2SK112

SILICON N CHANNEL JUNCTION TYPE
(INDUSTRIAL APPLICATIONS)

FOR LOW NOISE AMPLIFIER, DC-AC HIGH INPUT IMPEDANCE CIRCUIT, CHOPPER AND SWITCHING CIRCUIT APPLICATIONS.

FEATURES:

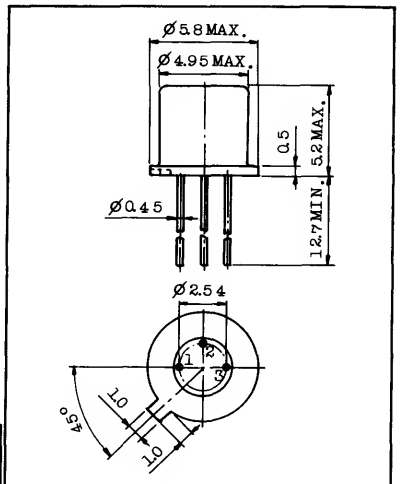
. Ultra Low Noise, as well Low Source Impedance
  : NF=10dB(Max.) (f=10Hz, R_g=1kΩ)
  : NF= 2dB(Max.) (f=1kHz, R_g=1kΩ)

. High Forward Transfer Admittance
  : $|Y_{fs}|$ = 7~34mS

. Low Gate-Source Cutoff Voltage
  : $V_{GS(OFF)}$=-0.75V(Max.) (2SK112-R)
  : $V_{GS(OFF)}$=-1.20V(Max.) (2SK112-O)

. High Breakdown Voltage: $V_{(BR)GDS}$=-50V

Unit in mm



JEDEC	TO-18
EIAJ	TC-7, TB-8C
TOSHIBA	2-5A1C

Weight : 0.31g

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	250	mW
Junction Temperature	Tj	150	°C
Storage Temperature Range	Tstg	-65~150	°C

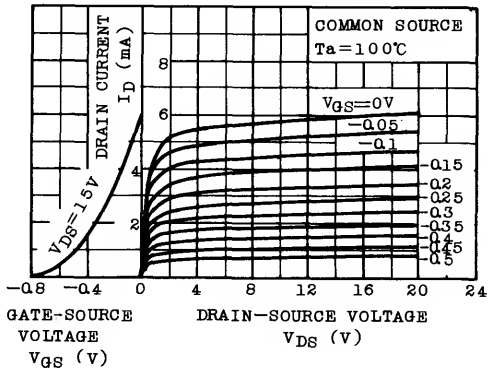
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONCITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current	IGSS	V_{GS}=-30V, V_{DS}=0	-	-	-0.1	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	V_{DS}=0, I_G=-1μA	-50	-	-	V
Drain Current	I_{DSS} (Note)	V_{DS}=15V, V_{GS}=0	1.2	-	9.0	mA
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$ (Note)	V_{DS}=15V, I_D=0.1μA	-0.25	-	-1.2	V
Forward Transfer Admittance	$\|Y_{fs}\|$ (Note)	V_{DS}=15V, V_{GS}=0, f=1kHz	7	-	34	mS
Input Capacitance	Ciss	V_{DS}=15V, V_{GS}=0, f=1MHz	-	12	-	pF
Reverse Transfer Capacitance	Crss	V_{DS}=15V, V_{GS}=0, f=1MHz	-	3	-	pF
Noise Figure	NF(1)	V_{DS}=15V, I_D=1mA, R_g=1kΩ, f=10Hz	-	5	10	dB
	NF(2)	V_{DS}=15V, I_D=1mA, R_g=1kΩ, f=1kHz	-	1	2	

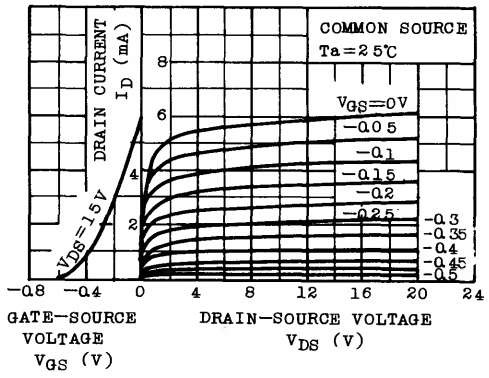
Note : I_{DSS}, $V_{GS(OFF)}$ and $|Y_{fs}|$ classification.

I_{DSS}(mA)→ R:1.2~3.6 O:3.0~9.0
$V_{GS(OFF)}$ (V)→R:-0.25~-0.75 O:-0.4~-1.2
Y_{fs} (ms)→R: 7~21 O: 10~34

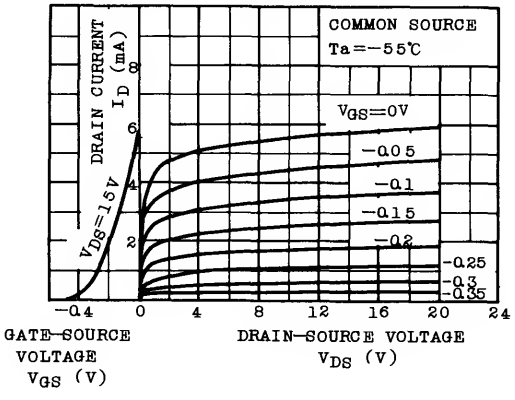
STATIC CHARACTERISTICS



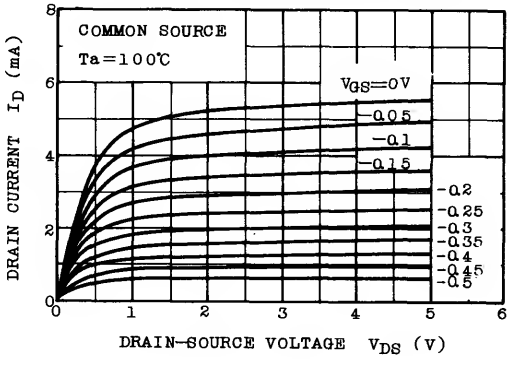
STATIC CHARACTERISTICS



STATIC CHARACTERISTICS



I_D – V_{DS} (LOW VOLTAGE REGION)



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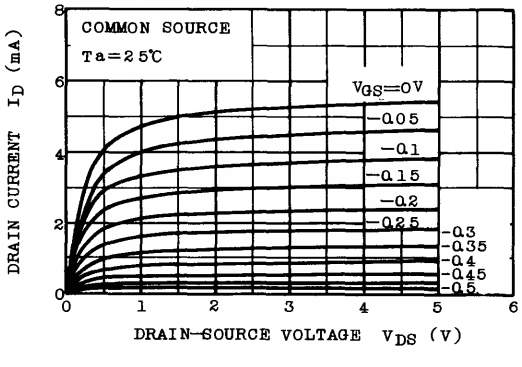

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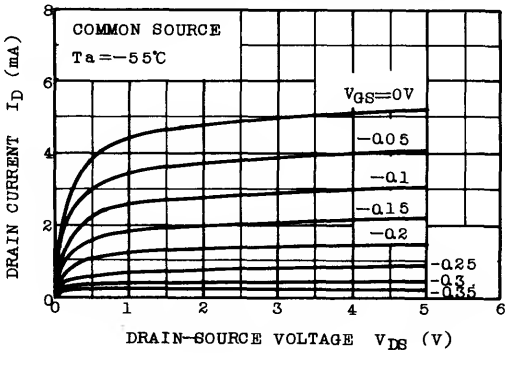
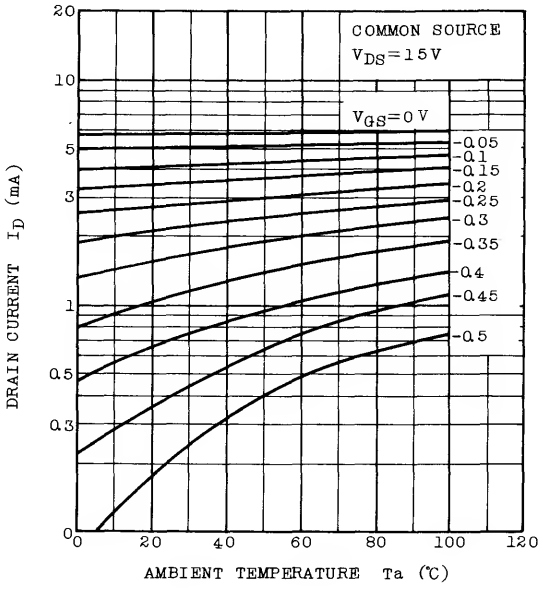
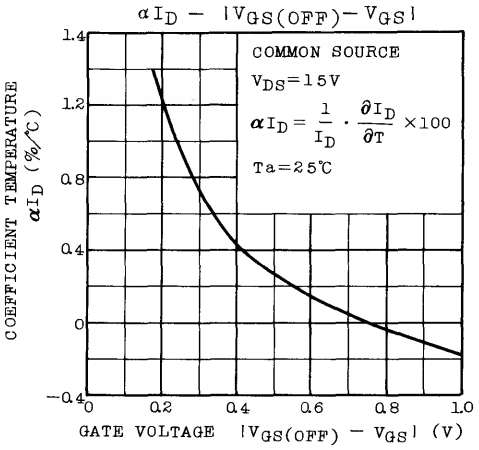


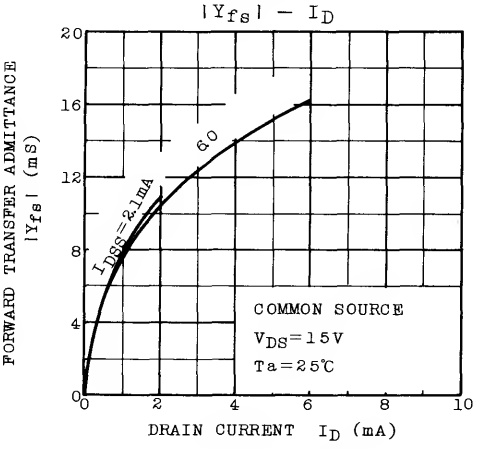
I_D – Ta



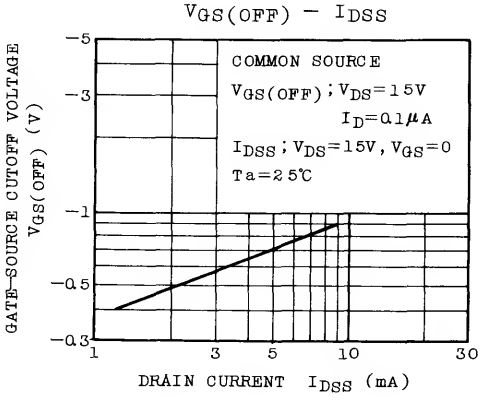
αI_D – $|V_{GS(OFF)} - V_{GS}|$



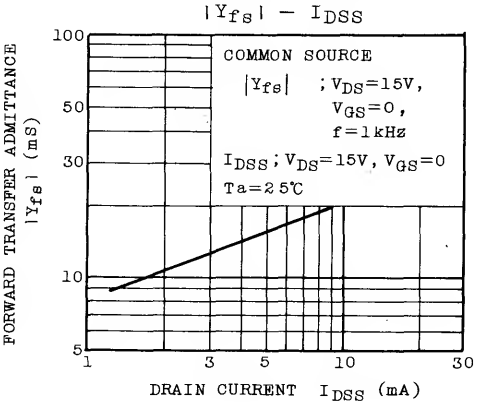
$|Y_{fs}|$ – I_D



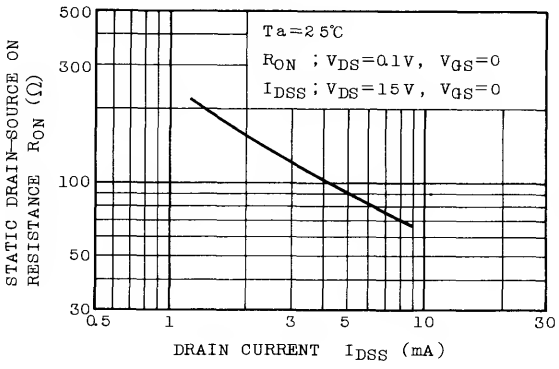
$V_{GS(OFF)}$ – I_{DSS}



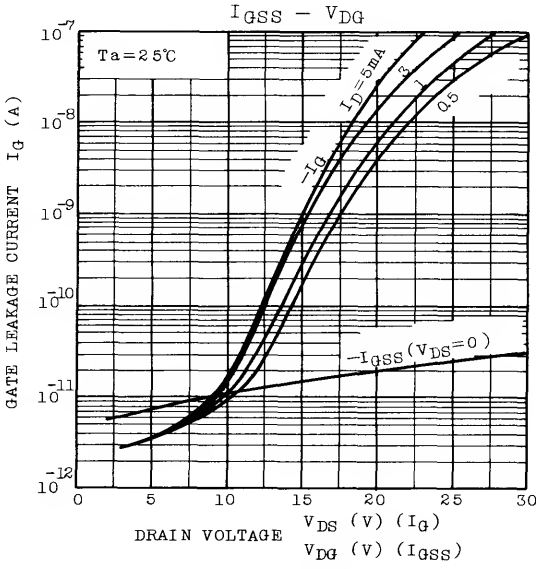
$|Y_{fs}|$ – I_{DSS}



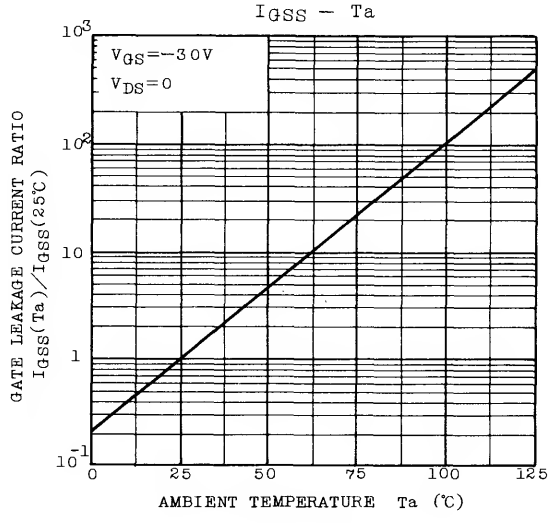
R_{ON} – I_{DSS}



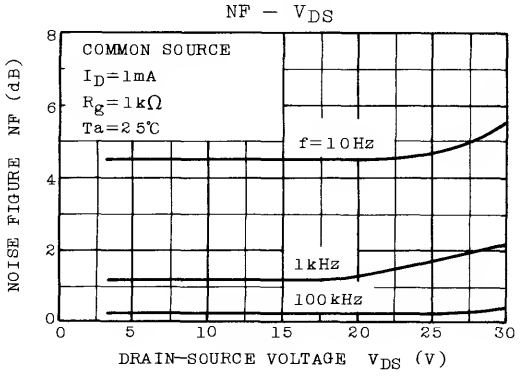
I_{GSS} – V_{DG}



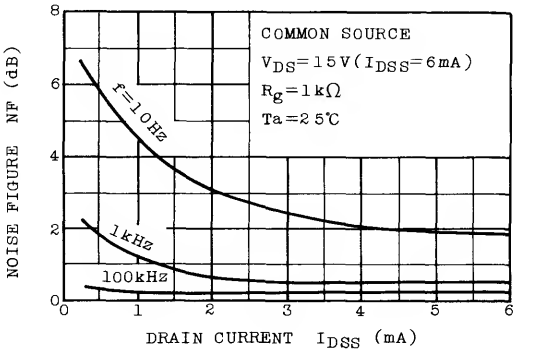
I_{GSS} – Ta



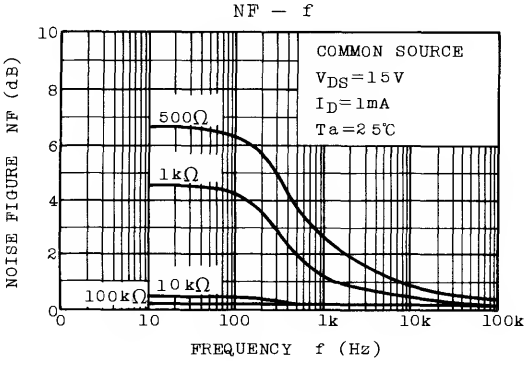
NF – V_{DS}



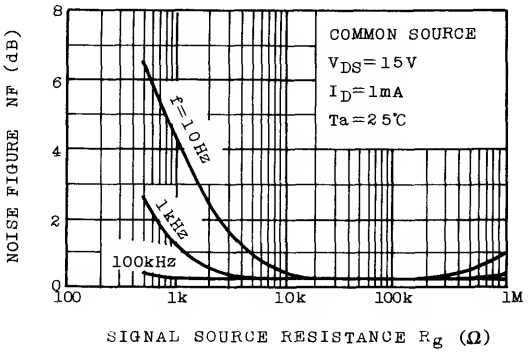
NF – I_D



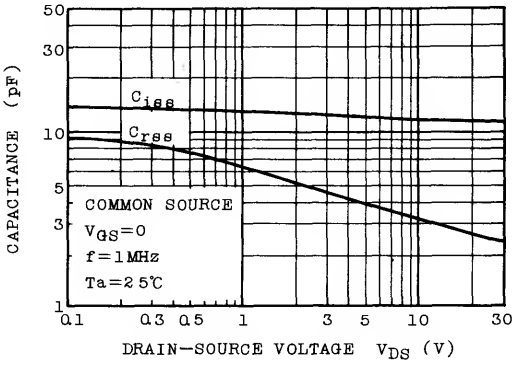
NF – f



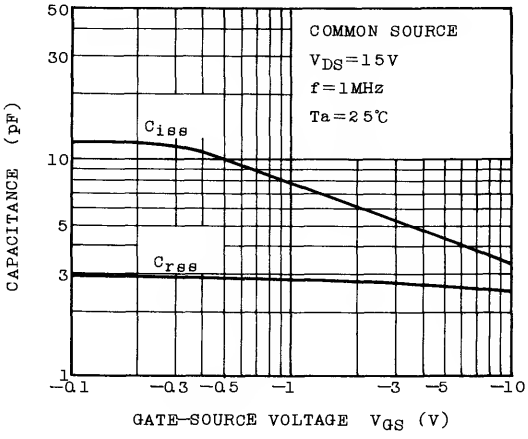
NF — R_g



C_{iss}, C_{rss} — V_{DS}



C_{iss}, C_{rss} — V_{GS}



P_D — Ta