
2SK1999

Silicon N-Channel MOS FET

HITACHI

Application

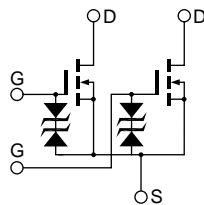
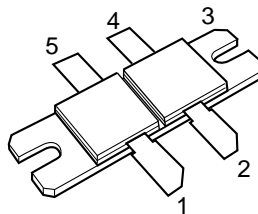
VHF amplifier

Features

- High gain, high efficiency
PG = 15 dB, $\eta_D = 65\%$ typ ($f = 200$ MHz)
- Compact package
Suitable for push - pull circuit

Outline

RFPAK-B



1. Drain
2. Drain
3. Source
4. Gate
5. Gate

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	120	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	12	A
Channel dissipation	Pch* ¹	180	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

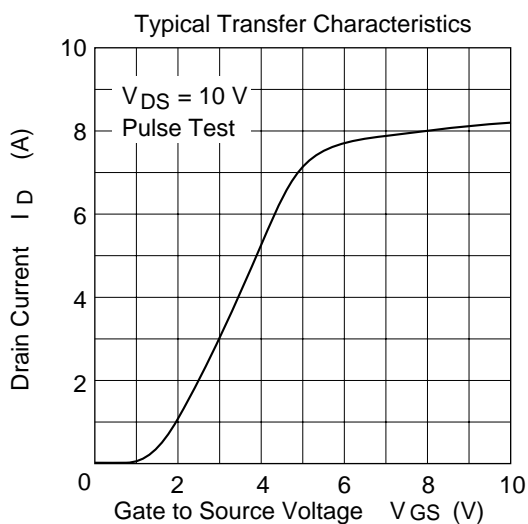
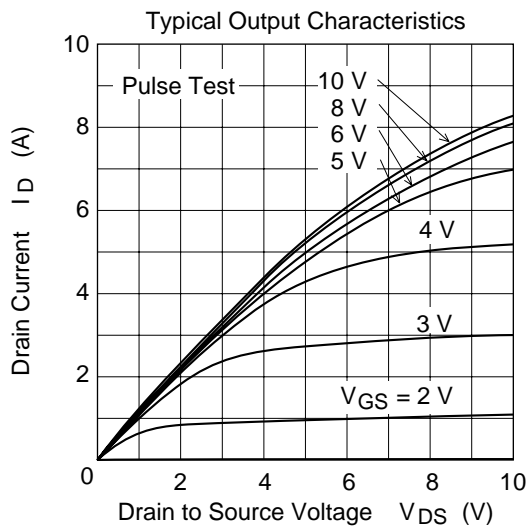
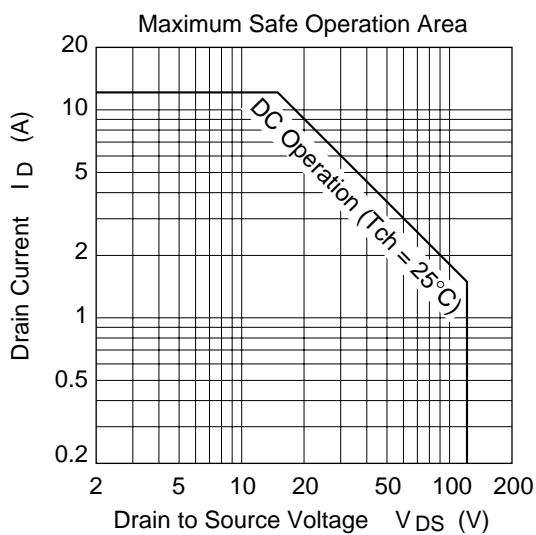
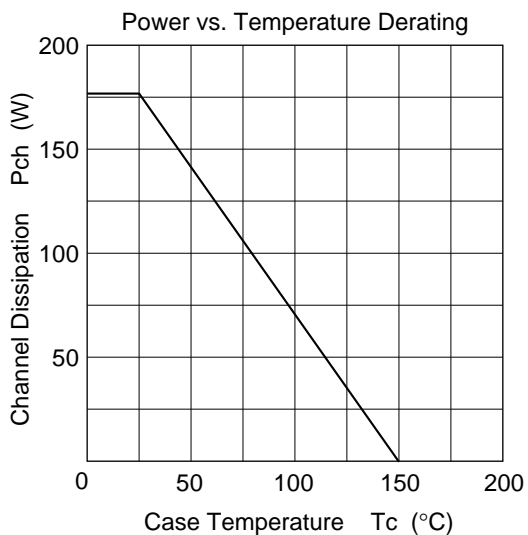
Note: 1. Value at T_c = 25°C

Electrical Characteristics (Ta = 25°C)

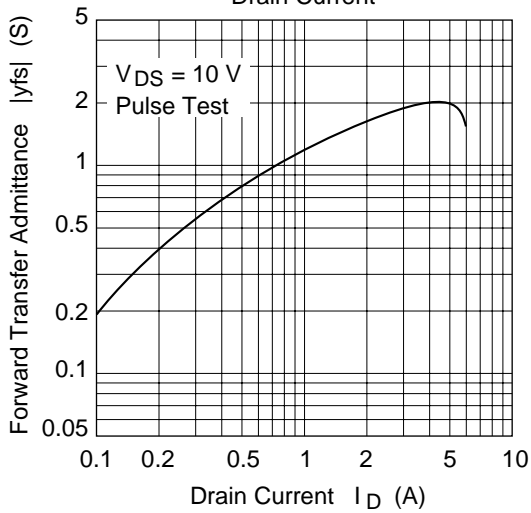
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage* ¹	$V_{(BR)DSS}$	120	—	—	V	$I_D = 1 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage* ¹	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}, V_{DS} = 0$
Zero gate voltage drain current* ¹	I_{DSS}	—	—	0.5	mA	$V_{DS} = 100 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage* ¹	$V_{GS(off)}$	0.5	—	2.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Drain to source cutoff voltage* ¹	$V_{DS(on)}$	—	2.7	3.5	V	$I_D = 3 \text{ A}, V_{GS} = 10 \text{ V}^{*2}$
Forward transfer admittance* ¹	$ y_{fs} $	1.5	1.8	—	S	$I_D = 2.5 \text{ A}, V_{DS} = 10 \text{ V}^{*2}$
Input capacitance* ¹	Ciss	—	185	—	pF	$V_{GS} = 5 \text{ V}, V_{DS} = 0$ $f = 1 \text{ MHz}$
Output capacitance* ¹	Coss	—	60	—	pF	$V_{DS} = 50 \text{ V}, V_{GS} = 0$ $f = 1 \text{ MHz}$
Output Power	Po	150	180	—	W	$V_{DS} = 60 \text{ V}, I_{DQ} = 0.2 \text{ A}$
Drain Efficiency	η_D	—	65	—	%	$f = 200 \text{ MHz}, P_{in} = 5 \text{ W}$

Notes: 1. Shows / unit FET

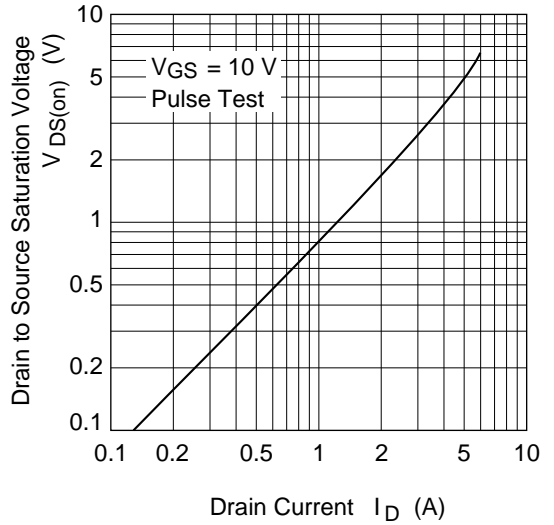
2. Pulse Test



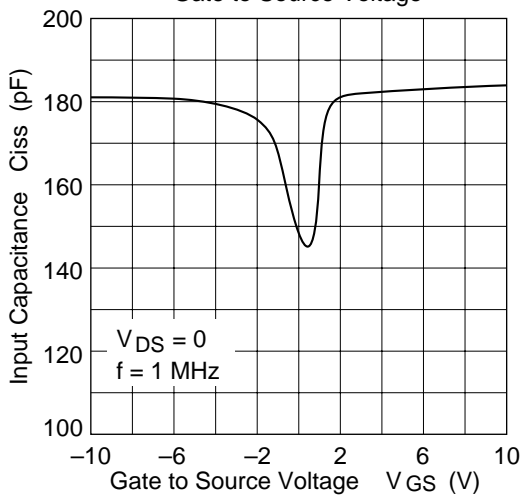
Forward Transfer Admittance vs. Drain Current



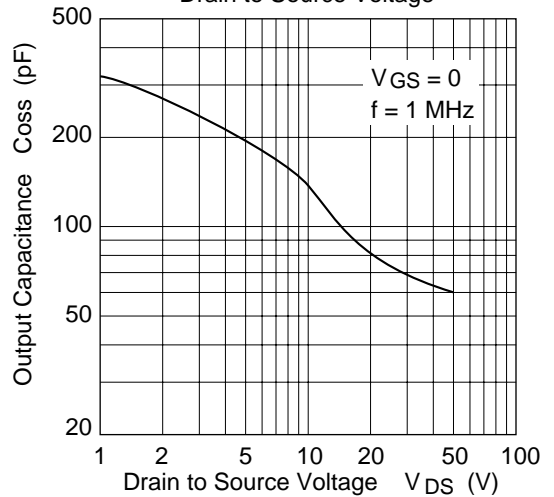
Drain to Source Saturation Voltage vs. Drain Current

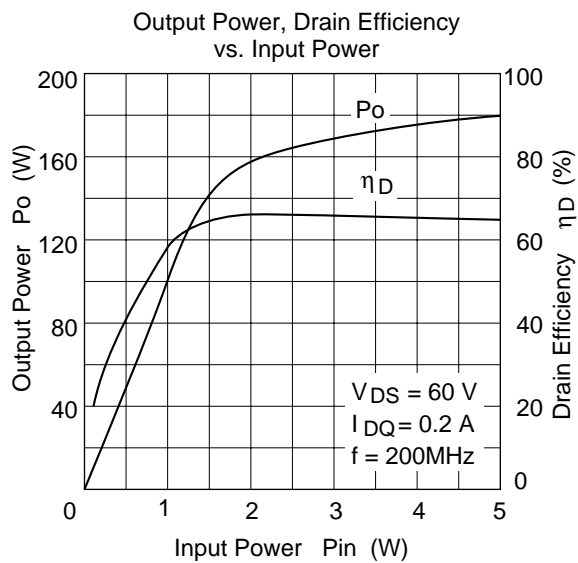


Input Capacitance vs. Gate to Source Voltage



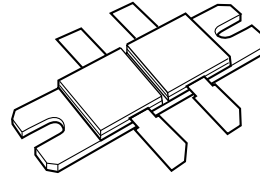
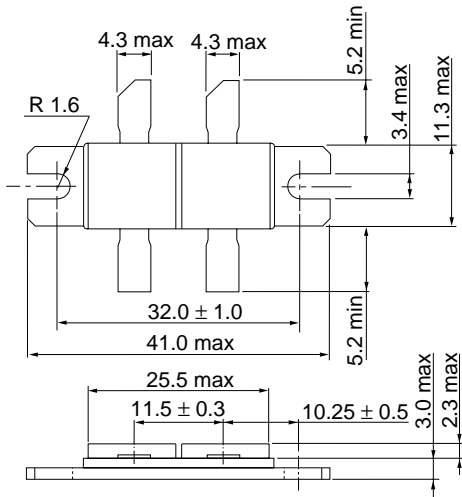
Output Capacitance vs. Drain to Source Voltage





Package Dimensions

Unit: mm



Hitachi Code	RFAK-B
EIAJ	—
JEDEC	—

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HITACHI

Hitachi, Ltd.

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

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-1835
U S A
Tel: 415-589-8300
Fax: 415-583-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 91 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 706, North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27306071