

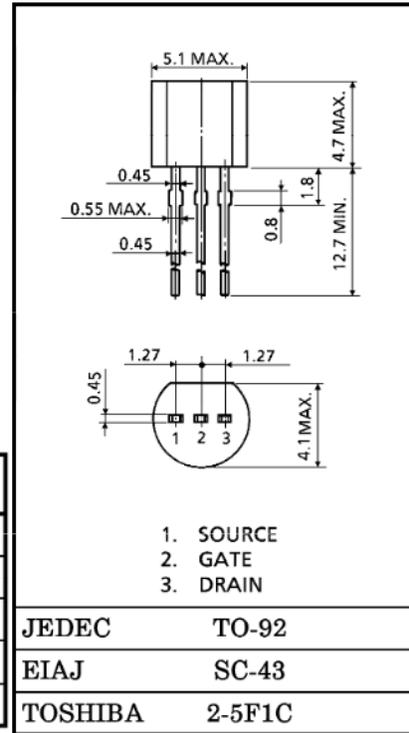
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL JUNCTION TYPE

# 2SK30ATM

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

Unit in mm

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



**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 : 0.21g (Typ.)

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

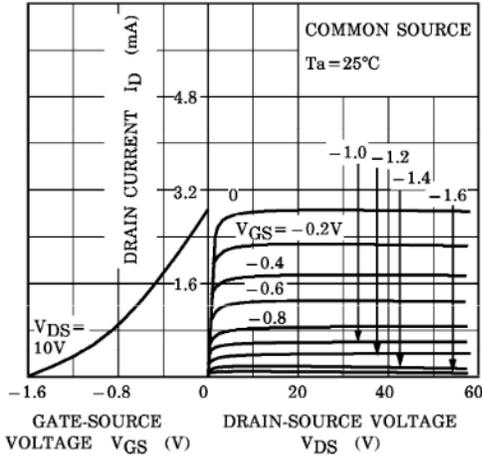
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	$I_{GSS}$	$V_{GS} = -30V, V_{DS} = 0$	—	—	-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\mu A$	-50	—	—	V
Drain Current	$I_{DSS}$ (Note)	$V_{DS} = 10V, V_{GS} = 0$	0.3	—	6.5	mA
Gate-Source Cut-off 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, 0 : 0.60~1.40, Y : 1.20~3.00, GR : 2.60~6.50

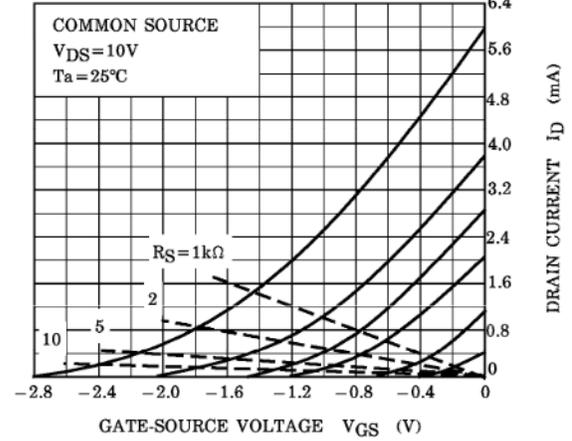
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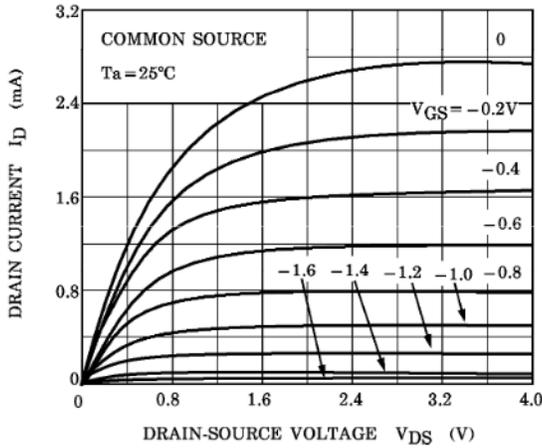
STATIC CHARACTERISTICS



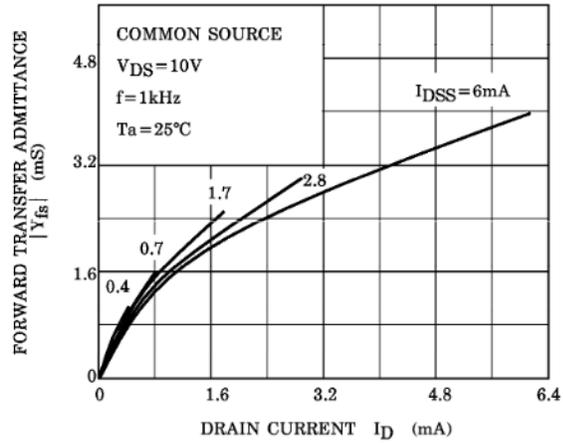
I<sub>D</sub> - V<sub>GS</sub>



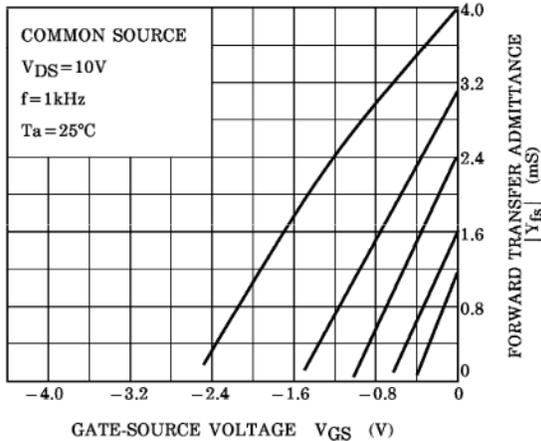
I<sub>D</sub> - V<sub>DS</sub> (LOW VOLTAGE REGION)



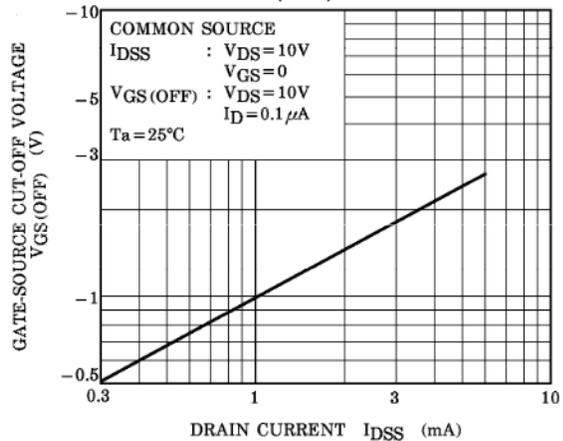
|Y<sub>fs</sub>| - I<sub>D</sub>



|Y<sub>fs</sub>| - V<sub>GS</sub>



V<sub>GS(OFF)</sub> - I<sub>DSS</sub>



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