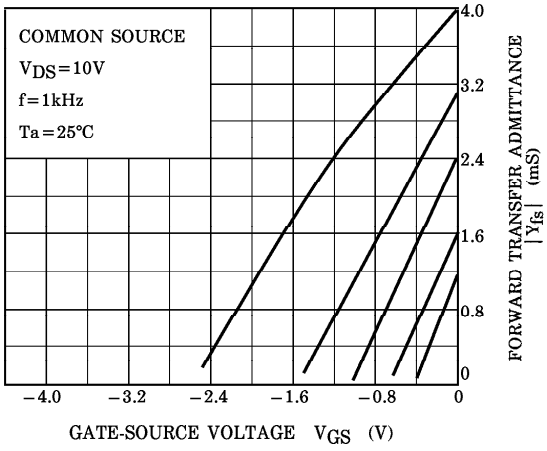
I_D – V_{DS} (LOW VOLTAGE REGION)



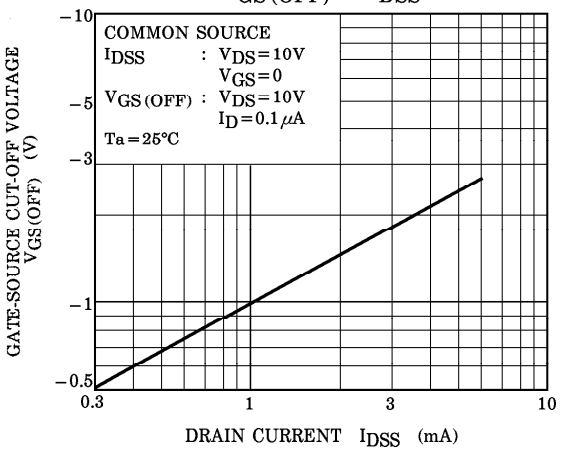
$|Y_{fs}|$ – I_D



$|Y_{fs}|$ – V_{GS}



$V_{GS(OFF)}$ – I_{DSS}



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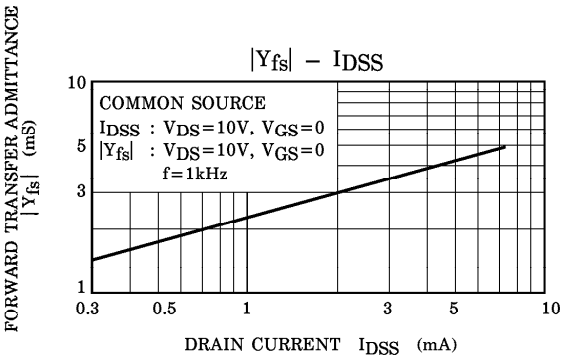
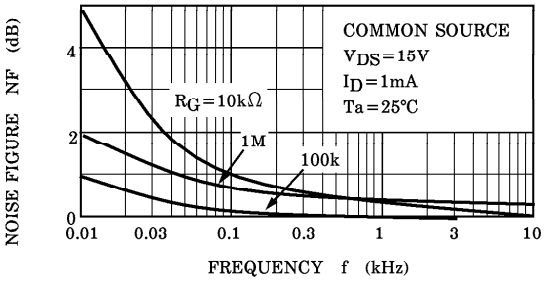
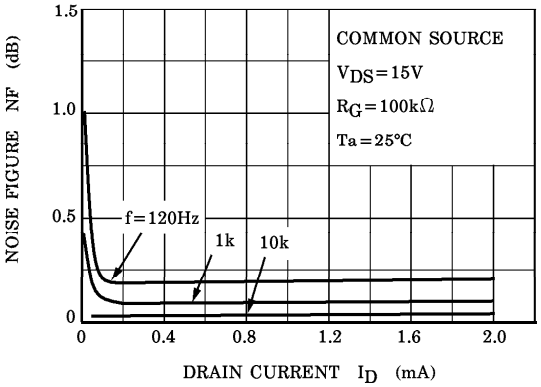
$|Y_{fs}|$ – I_{DSS}



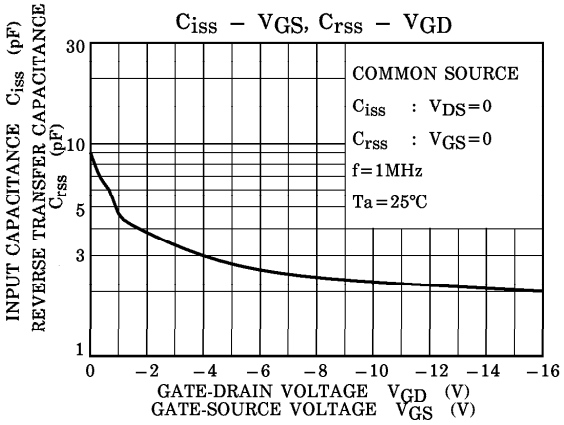
NF – f



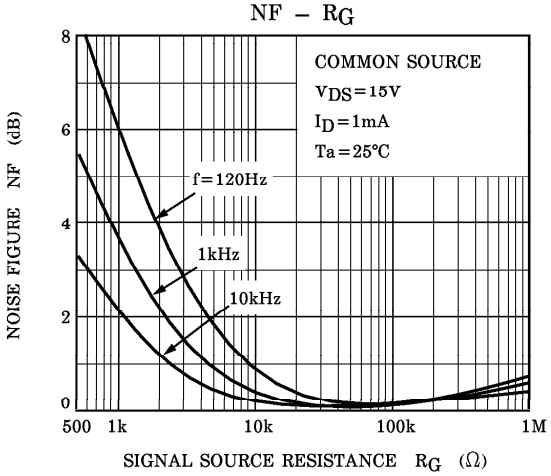
NF – I_D



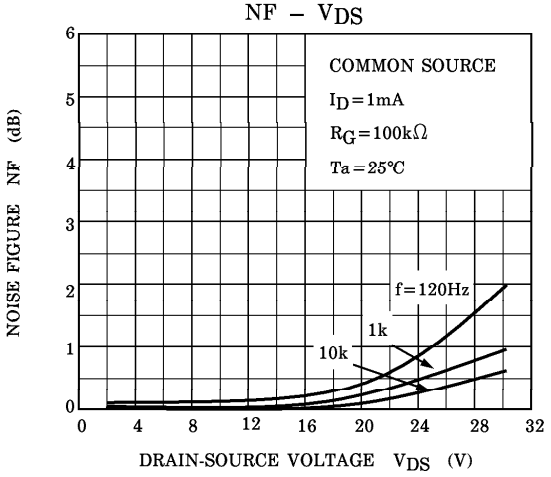
C_{iss} – V_{GS}, C_{rss} – V_{GD}



NF – R_G



NF – V_{DS}



P_D – Ta