

To all our customers

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Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

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Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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# 2SK360 Series

## Silicon N-Channel MOS FET

### Application

VHF amplifier

### Features

- Capable of high density mount
- High gain, low noise
- Capable of IF amplifier

**Table 1 Ordering Information**

Type No.	Package
2SK359	TO-92
2SK360	MPAK
2SK439	SPAK

**Table 2 Absolute Maximum Ratings (Ta = 25°C)**

Item	Symbol	Ratings	Unit	
Drain to source voltage	V <sub>DSX</sub> *	20	V	
Gate to source voltage	V <sub>GSS</sub>	±5	V	
Drain current	I <sub>D</sub>	30	mA	
Gate current	I <sub>G</sub>	±1	mA	
Channel dissipation	2SK359	Pch	400	mW
	2SK360		150	
	2SK439		300	
Channel temperature	T <sub>ch</sub>	150	°C	
Storage temperature	T <sub>stg</sub>	−55 to +150	°C	

\*: V<sub>GS</sub> = −4 V

**Table 3 Electrical Characteristics (Ta = 25°C)**

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V <sub>(BR)DSX</sub>	20	—	—	V	I <sub>D</sub> = 100 μA, V <sub>GS</sub> = −4 V
Gate leakage current	I <sub>GSS</sub>	—	—	±20	nA	V <sub>GS</sub> = ±5 V, V <sub>DS</sub> = 0
Drain current	I <sub>DSS</sub>	4	—	12	mA	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0
Gate to source cutoff voltage	V <sub>GS(off)</sub>	0	—	−2.0	V	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 10 μA
Forward transfer admittance	y <sub>fsl</sub>	8	14	—	mS	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1 kHz

# 2SK360 Series

## Electrical Characteristics (Ta = 25°C) (cont)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Input capacitance	C <sub>iss</sub>	—	2.5	—	pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1 MHz
Output capacitance	2SK359	C <sub>oss</sub>	—	1.6	—	pF
	2SK360					f = 1 MHz
	2SK439			1.8		V <sub>DS</sub> = 5 V, V <sub>GS</sub> = 0, f = 1 MHz
Reverse transfer capacitance	C <sub>rss</sub>	—	0.03	—	pF	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0, f = 1 MHz
Power gain	PG	—	30	—	dB	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0,
Noise figure	NF	—	2.0	—	dB	f = 100 MHz

2SK360 representing the characteristics curves hereafter.

For the detail of characteristics of other parts, please consult our sales office near you.

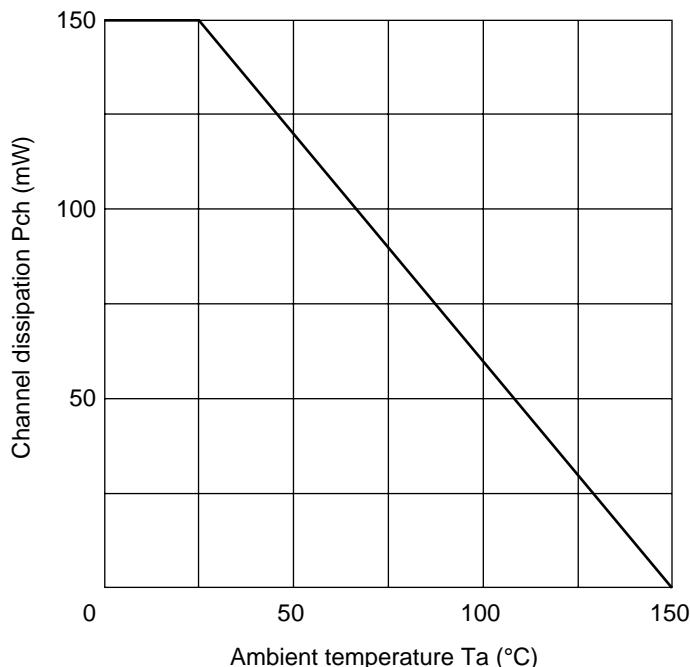


Figure 1 Maximum Channel Dissipation Curve

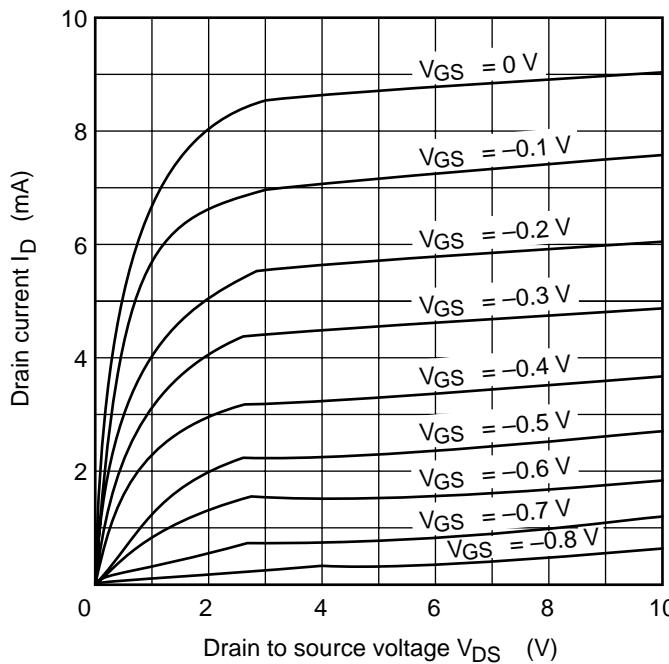


Figure 2 Typical Output Characteristics

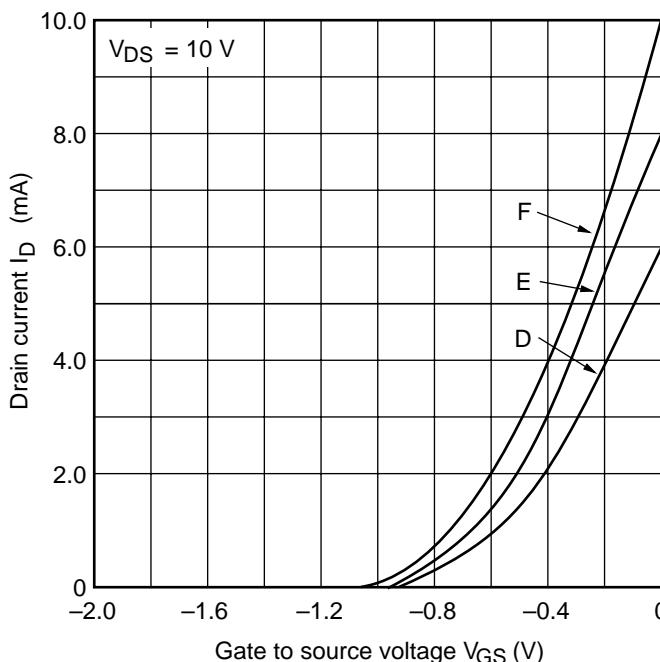
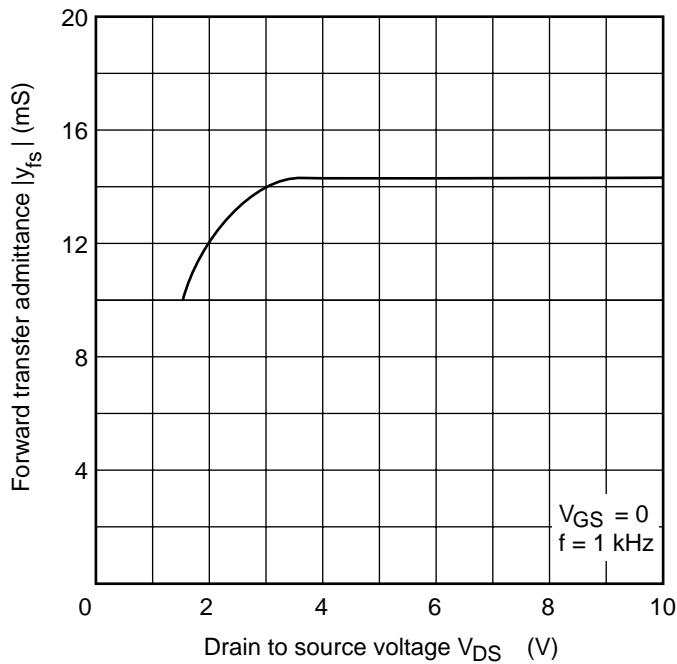
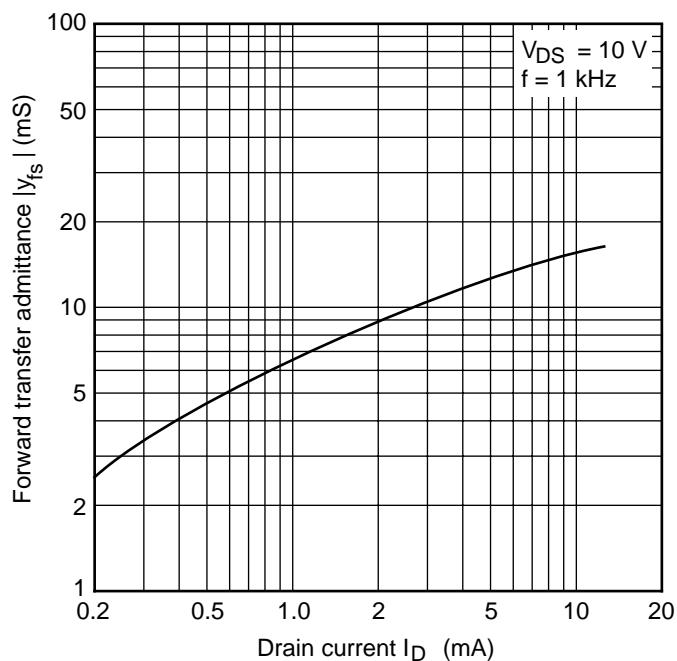


Figure 3 Typical Transfer Characteristics

**Figure 4 Forward Transfer Admittance vs. Drain to Source Voltage****Figure 5 Forward Transfer Admittance vs. Drain Current**

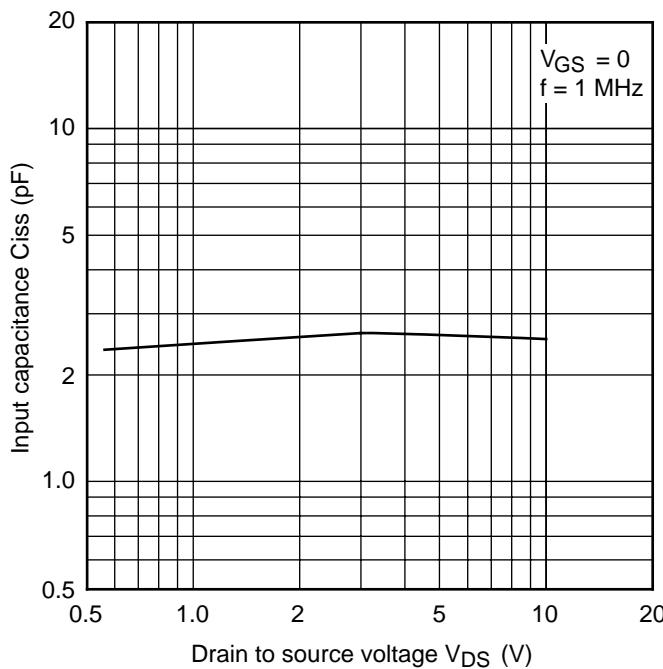


Figure 6 Input Capacitance vs. Drain to Source Voltage

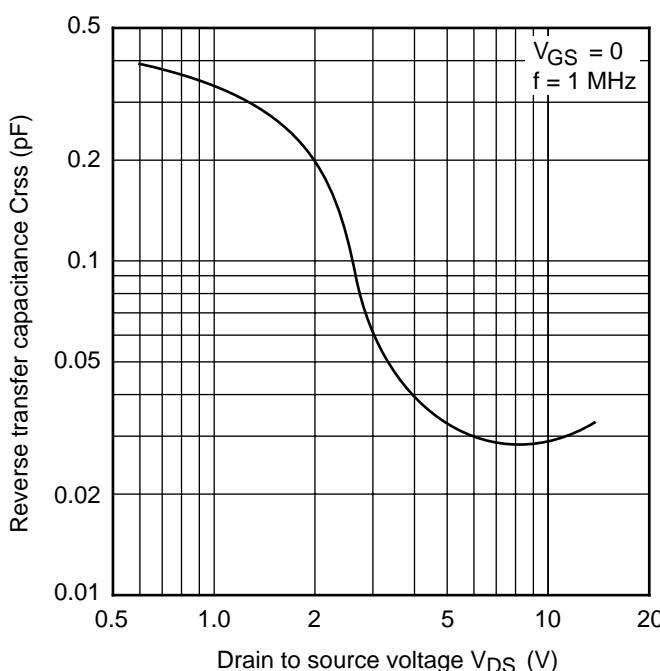


Figure 7 Reverse Transfer Capacitance vs. Drain to Source Voltage

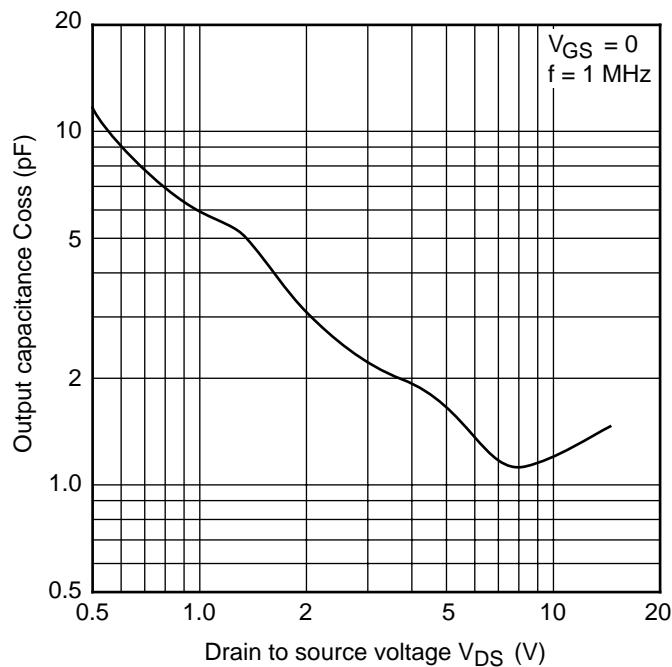


Figure 8 Output Capacitance vs. Drain to Source Voltage

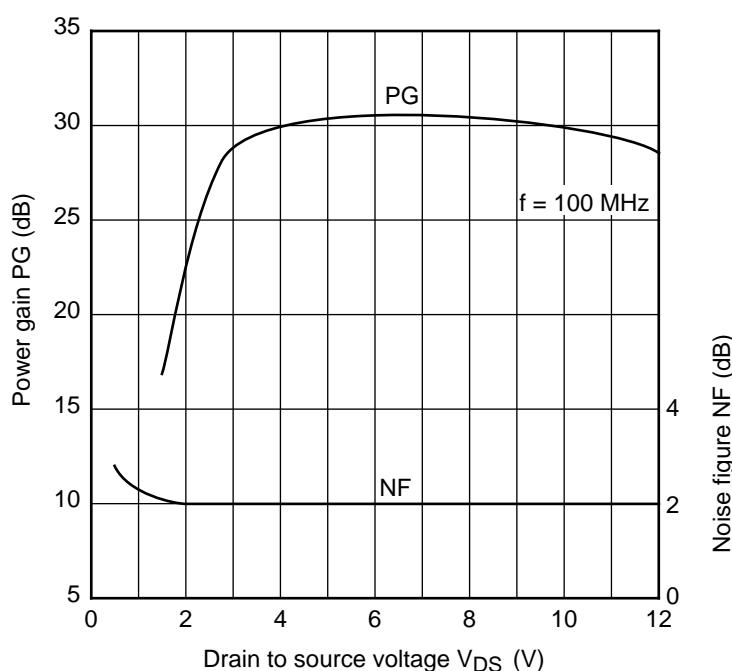


Figure 9 Power Gain, Noise Figure vs. Drain to Source Voltage