2SK439

Silicon N-Channel MOS FET

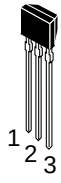
HITACHI

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

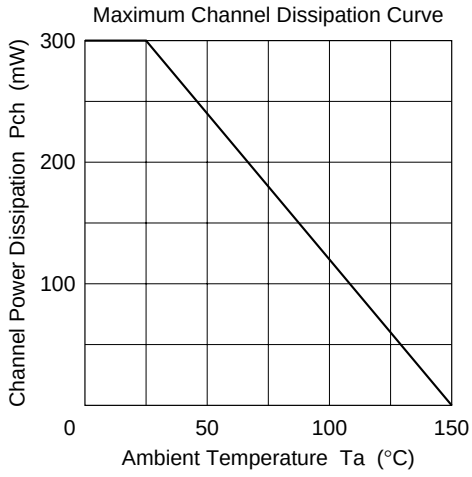
Electrical Characteristics (Ta = 25°C)

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	

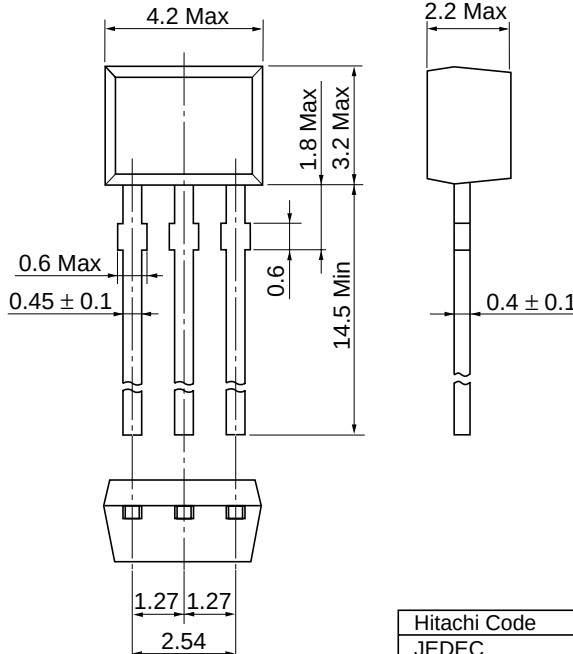
Note: 1. The 2SK439 is grouped by I_{DSS} as follows.

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)

Unit: mm



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

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