2SK359

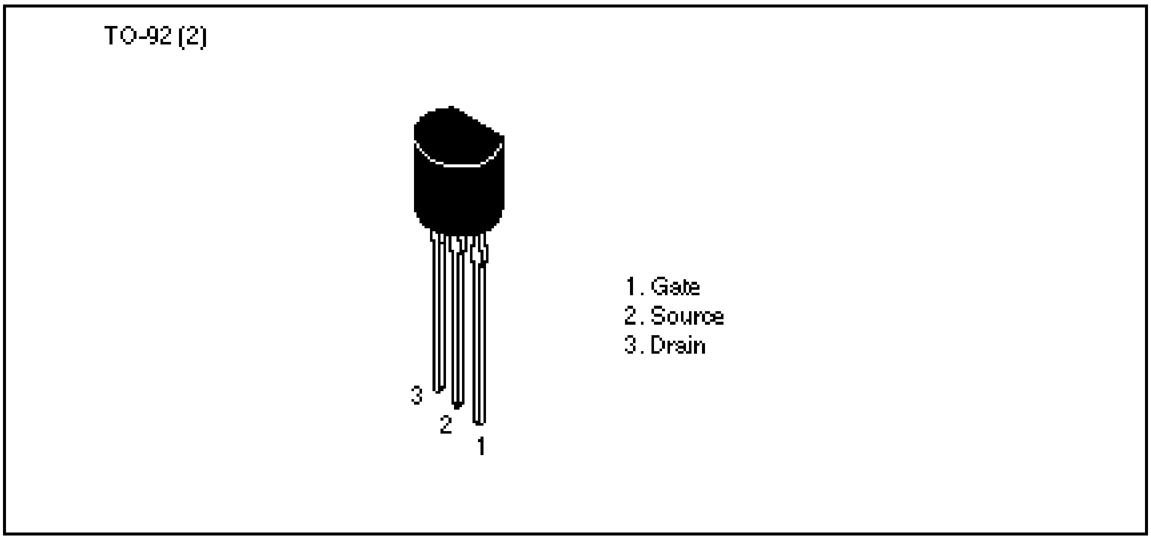
Silicon N-Channel MOS FET

HITACHI

Application

VHF amplifier

Outline



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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSX}[*1]	20	V
Gate to source voltage	V_{GSS}	±5	V
Drain current	I_D	30	mA
Gate current	I_G	±1	mA
Channel power dissipation	Pch	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. $V_{GS} = -4$ V

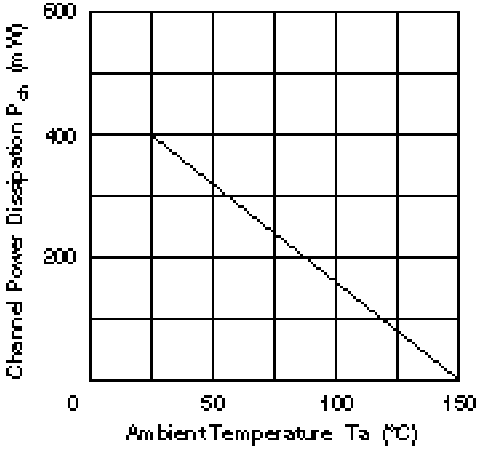
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	20	—	—	V	$I_D = 100$ µA, $V_{GS} = -4$ V
Gate cutoff current	I_{GSS}	—	—	±20	nA	$V_{GS} = \pm5$ V, $V_{DS} = 0$
Drain current	I_{DSS}[*1]	4	—	12	mA	$V_{DS} = 10$ V, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0	—	–2.0	V	$V_{DS} = 10$ V, $I_D = 10$ µA
Forward transfer admittance	$\lvert y_{fs} \rvert$	8	14	—	mS	$V_{DS} = 10$ V, $V_{GS} = 0$, f = 1 kHz
Input capacitance	Ciss	—	2.5	—	pF	$V_{DS} = 10$ V, $V_{GS} = 0$, f = 1 MHz
Output capacitance	Coss	—	1.6	—	pF	
Reverse transfer capacitance	Crss	—	0.03	—	pF	
Power gain	PG	—	30	—	dB	$V_{DS} = 10$ V, $V_{GS} = 0$, f = 100 MHz
Noise figure	NF	—	2	—	dB	

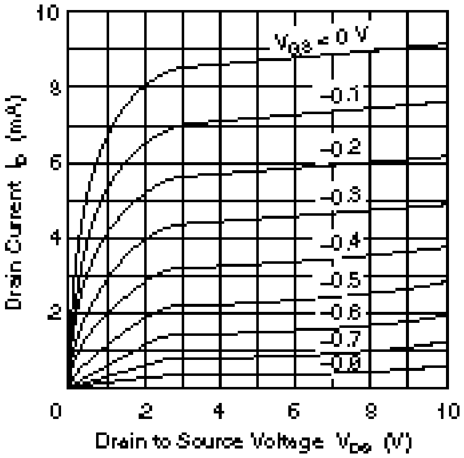
Note: 1. The 2SK359 is grouped by I_{DSS} as follows.

D	E	F
4 to 8	6 to 10	8 to 12

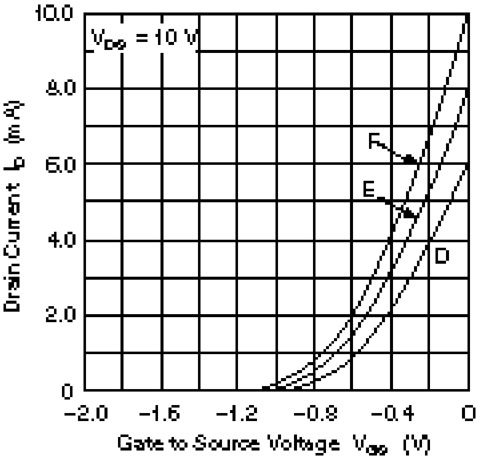
Maximum Channel Dissipation Curve



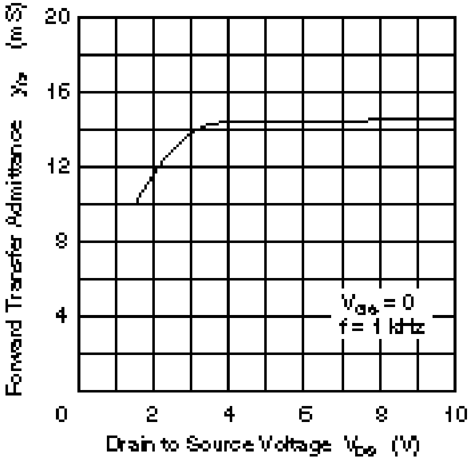
Typical Output Characteristics

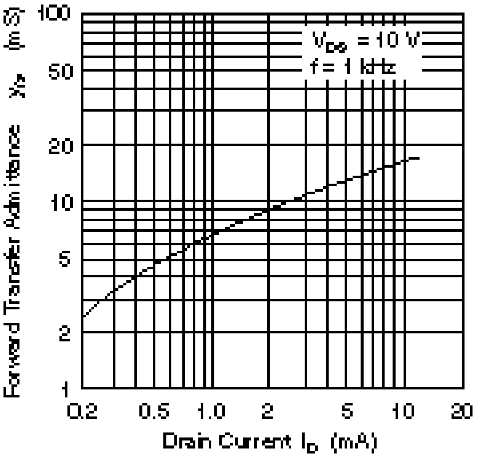


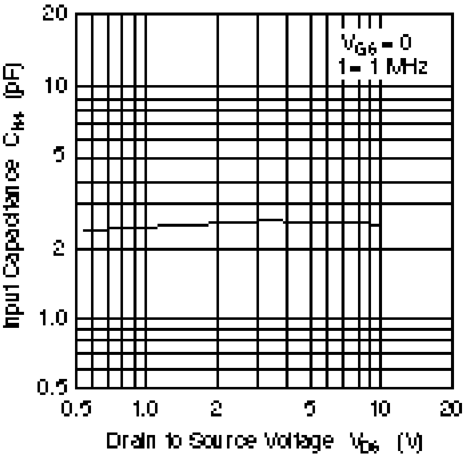
Typical Transfer Characteristics

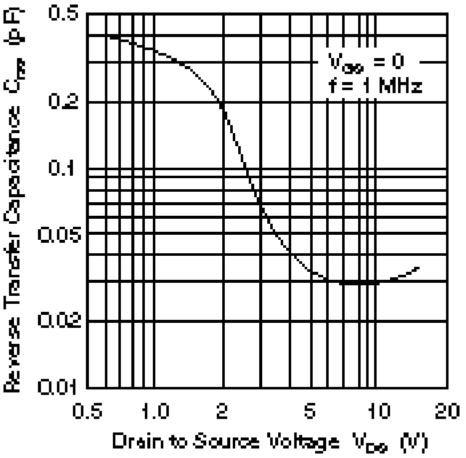


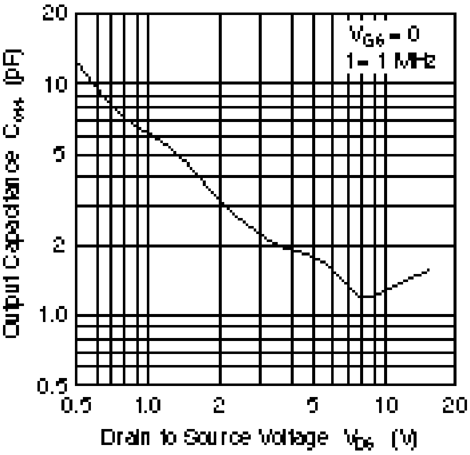
Forward Transfer Admittance vs.
Drain to Source Voltage

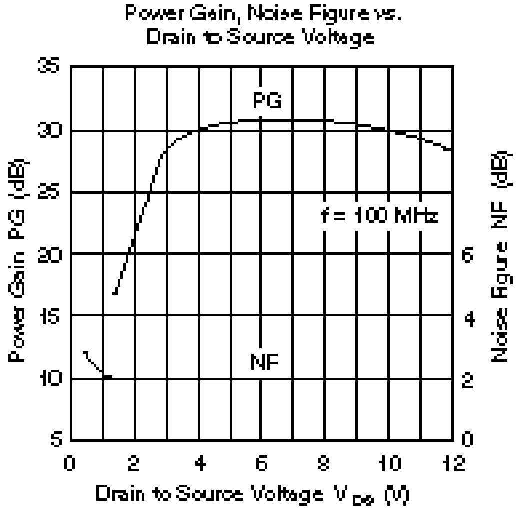



Forward Transfer Admittance vs.
Drain Current


Input Capacitance vs.
Drain to Source Voltage


Reverse Transfer Capacitance vs.
Drain to Source Voltage


Output Capacitance vs.
Drain to Source Voltage


Power Gain, Noise Figure vs.
Drain to Source Voltage
Power Gain PG (dB)
Noise Figure NF (dB)
35
30
25
20
15
10
5
6
4
2
0
PG
NF
f = 100 MHz
0
2
4
6
8
10
12
Drain to Source Voltage V_{DS} (V)

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