
3SK300

Silicon N Channel Dual Gate MOS FET
UHF / VHF RF Amplifier

HITACHI

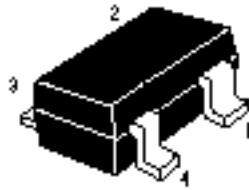
ADE-208-449
1st. Edition

Features

- Low noise figure
NF = 1.0 dB typ. at f = 200 MHz
- High gain
PG = 27.6 dB typ. at f = 200 MHz

Outline

MPAK-4



1. Source
2. Gate1
3. Gate2
4. Drain

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Absolute Maximum Ratings (Ta = 25°C)

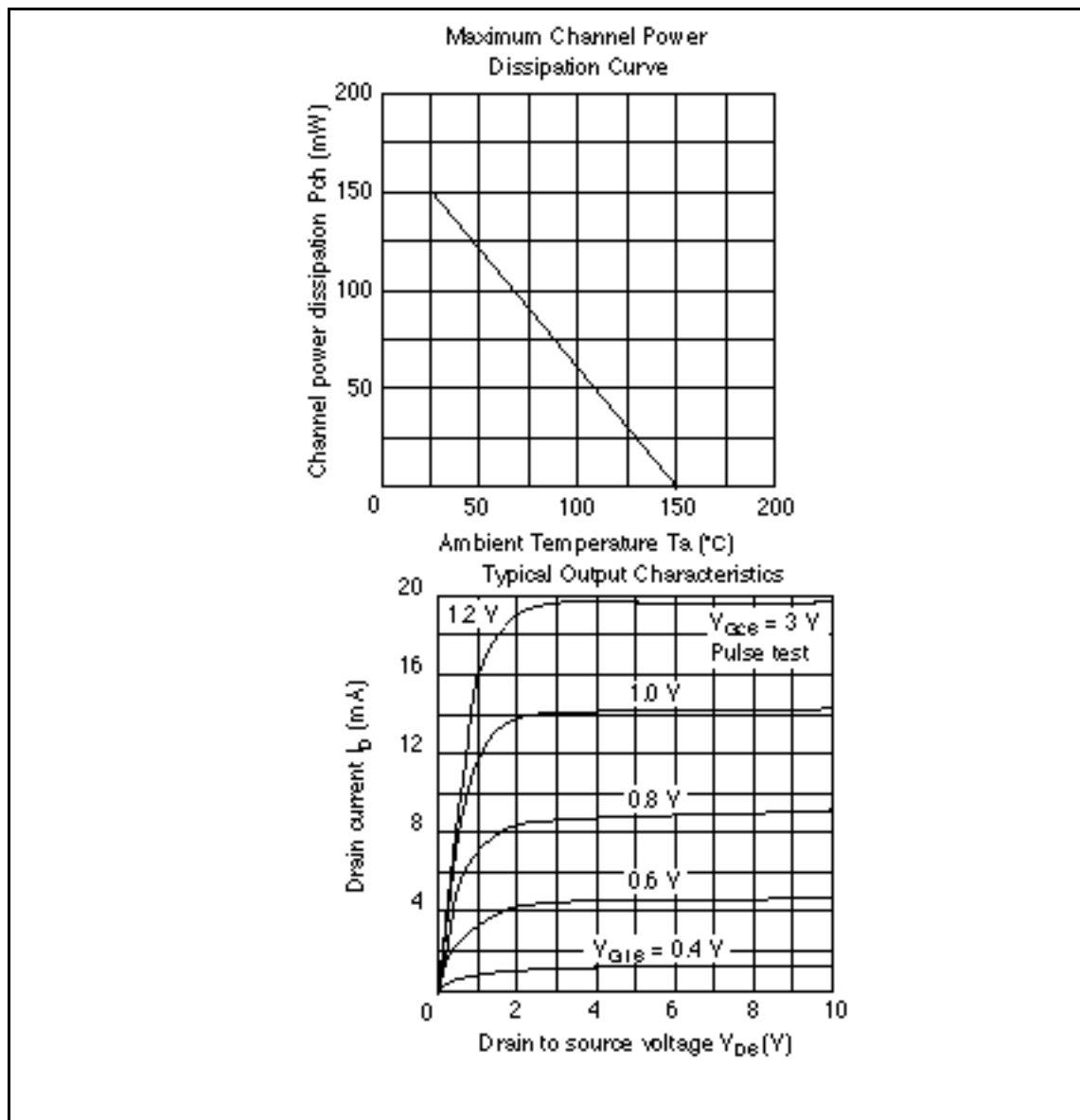
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS}	14	V
Gate 1 to source voltage	V_{G1S}	± 8	V
Gate 2 to source voltage	V_{G2S}	± 8	V
Drain current	I_D	25	mA
Channel power dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Electrical Characteristics (Ta = 25°C)

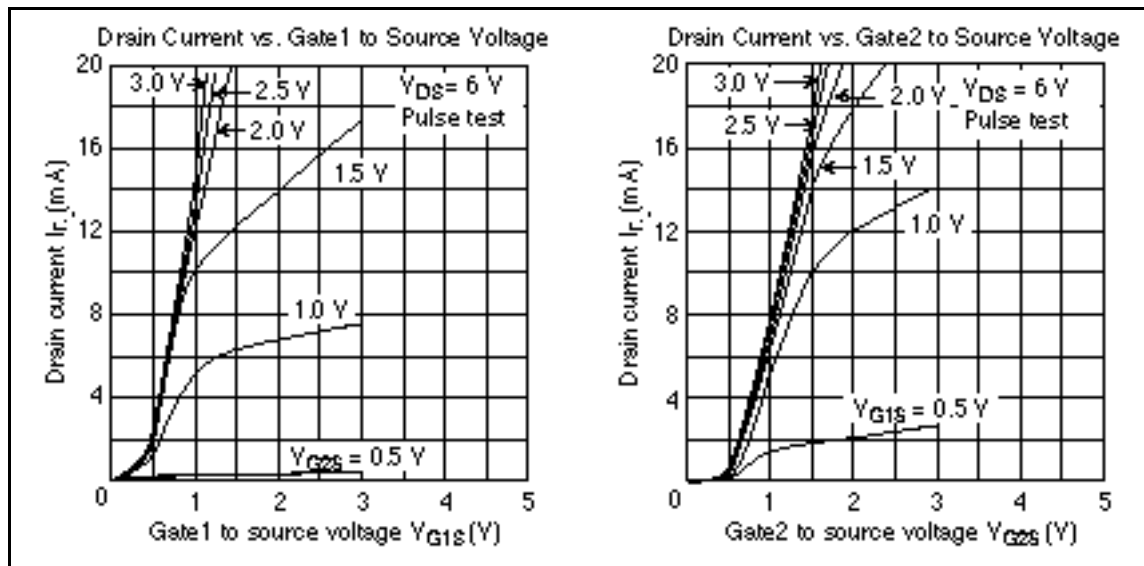
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	14	—	—	V	$I_D = 200 \mu A$, $V_{G1S} = -3 V$, $V_{G2S} = -3 V$
Gate 1 to source breakdown voltage	$V_{(BR)G1SS}$	± 8	—	—	V	$I_{G1} = \pm 10 \mu A$, $V_{DS} = V_{G2S} = 0$
Gate 2 to source breakdown voltage	$V_{(BR)G2SS}$	± 8	—	—	V	$I_{G2} = \pm 10 \mu A$, $V_{DS} = V_{G1S} = 0$
Gate 1 cutoff current	I_{G1SS}	—	—	± 100	nA	$V_{G1S} = \pm 6 V$, $V_{DS} = V_{G2S} = 0$
Gate 2 cutoff current	I_{G2SS}	—	—	± 100	nA	$V_{G2S} = \pm 6 V$, $V_{DS} = V_{G1S} = 0$
Drain current	$I_{DS(op)}$	4	8	14	mA	$V_{DS} = 6 V$, $V_{G1S} = 0.75 V$, $V_{G2S} = 3 V$
Gate 1 to source cutoff voltage	$V_{G1S(off)}$	0	+0.2	+1.0	V	$V_{DS} = 10 V$, $V_{G2S} = 3 V$, $I_D = 100 \mu A$
Gate 2 to source cutoff voltage	$V_{G2S(off)}$	0	+0.3	+1.0	V	$V_{DS} = 10 V$, $V_{G1S} = 3 V$, $I_D = 100 \mu A$
Forward transfer admittance	$ y_{fs} $	20	25	—	ms	$V_{DS} = 6 V$, $V_{G2S} = 3 V$, $I_D = 10 mA$, $f = 1 kHz$
Input capacitance	Ciss	2.4	3.1	3.5	pF	$V_{DS} = 6 V$,
Output capacitance	Coss	0.8	1.1	1.4	pF	$V_{G2S} = 3 V$, $I_D = 10 mA$
Reverse transfer capacitance	Crss	—	0.021	0.04	pF	$f = 1 MHz$
Power gain	PG	24	27.6	—	dB	$V_{DS} = 6 V$, $V_{G2S} = 3 V$,
Noise figure	NF	—	1.0	1.5	dB	$I_D = 10 mA$, $f = 200 MHz$
Power gain	PG	12	15.6	—	dB	$V_{DS} = 6 V$, $V_{G2S} = 3 V$,
Noise figure	NF	—	3.0	4.0	dB	$I_D = 10 mA$, $f = 900 MHz$
Noise figure	NF	—	2.7	3.5	dB	$V_{DS} = 6 V$, $V_{G2S} = 3 V$, $I_D = 10 mA$, $f = 60 MHz$

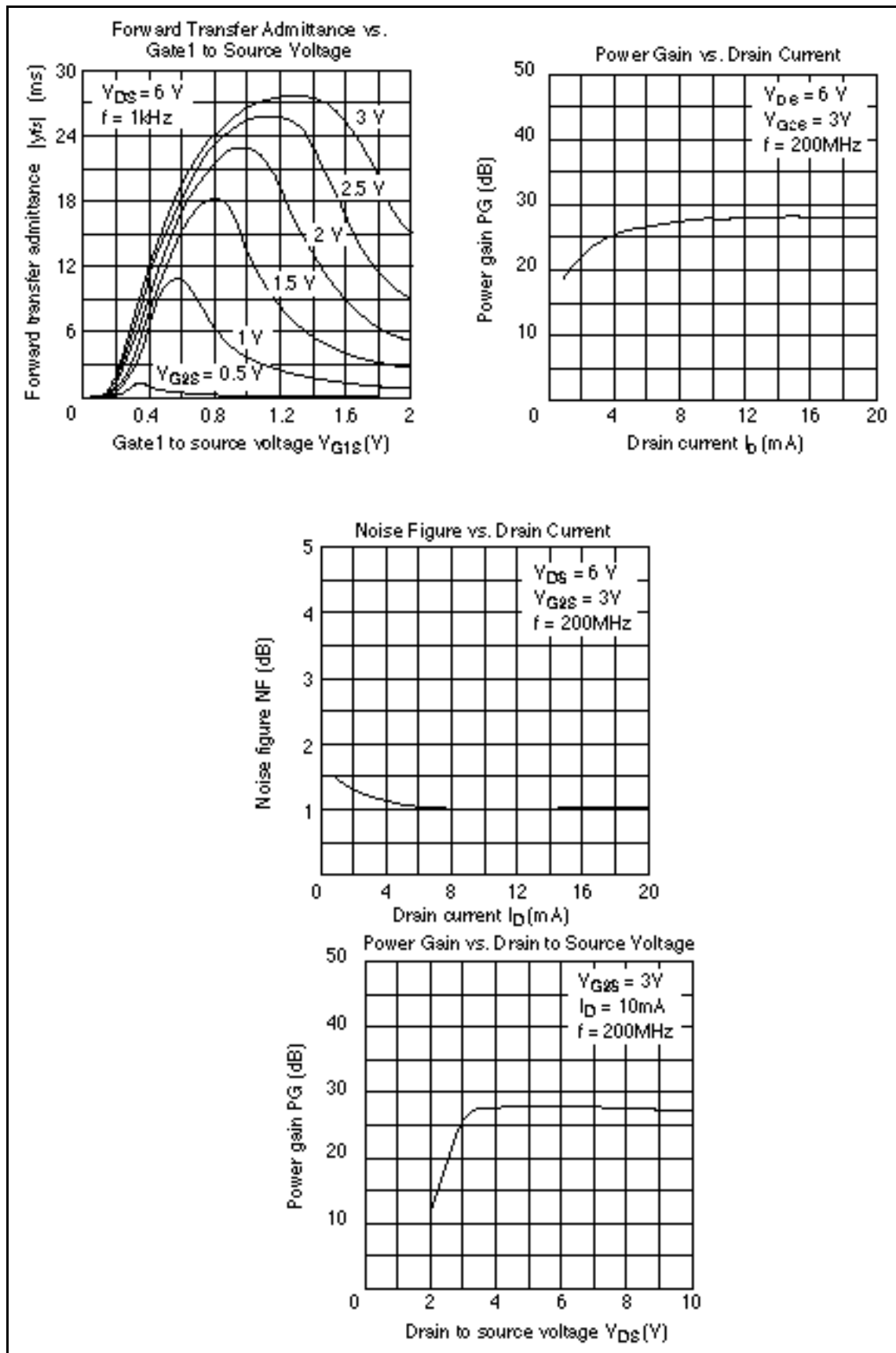
Note: Marking is "ZR—"

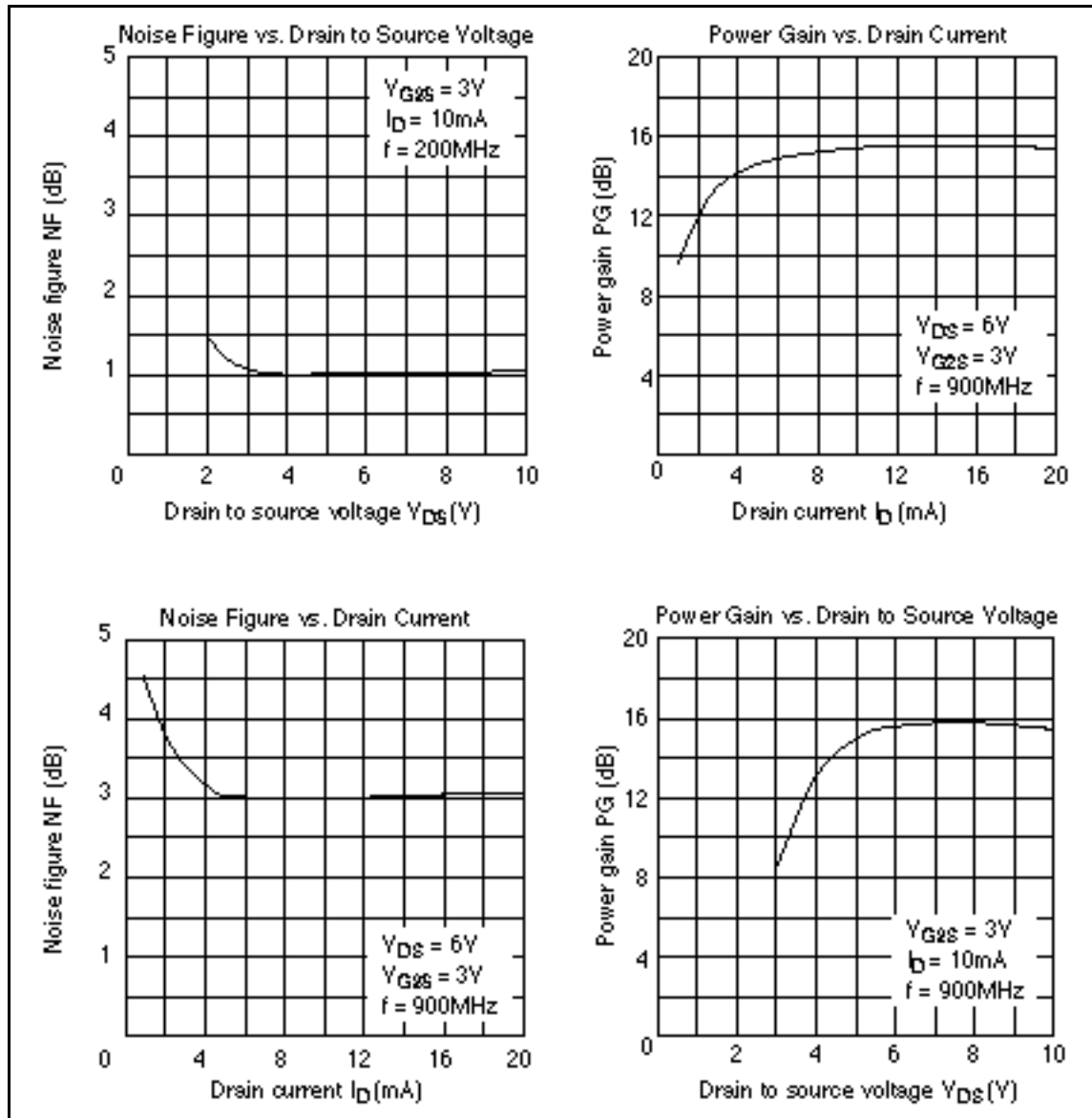
Main Characteristics

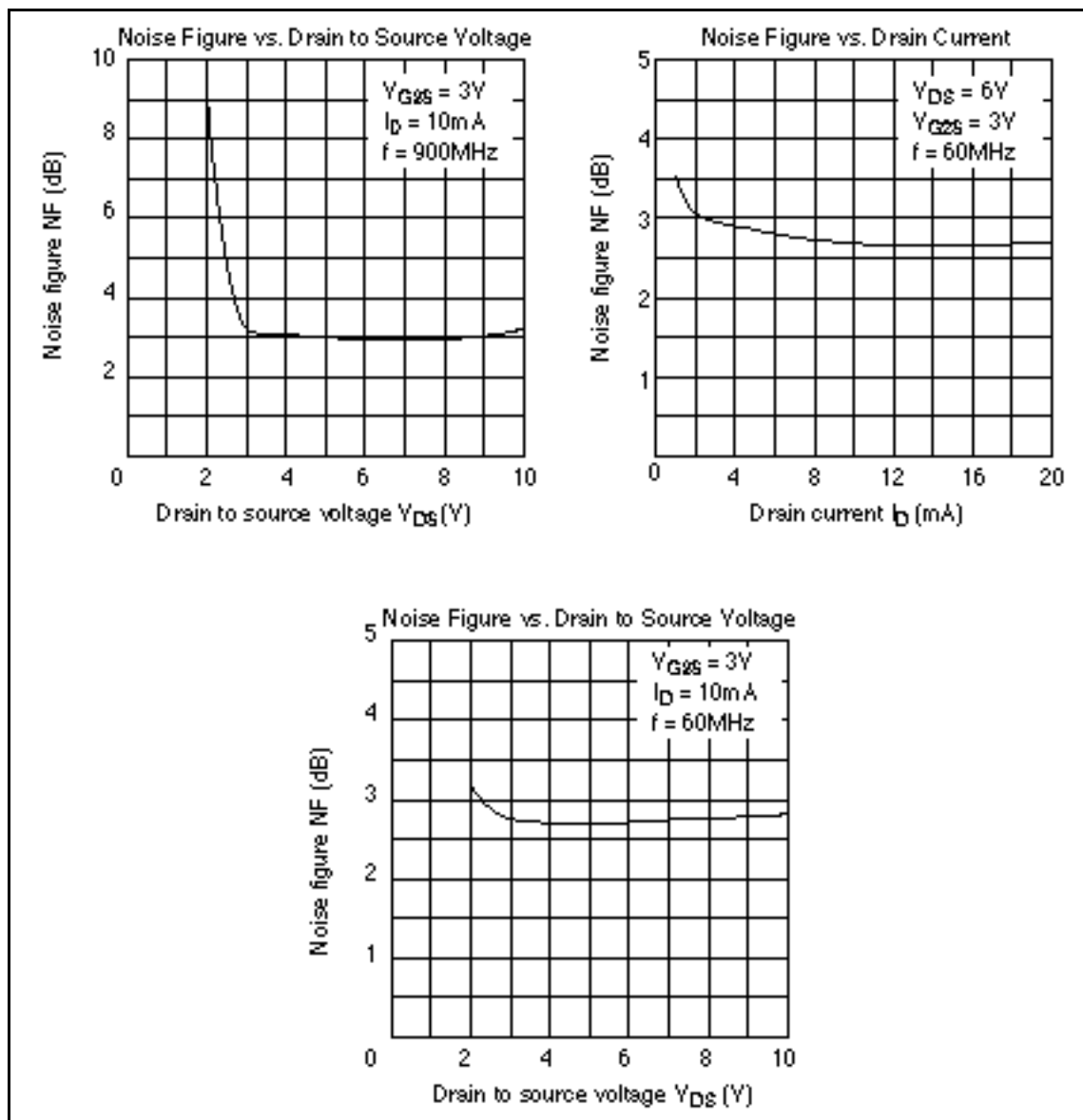


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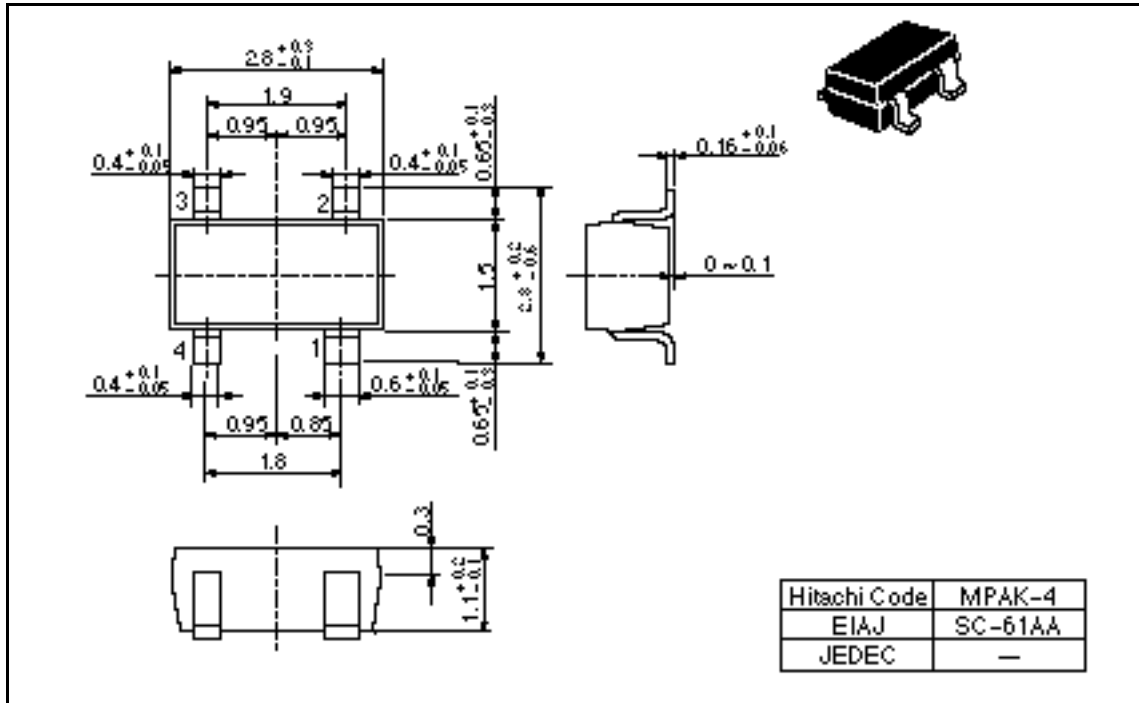




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Package Dimensions

Unit: mm



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