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# 2SK439

Silicon N-Channel MOS FET

# HITACHI

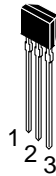
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## Application

VHF amplifier

## Outline

SPAK



1. Gate
2. Source
3. Drain

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DS}$	20	V
Gate to source voltage	$V_{GSS}$	$\pm 5$	V
Drain current	$I_D$	30	mA
Gate current	$I_G$	$\pm 1$	mA
Channel power dissipation	Pch	300	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

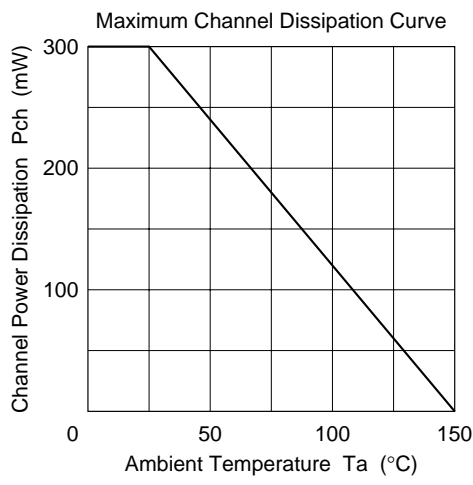
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSX}$	20	—	—	V	$I_D = 100\text{ }\mu\text{A}$ , $V_{GS} = -4\text{ V}$
Gate cutoff current	$I_{GSS}$	—	—	$\pm 20$	nA	$V_{GS} = \pm 5\text{ V}$ , $V_{DS} = 0$
Drain current	$I_{DSS}^{*1}$	4	—	12	mA	$V_{DS} = 10\text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0	—	-2.0	V	$V_{DS} = 10\text{ V}$ , $I_D = 10\text{ }\mu\text{A}$
Forward transfer admittance	$ y_{fs} $	8	14	—	mS	$V_{DS} = 10\text{ V}$ , $V_{GS} = 0$ , $f = 1\text{ kHz}$
Input capacitance	Ciss	—	2.5	—	pF	$V_{DS} = 10\text{ V}$ , $V_{GS} = 0$ , $f = 1\text{ MHz}$
Reverse transfer capacitance	Crss	—	0.03	—	pF	
Output capacitance	Coss	—	1.8	—	pF	$V_{DS} = 5\text{ V}$ , $V_{GS} = 0$ , $f = 1\text{ MHz}$
Power gain	PG	—	30	—	dB	$V_{DS} = 10\text{ V}$ , $V_{GS} = 0$ , $f = 100\text{ MHz}$
Noise figure	NF	—	2.0	—	dB	

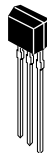
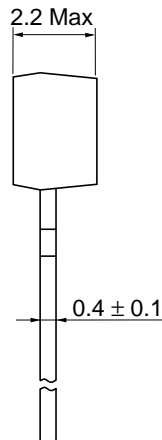
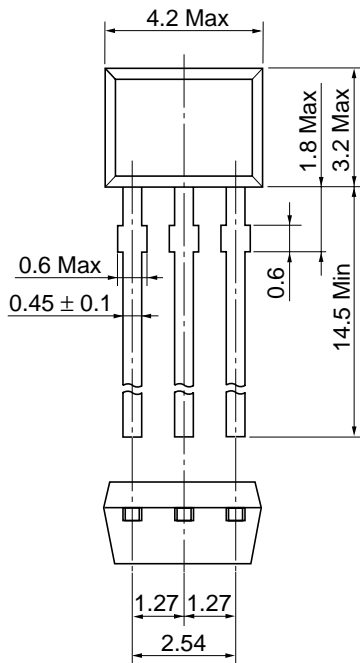
Note: 1. The 2SK439 is grouped by  $I_{DSS}$  as follows.

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

See characteristic curves of 2SK359.



Unit: mm



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

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