2SK1575

Silicon N-Channel MOS FET

HITACHI

Application

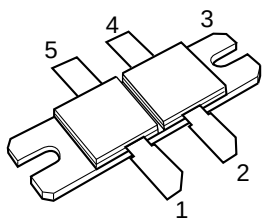
VHF amplifier

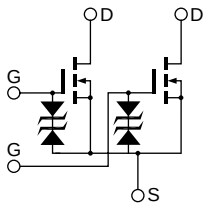
Features

- High gain, high efficiency
  PG = 13 dB, ηD = 65% typ (f = 190 MHz)
- Compact package
  Suitable for push - pull circuit

Outline

RFPAK-B





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

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	180	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	16	A
Channel dissipation	Pch*[1]	200	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

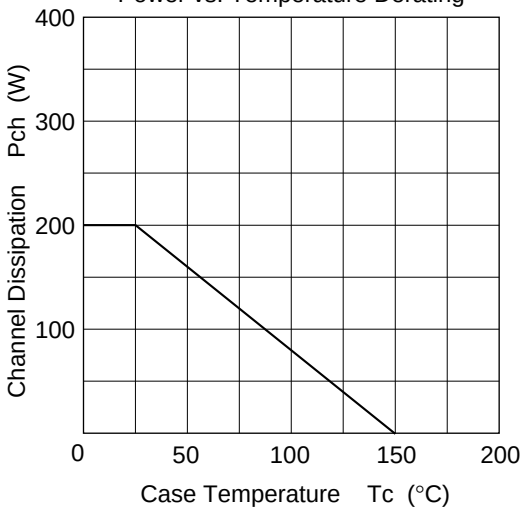
Note: 1. Value at T_C = 25°C

Electrical Characteristics (Ta = 25°C)

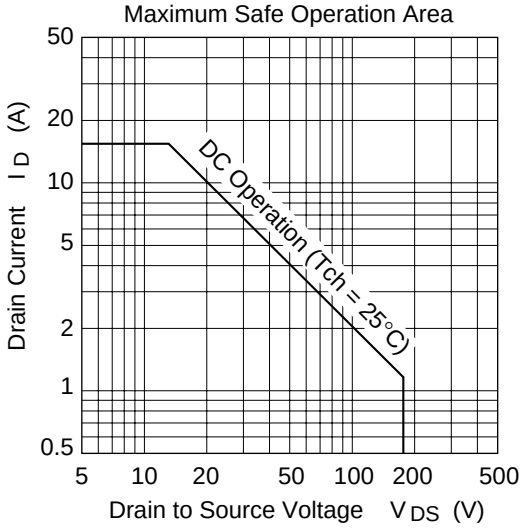
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage*[1]	$V_{(BR)DSS}$	180	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage*[1]	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100 µA, V_{DS} = 0
Zero gate voltage drain current*[1]	I_{DSS}	—	—	1	mA	V_{DS} = 140 V, V_{GS} = 0
Gate to source cutoff voltage*[1]	$V_{GS(off)}$	0.5	—	2.0	V	I_D = 1 mA, V_{DS} = 10 V
Drain to source cutoff voltage*[1]	$V_{DS(on)}$	—	3.8	6.0	V	I_D = 4 A, V_{GS} = 10 V*[2]
Forward transfer admittance*[1]	$\|y_{fs}\|$	0.9	1.25	—	S	I_D = 3 A, V_{DS} = 20 V*[2]
Input capacitance*[1]	Ciss	—	440	—	pF	V_{GS} = 5 V, V_{DS} = 0 f = 1 MHz
Output capacitance*[1]	Coss	—	75	—	pF	V_{DS} = 50 V, V_{GS} = 0 f = 1 MHz
Reverse transfer capacitance*[1]	Crss	—	0.5	—	pF	V_{GD} = –50 V, f = 1 MHz
Output Power	Po	180	220	—	W	V_{DS} = 80 V, I_{DQ} = 0.2 A
Drain Efficiency	ηD	—	65	—	%	f = 190 MHz, Pin = 10 W

Notes: 1. Shows / unit FET
2. Pulse Test

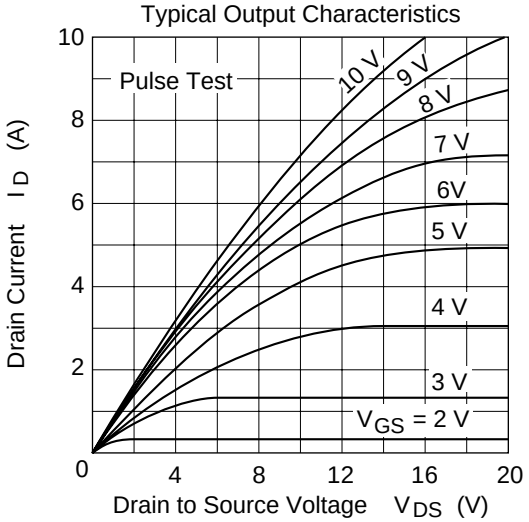
Power vs. Temperature Derating



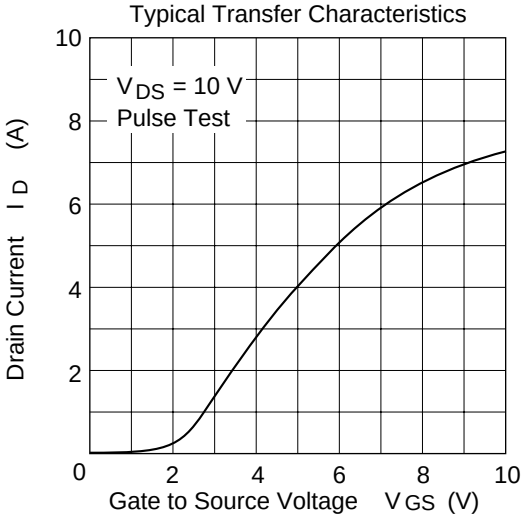
Maximum Safe Operation Area



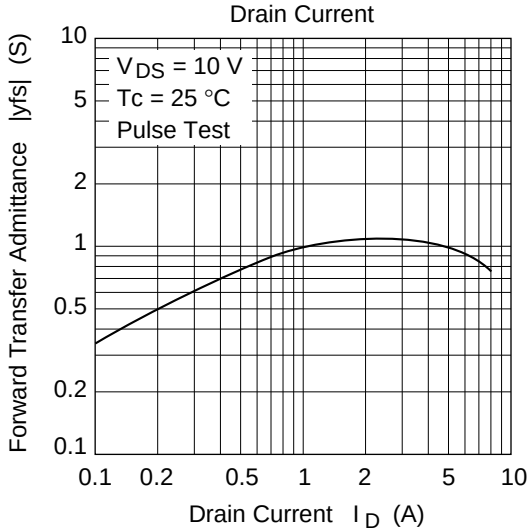
Typical Output Characteristics



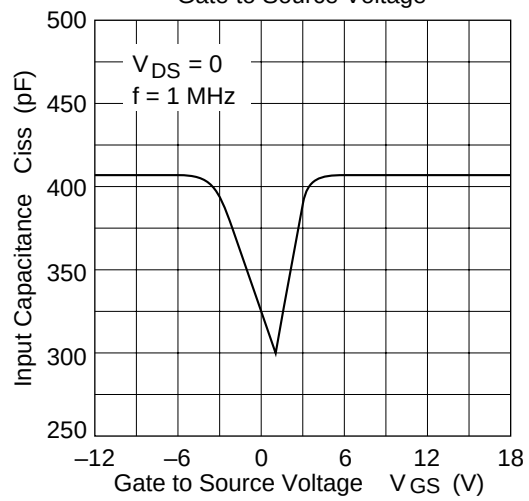
Typical Transfer Characteristics



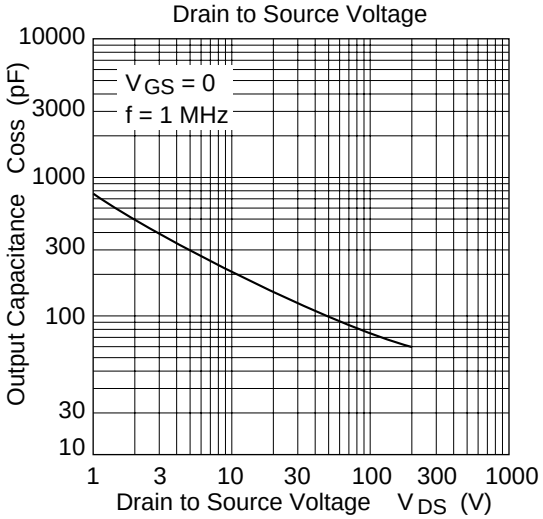
Forward Transfer Admittance vs. Drain Current



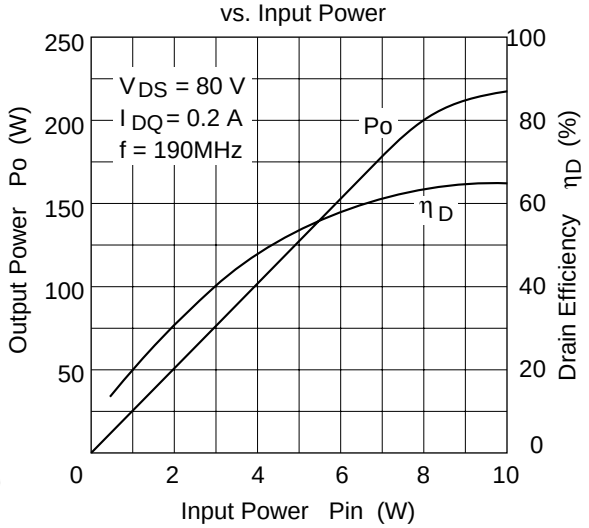
Input Capacitance vs. Gate to Source Voltage



Output Capacitance vs. Drain to Source Voltage

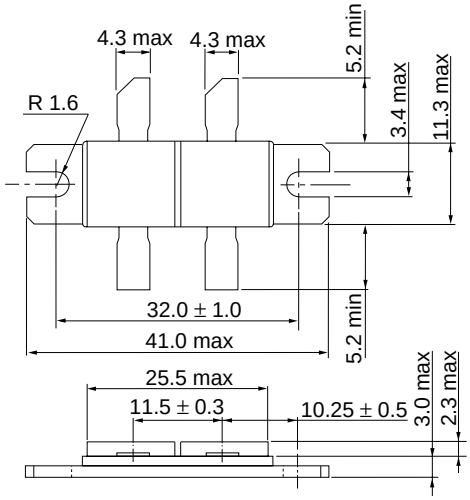


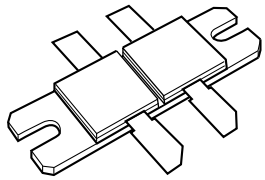
Output Power, Drain Efficiency vs. Input Power



Package Dimensions

Unit: mm





Hitachi Code	RFPAK–B
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