2SK439

Silicon N-Channel MOS FET

HITACHI

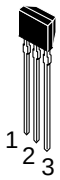
ADE-208-1172 (Z)
1st. Edition
Mar. 2001

Application

VHF amplifier

Outline

SPAK



1. Gate
2. Source
3. Drain

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DS}	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	300	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

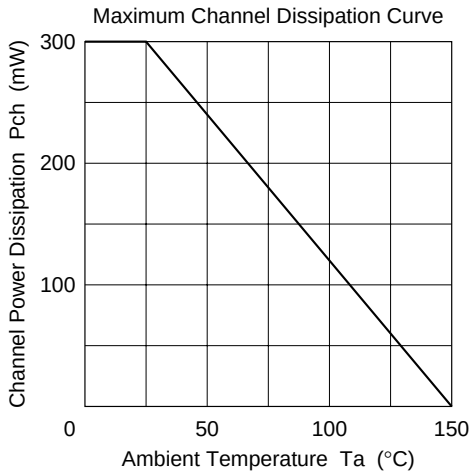
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	20	—	—	V	I_D = 100 µA, V_{GS} = –4 V
Gate cutoff current	I_{GSS}	—	—	±20	nA	V_{GS} = ±5 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	$\|y_{fs}\|$	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
Reverse transfer capacitance	Crss	—	0.03	—	pF	
Output capacitance	Coss	—	1.8	—	pF	V_{DS} = 5 V, V_{GS} = 0, f = 1 MHz
Power gain	PG	—	30	—	dB	V_{DS} = 10 V, V_{GS} = 0, f = 100 MHz
Noise figure	NF	—	2.0	—	dB	

Note: 1. The 2SK439 is grouped by I_{DSS} as follows.

Grade	D	E	F
I_{DSS}	4 to 8	6 to 10	8 to 12

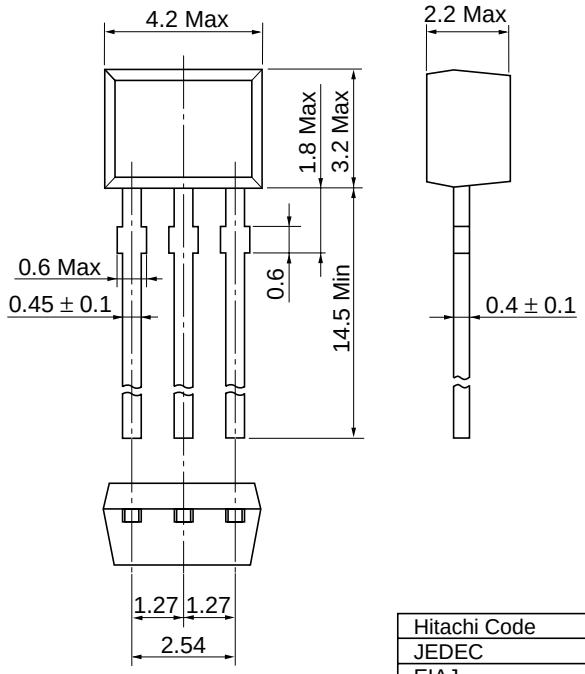
See characteristic curves of 2SK359.

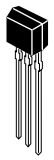

Maximum Channel Dissipation Curve
Channel Power Dissipation Pch (mW)
300
200
100
0
50
100
150
Ambient Temperature Ta (°C)

Package Dimensions

As of January, 2001

Unit: mm





Hitachi Code	SPAK
JEDEC	—
EIAJ	—
Mass (reference value)	0.10 g

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HITACHI

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
NorthAmerica : http://semiconductor.hitachi.com/
Europe : http://www.hitachi-eu.com/hel/ecg
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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 Straβe 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) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel : <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : http://www.hitachi.com.sg

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel : <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : http://www.hitachi.com.tw

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
URL : http://www.hitachi.com.hk

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