
3SK317

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

HITACHI

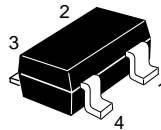
ADE-208-778 (Z)
1st. Edition
Mar. 1999

Features

- Low noise characteristics;
(NF = 1.0 dB typ. at f = 200 MHz)
- High power gain characteristics ;
(PG = 27.6 dB typ. at f = 200 MHz)

Outline

CMPAK-4



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

Note: Marking is "ZR-".

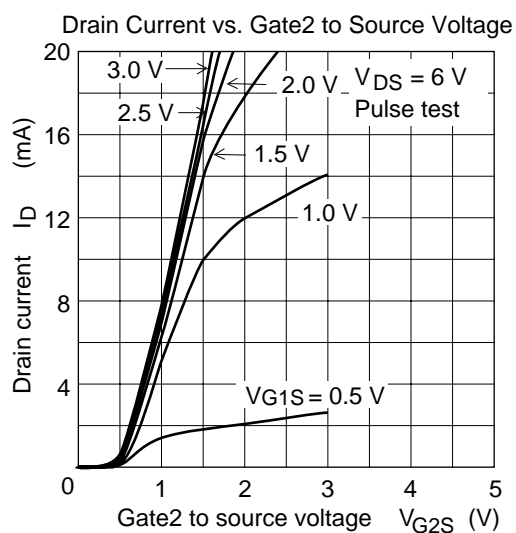
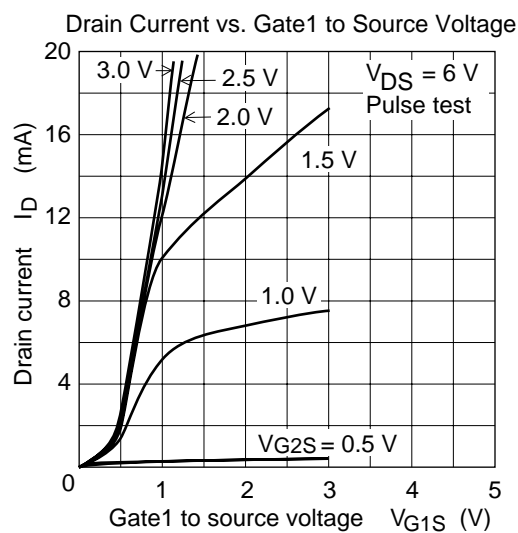
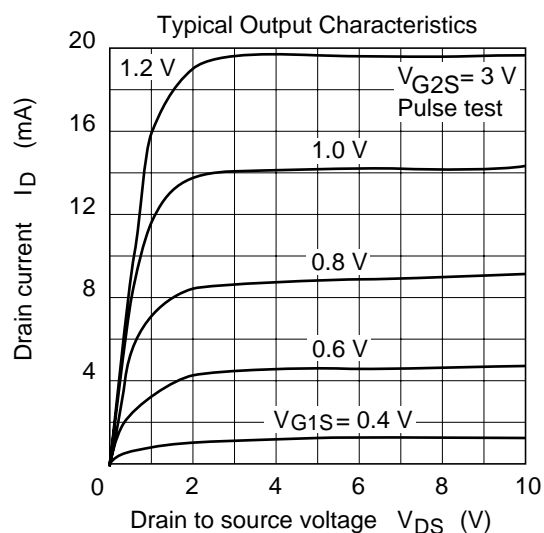
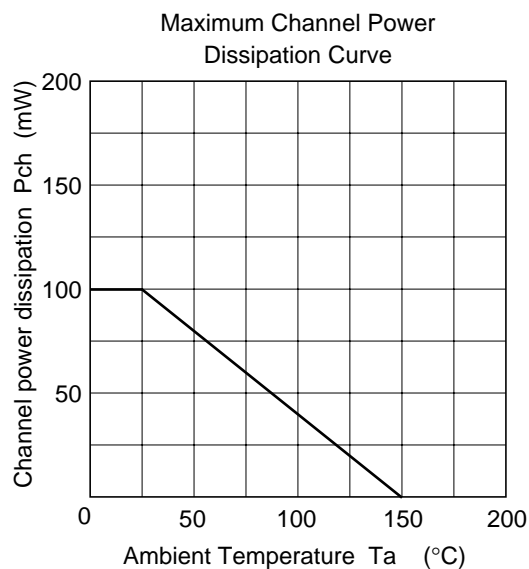
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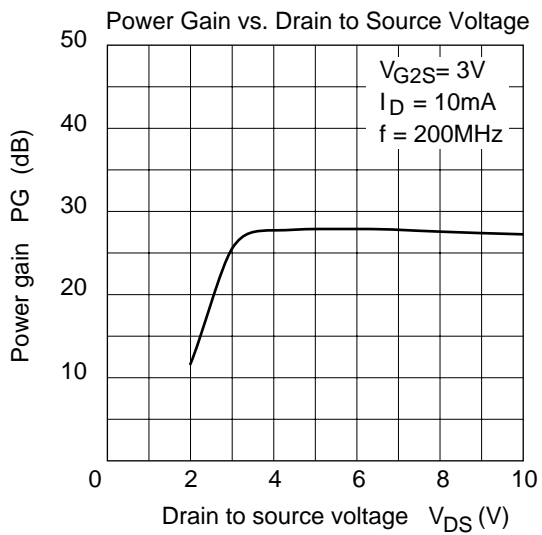
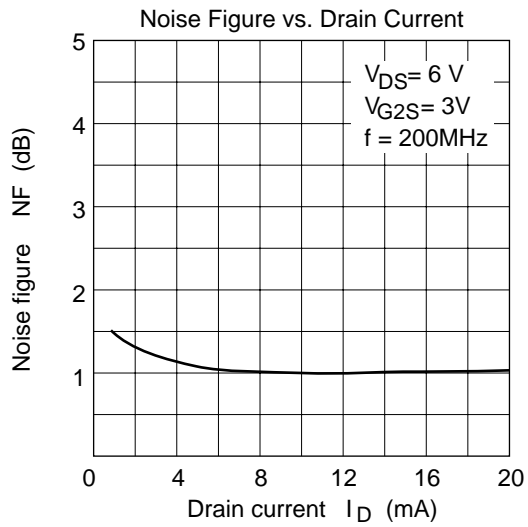
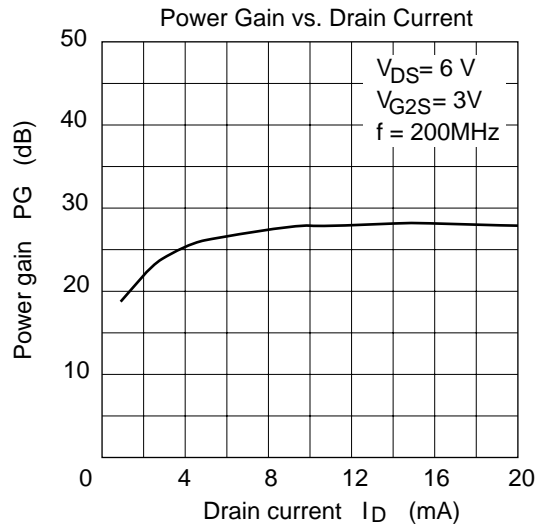
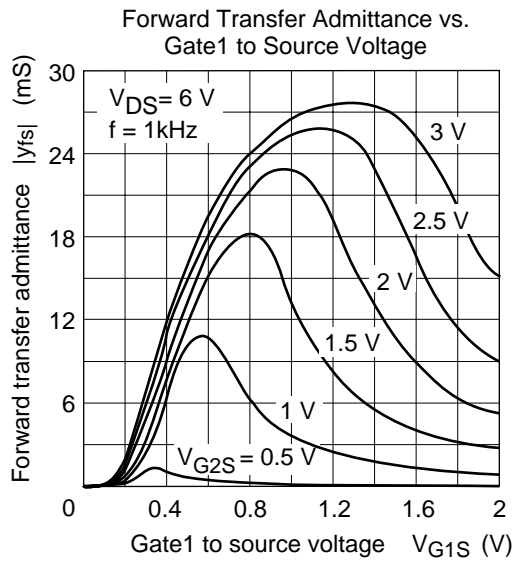
Absolute Maximum Ratings (Ta = 25°C)

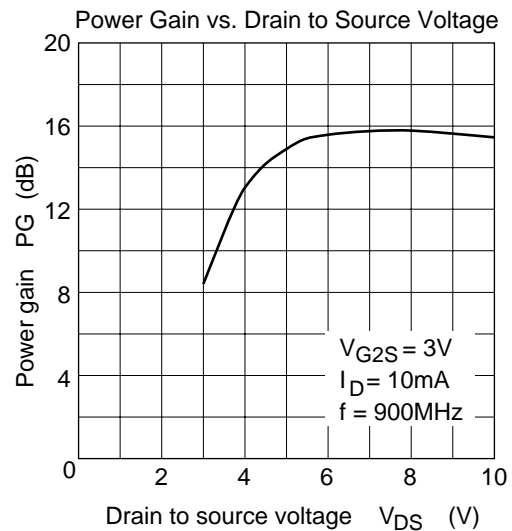
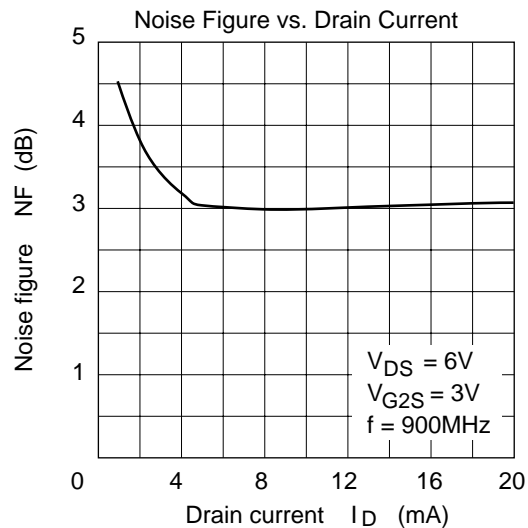
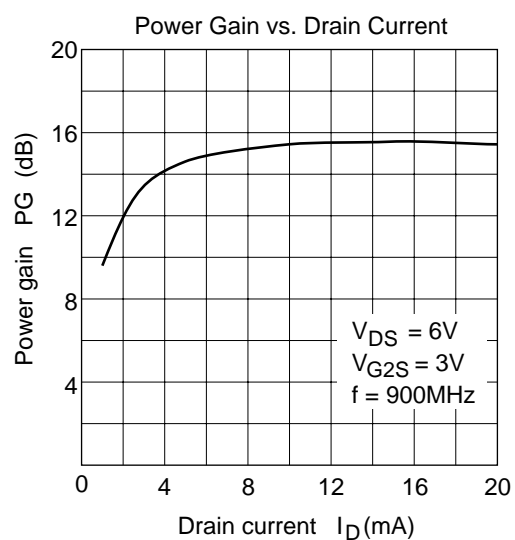
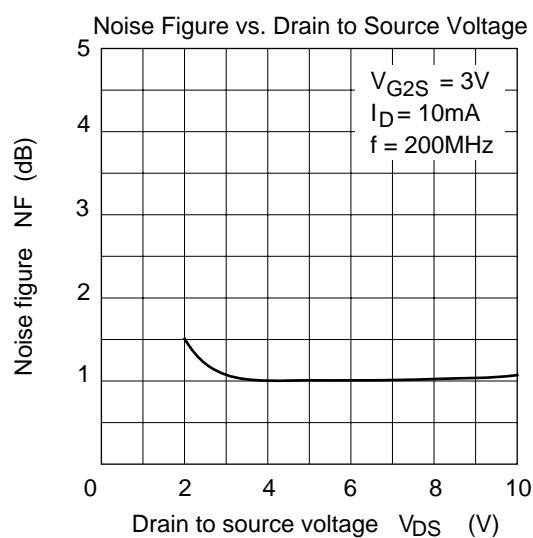
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS}	14	V
Gate1 to source voltage	V_{G1S}	± 8	V
Gate2 to source voltage	V_{G2S}	± 8	V
Drain current	I_D	25	mA
Channel power dissipation	Pch	100	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

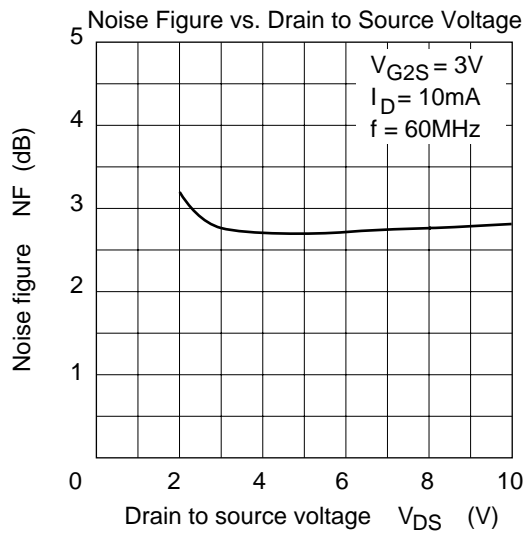
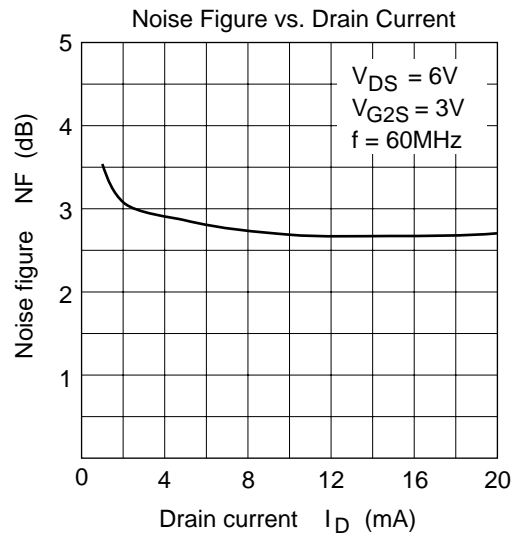
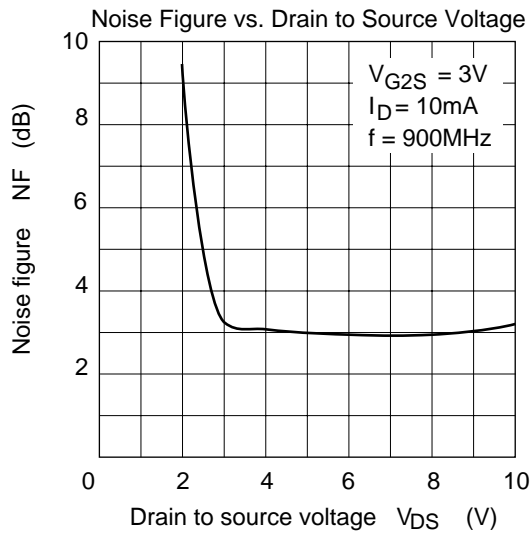
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	14	—	—	V	$I_D = 200 \mu A$ $V_{G1S} = V_{G2S} = -3 V$
Gate1 to source breakdown voltage	$V_{(BR)G1SS}$	± 8	—	—	V	$I_{G1} = \pm 10 \mu A$ $V_{G2S} = V_{DS} = 0$
Gate2 to source breakdown voltage	$V_{(BR)G2SS}$	± 8	—	—	V	$I_{G2} = \pm 10 \mu A$ $V_{G1S} = V_{DS} = 0$
Gate1 to source cutoff current	I_{G1SS}	—	—	± 100	nA	$V_{G1S} = \pm 6 V$ $V_{G2S} = V_{DS} = 0$
Gate2 to source cutoff current	I_{G2SS}	—	—	± 100	nA	$V_{G2S} = \pm 6 V$ $V_{G1S} = V_{DS} = 0$
Gate1 to source cutoff voltage	$V_{G1S(off)}$	0	0.2	1	V	$V_{DS} = 10 V, V_{G2S} = 3 V$ $I_D = 100 \mu A$
Gate2 to source cutoff voltage	$V_{G2S(off)}$	0	0.3	1	V	$V_{DS} = 10 V, V_{G1S} = 3 V$ $I_D = 100 \mu A$
Drain current	$I_{DS(op)}$	4	8	14	mA	$V_{DS} = 6 V, V_{G1S} = 0.75 V$ $V_{G2S} = 3 V$
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	C_{iss}	2.4	3.1	3.5	pF	$V_{DS} = 6 V, V_{G2S} = 3 V$
Output capacitance	C_{oss}	0.8	1.1	1.4	pF	$I_D = 10 mA, f = 1 MHz$
Reverse transfer capacitance	C_{rss}	—	0.021	0.04	pF	
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	4	dB	$I_D = 10 mA, f = 900 MHz$
Noise figure	NF	—	2.7	3.5	dB	$V_{DS} = 6 V, V_{G2S} = 3 V$ $I_D = 10 mA, f = 60 MHz$



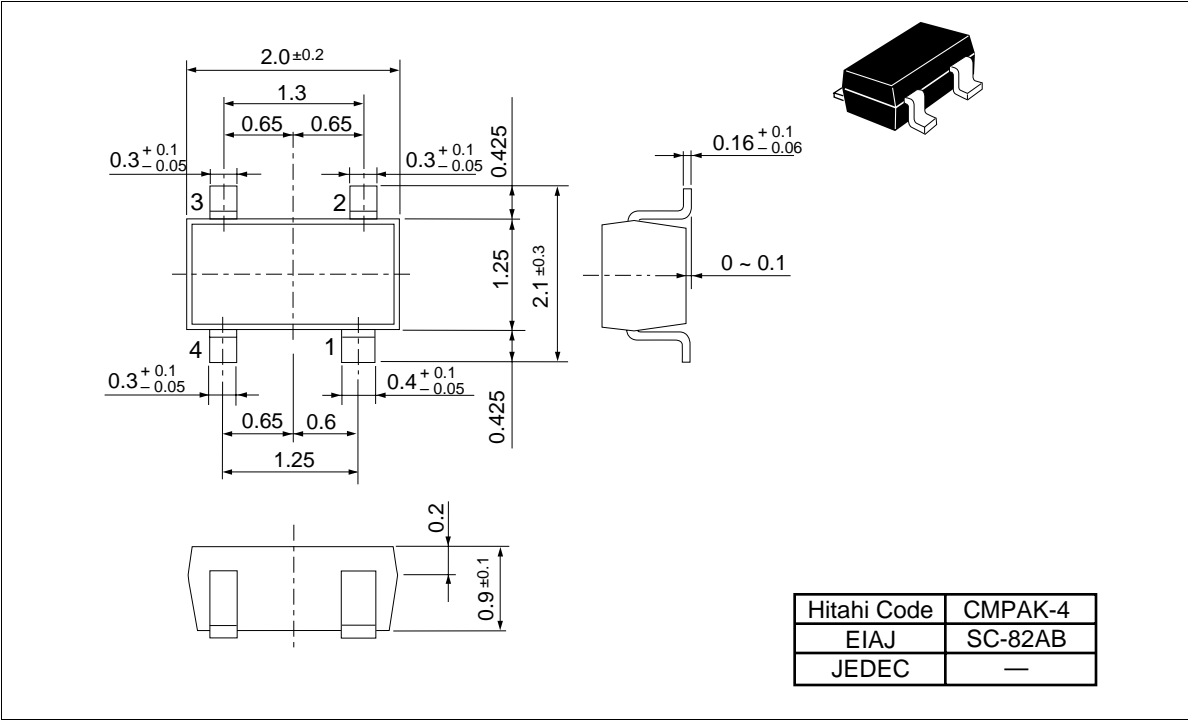






Package Dimensions

Unit: mm



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