
3SK186

Silicon N-Channel Dual Gate MOS FET

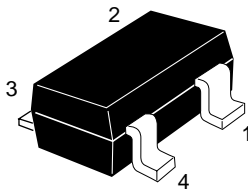
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Application

UHF TV tuner RF amplifier

Outline

MPAK-4



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

Absolute Maximum Ratings (Ta = 25°C)

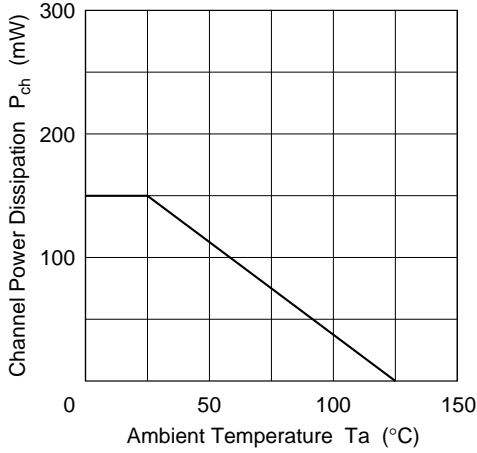
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS}	12	V
Gate 1 to source voltage	V_{G1S}	±10	V
Gate 2 to source voltage	V_{G2S}	±10	V
Drain current	I_D	35	mA
Channel power dissipation	Pch	150	mW
Channel temperature	Tch	125	°C
Storage temperature	Tstg	-55 to +125	°C

Electrical Characteristics (Ta = 25°C)

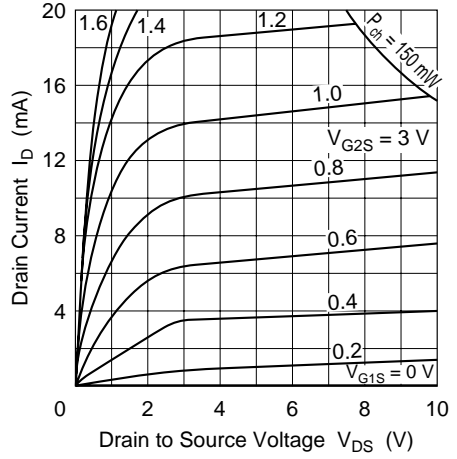
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	12	—	—	V	$V_{G1S} = V_{G2S} = -5$ V, $I_D = 200$ μA
Gate 1 to source breakdown voltage	$V_{(BR)G1SS}$	±10	—	—	V	$I_{G1} = \pm 10$ μA, $V_{G2S} = V_{DS} = 0$
Gate 2 to source breakdown voltage	$V_{(BR)G2SS}$	±10	—	—	V	$I_{G2} = \pm 10$ μA, $V_{G1S} = V_{DS} = 0$
Gate 1 cutoff current	I_{G1SS}	—	—	±100	nA	$V_{G1S} = \pm 8$ V, $V_{G2S} = V_{DS} = 0$
Gate 2 cutoff current	I_{G2SS}	—	—	±100	nA	$V_{G2S} = \pm 8$ V, $V_{G1S} = V_{DS} = 0$
Gate 1 to source cutoff voltage	$V_{G1S(off)}$	+0.5	—	-0.8	V	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 100$ μA
Gate 2 to source cutoff voltage	$V_{G2S(off)}$	+0.5	—	-0.8	V	$V_{DS} = 6$ V, $V_{G1S} = 3$ V, $I_D = 100$ μA
Drain current	I_{DSS}	0	—	4	mA	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $V_{G1S} = 0$
Forward transfer admittance	$ y_{fs} $	15	—	—	mS	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 1$ kHz
Input capacitance	Ciss	—	1.7	2.2	pF	$V_{DS} = 6$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 1$ MHz
Output capacitance	Coss	—	1.0	1.4	pF	
Reverse transfer capacitance	Crss	—	0.017	0.03	pF	
Power gain	PG	16	19	—	dB	$V_{DS} = 4$ V, $V_{G2S} = 3$ V, $I_D = 10$ mA, $f = 900$ MHz
Noise figure	NF	—	3.0	4.5	dB	

Note: Marking is "FI-".

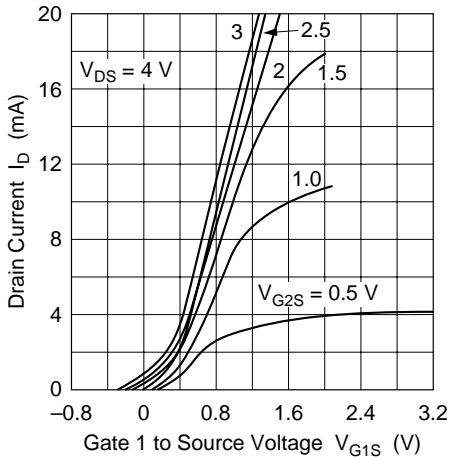
Maximum Channel Power Dissipation Curve



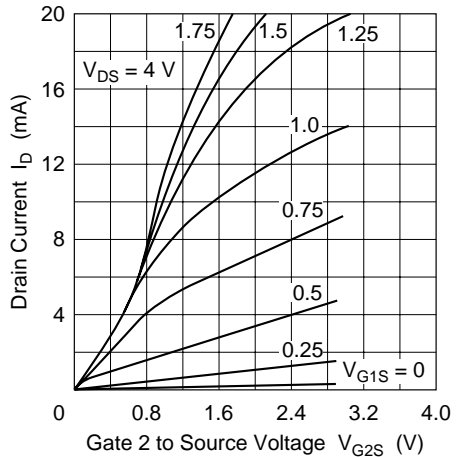
Typical Output Characteristics

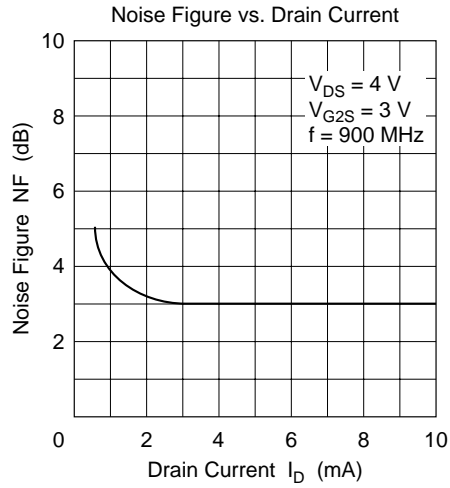
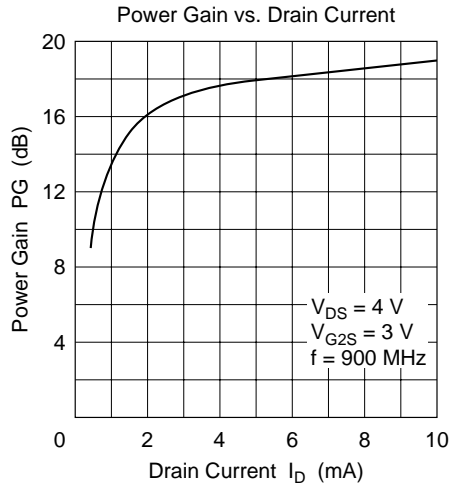
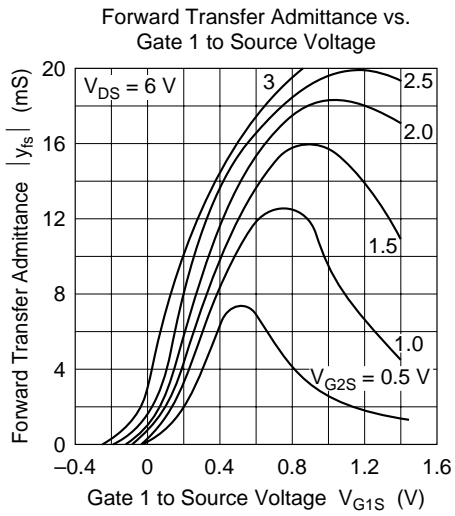


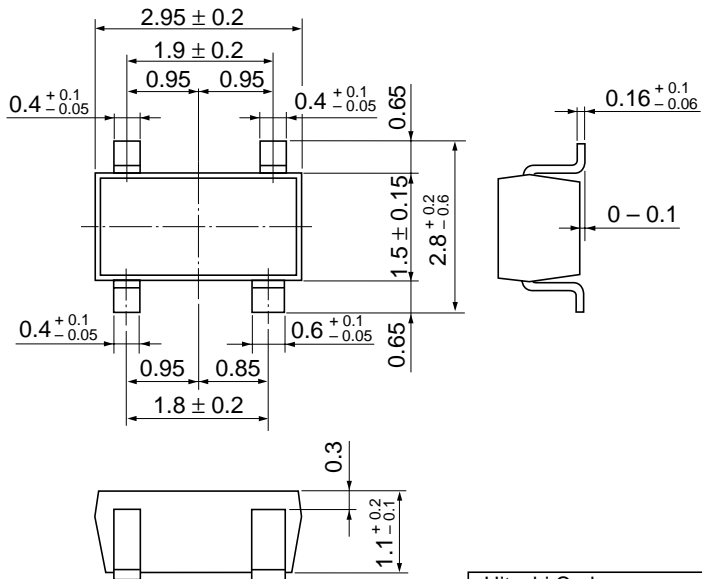
Drain Current vs. Gate 1 to Source Voltage



Drain Current vs. Gate 2 to Source Voltage







Hitachi Code	MPAK-4
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.013 g

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Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL North America : <http://semiconductor.hitachi.com/>
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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