Ordering number:EN1005B

N-Channel Junction Silicon FET

2SK315

FM Tuner Applications

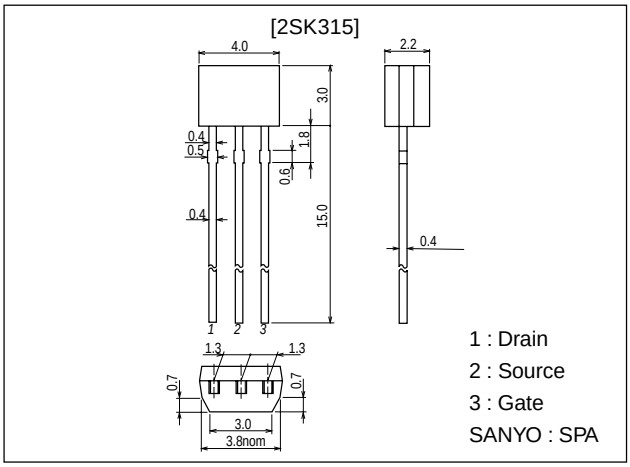
Features

- Ideal for FM tuners in radios, stereos, etc.
- Because it is compactly packaged, sets can be made compact.
- Small Crss (Crss=0.08pF typ).
- High y_{fs} (y_{fs}=12.0ms typ).

Package Dimensions

unit:mm

2040A



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Gate-to-Drain Voltage	V_{GDO}		–20	V
Gate Current	I_G		10	mA
Drain Current	I_D		20	mA
Allowable Power Dissipation	P_D		200	mW
Junction Temperature	Tj		125	˚C
Storage Temperature	Tstg		–55 to +125	˚C

Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDO}$	I_G=–10μA	–20			V
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=–0.5V, V_{DS}=0V			–10	nA
Zero-Gate Voltage Drain Current	I_{DSS}*	V_{DS}=5V, V_{GS}=0V	2.5*		24.0*	mA
Cutoff Voltage	$V_{GS(off)}$	V_{DS}=5V, I_D=10μA			–3.5	V
Forward Transfer Admittance	| yfs |1	V_{DS}=5V, V_{GS}=0V, f=1kHz	6.0	12.0		ms
	| yfs |2	V_{DS}=5V, V_{GS}=0V, f=100MHz	6.0	12.0		ms
Input Capacitance	Ciss	V_{DS}=5V, V_{GS}=0V, f=1MHz		8.0		pF
Output Capacitance	Coss	V_{DS}=5V, V_{GS}=0V, f=1MHz		6.5		pF
Reverse Transfer Capacitance	Crss	V_{DS}=5V, V_{GS}=0V, f=1MHz		0.08	0.3	pF

* : The 2SK315 is classified as follows by I_{DSS} (unit : mA) :

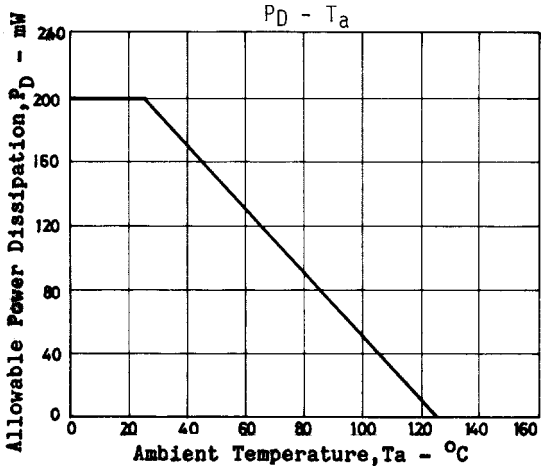
2.5	E	6.0	5.0	F	12.0	10.0	F	24.0

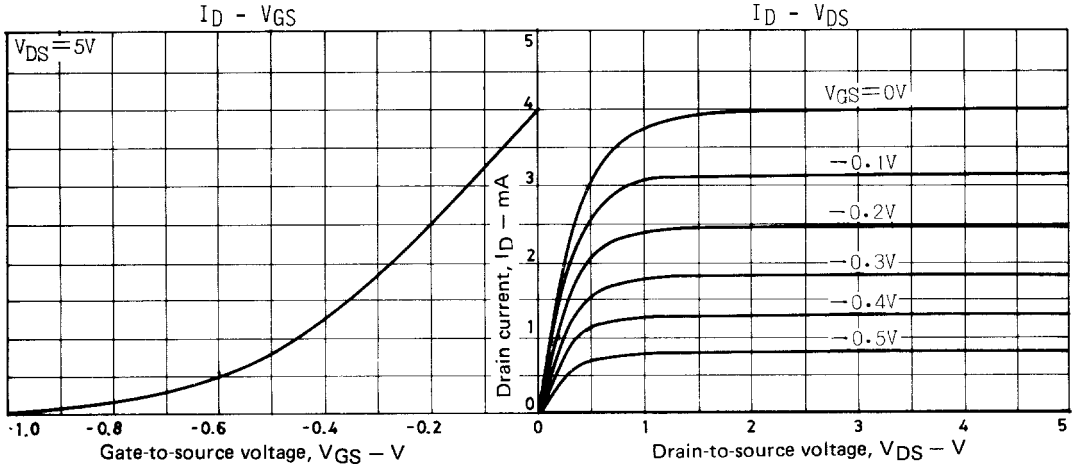
Continued on next page.

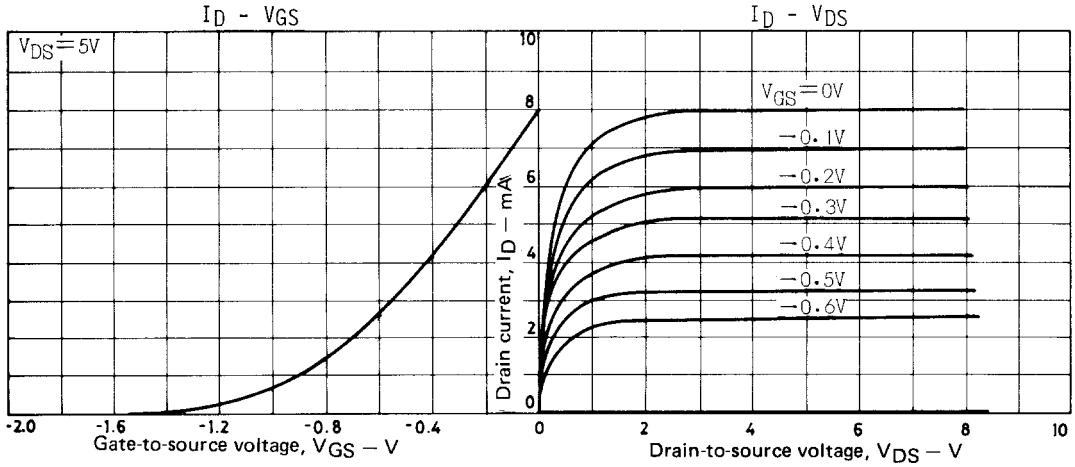
SANYO Electric Co.,Ltd. Semiconductor Company
TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

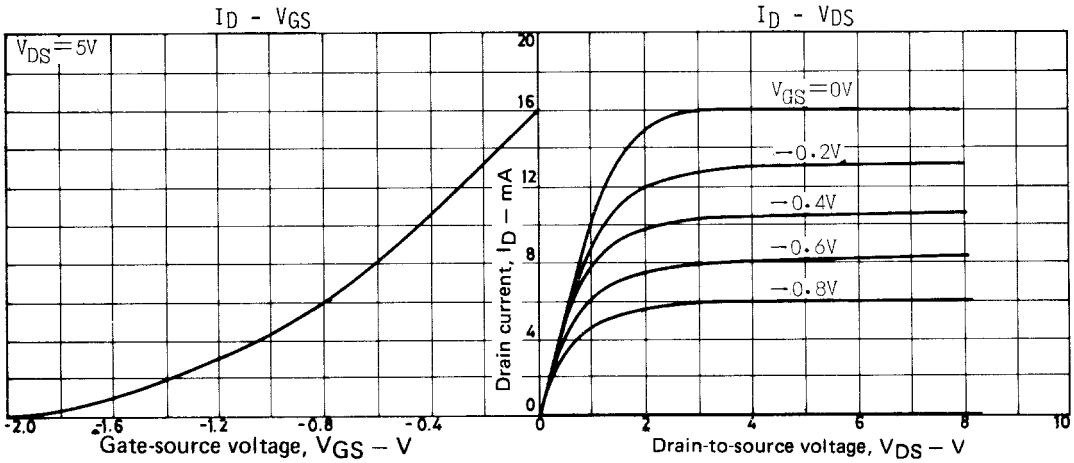
Continued from preceding page.

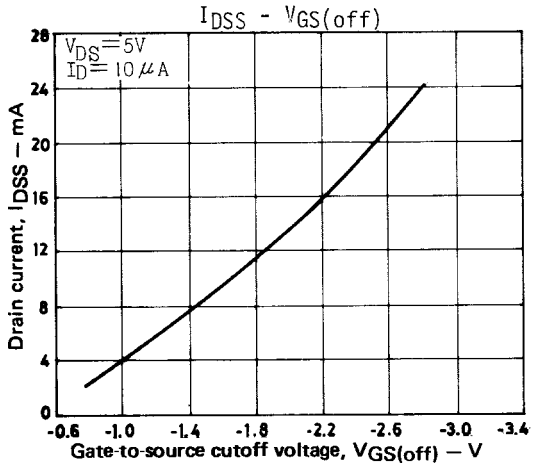
Parameter	Symbol	Conditions	Ratings			Unit
Power Gain	PG	V_{DS}=5V, V_{GS}=0V, f=100MHz, Refer to specified Test Circuit		23		dB
Noise Figure	NF	V_{DS}=5V, V_{GS}=0V, f=100MHz, See specified Test Circuit		2.2	4.0	dB

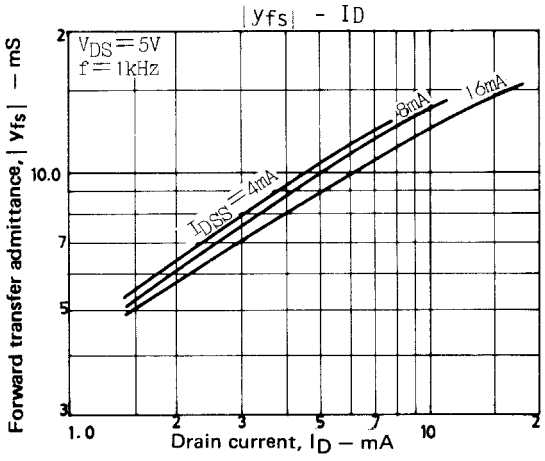


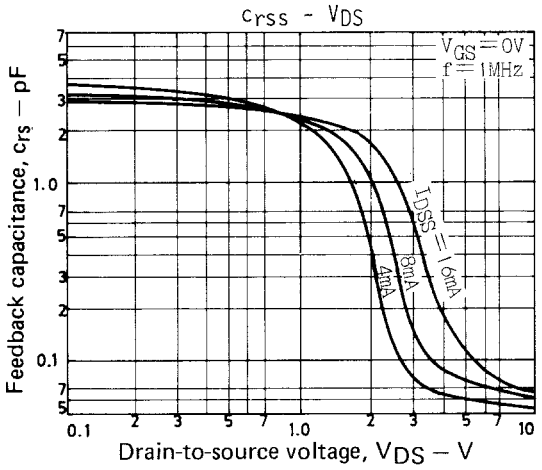


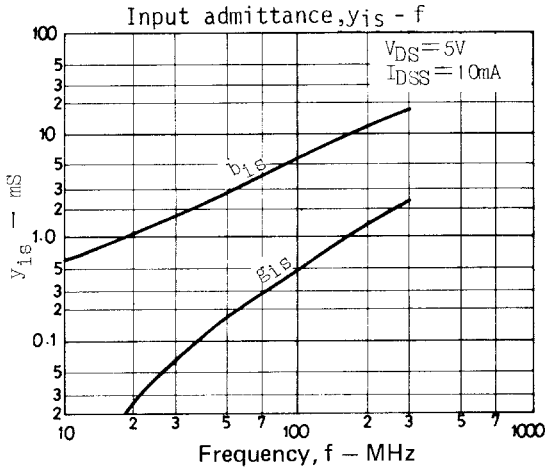


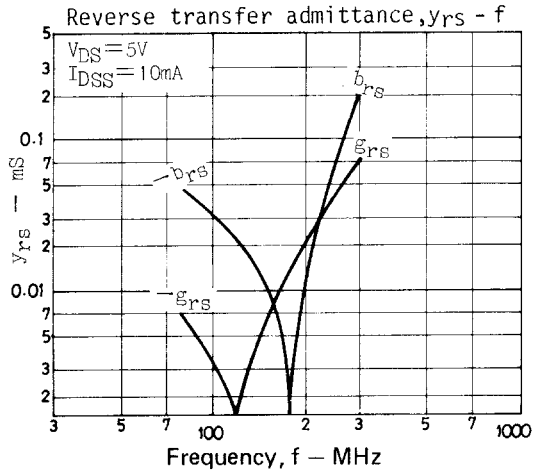

I_D - V_{GS}
V_{DS}=5V
Gate-source voltage, V_{GS} – V
I_D - V_{DS}
V_{GS}=0V
–0.2V
–0.4V
–0.6V
–0.8V
Drain current, I_D – mA
Drain-to-source voltage, V_{DS} – V

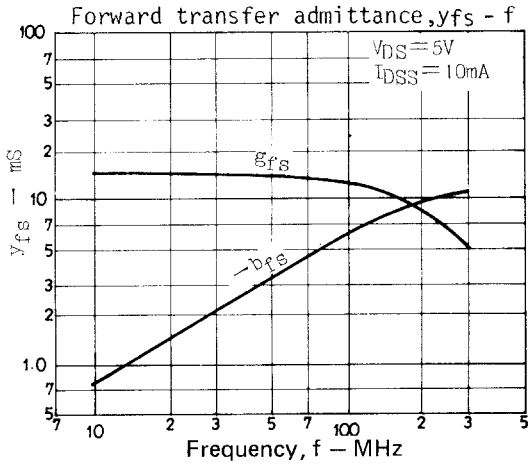

I_{DSS} - $V_{GS(off)}$
V_{DS}=5V
I_D=10μA
Drain current, I_{DSS} – mA
Gate-to-source cutoff voltage, $V_{GS(off)}$ – V


|yfs| - ID
V_{DS}=5V
f=1kHz
I_{DSS}=4mA
8mA
16mA
Forward transfer admittance, |yfs| – mS
Drain current, I_D – mA

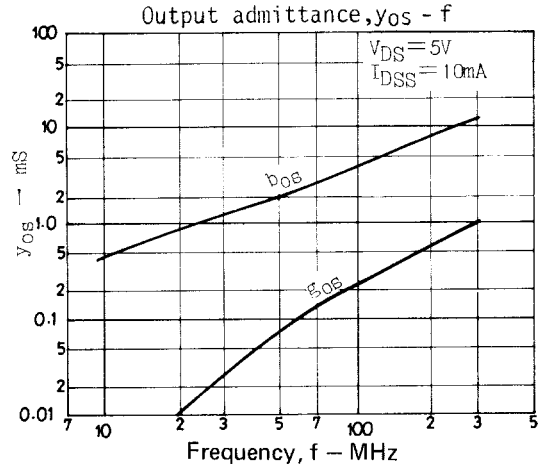

C_{rss} - V_{DS}
V_{GS}=0V
f=1MHz
I_{DSS}=16mA
8mA
4mA
Feedback capacitance, C_{rs} – pF
Drain-to-source voltage, V_{DS} – V


Input admittance, y_{is} - f
V_{DS}=5V
I_{DSS}=10mA
b_{is}
g_{is}
y_{is} – mS
Frequency, f – MHz

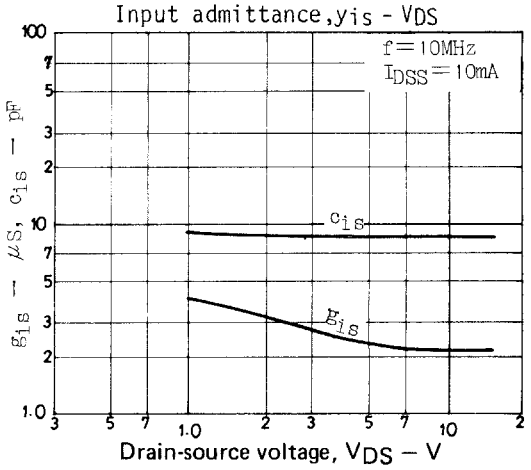

Reverse transfer admittance, y_{rs} - f
V_{DS}=5V
I_{DSS}=10mA
b_{rs}
g_{rs}
$-b_{rs}$
$-g_{rs}$
y_{rs} – mS
Frequency, f – MHz


Forward transfer admittance, y_{fs} - f
V_{DS}=5V
I_{DSS}=10mA
g_{fs}
$-b_{fs}$
y_{fs} – mS
Frequency, f – MHz

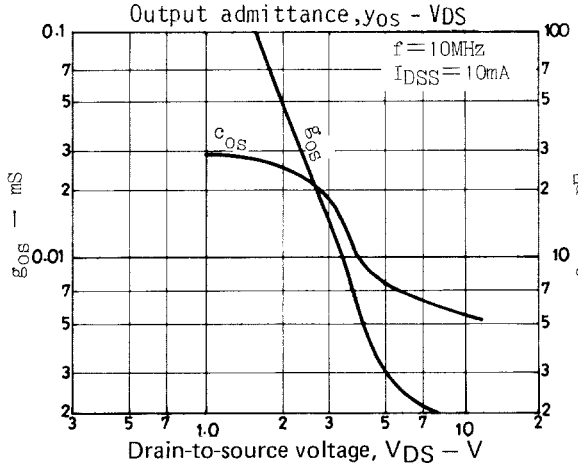
Output admittance, y_{os} - f



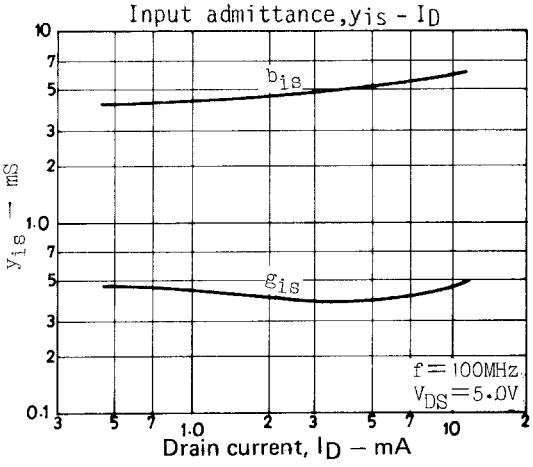
Input admittance, y_{is} - V_{DS}



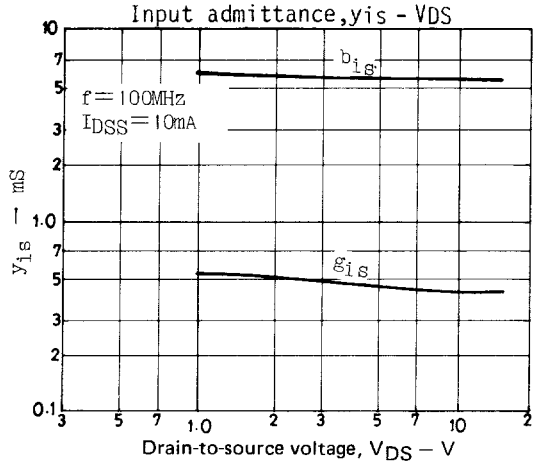
Output admittance, y_{os} - V_{DS}



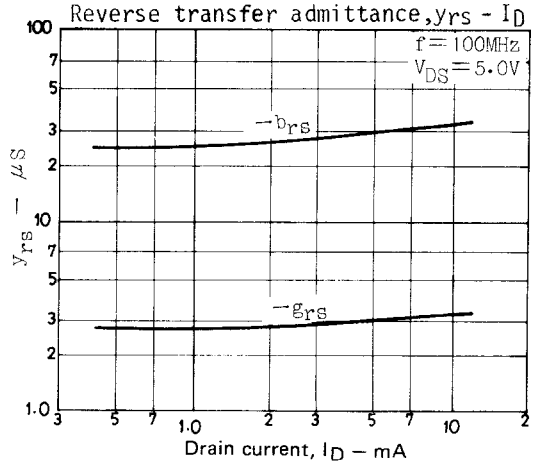
Input admittance, y_{is} - I_D



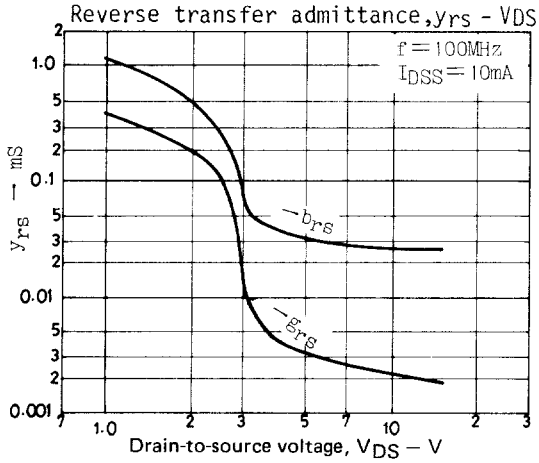
Input admittance, y_{is} - V_{DS}



Reverse transfer admittance, y_{rs} - I_D



Reverse transfer admittance, y_{rs} - V_{DS}



Forward transfer admittance, y_{fs} - I_D