2SK2794

Silicon N-Channel MOS FET
UHF Power Amplifier

HITACHI

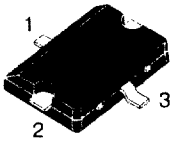
ADE-208-465
1st. Edition

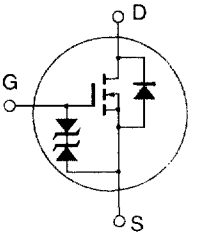
Features

- High power output, High gain, High efficiency
  PG = 8.0dB, Pout = 31dBm, ηD = 60 %min. (f = 836.5MHz)
- Compact package capable of surface mounting

Outline

RP8P





1. Gate
2. Source
3. Drain

This Device is sensitive to Elecro Static Discharge.
An Adequate handling procedure is requested.

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	10	V
Gate to source voltage	V_{GSS}	±6	V
Drain current	I_D	0.7	A
Drain peak current	$I_{D(pulse)}$ *1	1.4	A
Channel dissipation	Pch*2	3	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–45 to +150	°C

Notes: 1. PW ≤ 10ms, duty cycle ≤ 50 %
2. Value at Tc = 25°C

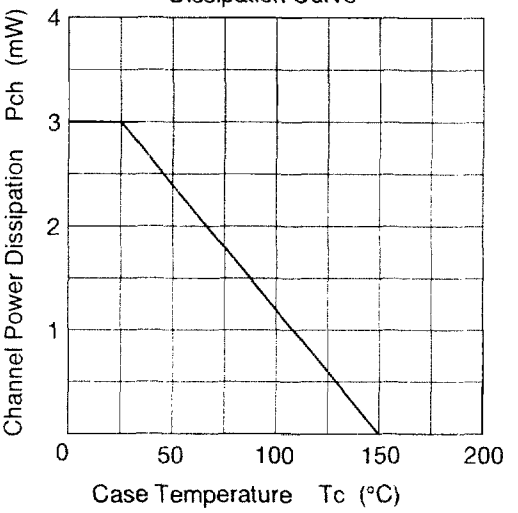
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltege drain current	I_{DSS}	—	—	10	µA	V_{DS} = 10 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±5.0	µA	V_{GS} = ±6V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	I_D = 4mA, V_{DS} = 5V
Input capacitance	Ciss	—	36	—	pF	V_{GS} = 2V, V_{DS} = 0 f = 1MHz
Output capacitance	Coss	—	17	—	pF	V_{DS} = 5, V_{GS} = 0 f = 1MHz
Output Power	Pout	31	—	—	dBm	V_{DS} = 4.7V f = 836.5MHz Pin = 23dBm
Drain Rational	ηD	60	—	—	%	V_{DS} = 4.7V f = 836.5MHz Pin = 23dBm

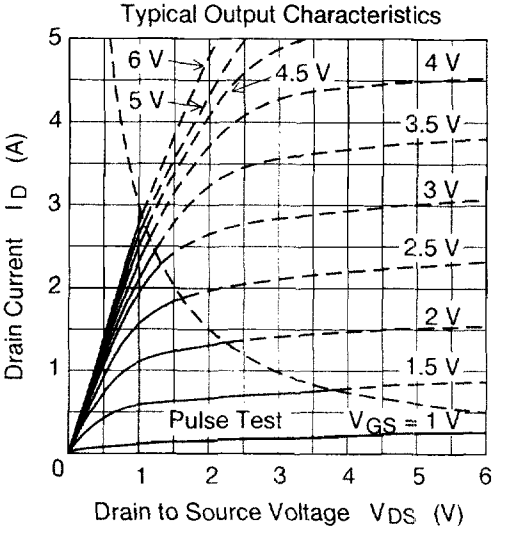
Note: 3. Marking is " CX ".

Main Characteristics

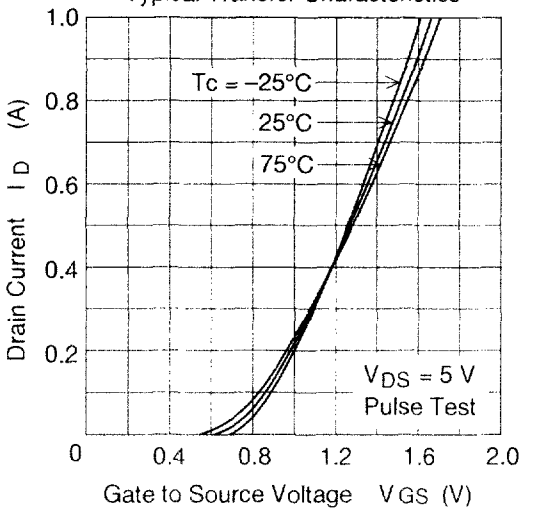
Maximum Channel Power Dissipation Curve



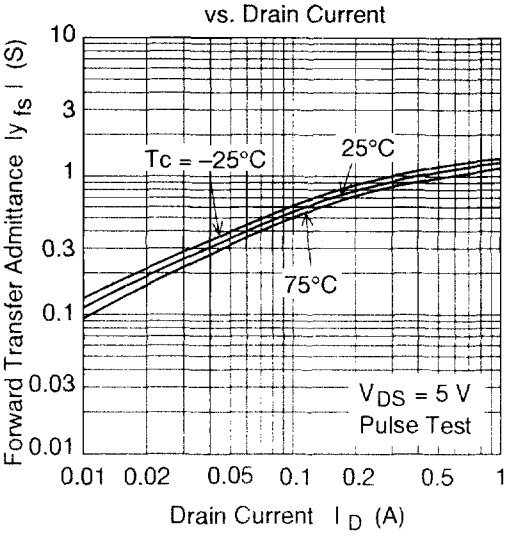
Typical Output Characteristics



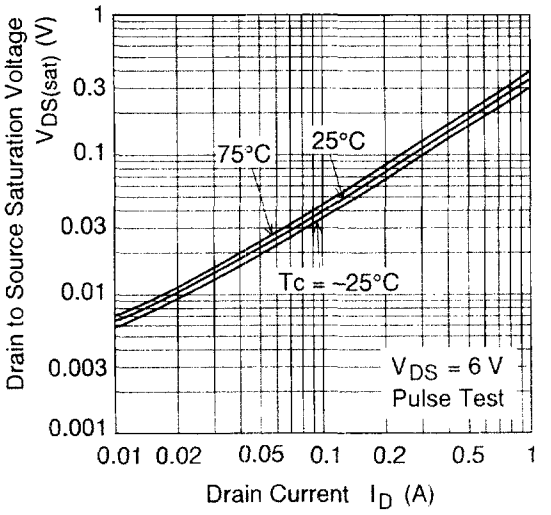
Typical Transfer Characteristics



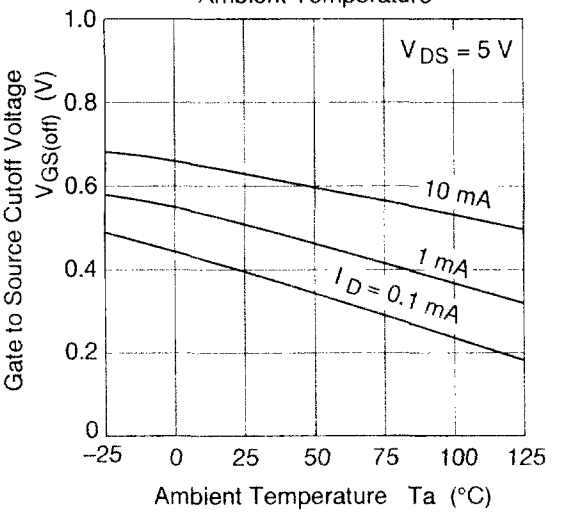
Forward Transfer Admittance vs. Drain Current



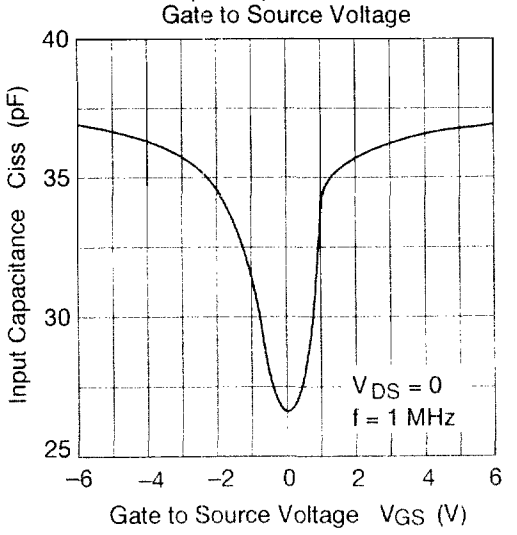
Drain to Source Saturation Voltage vs. Drain Current



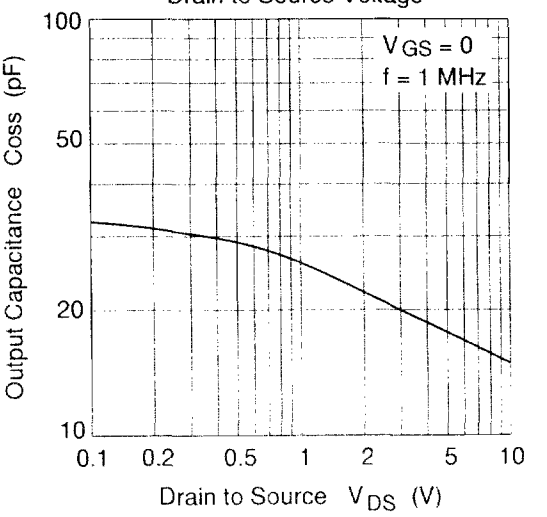
Gate to Source Cutoff Voltage vs. Ambient Temperature

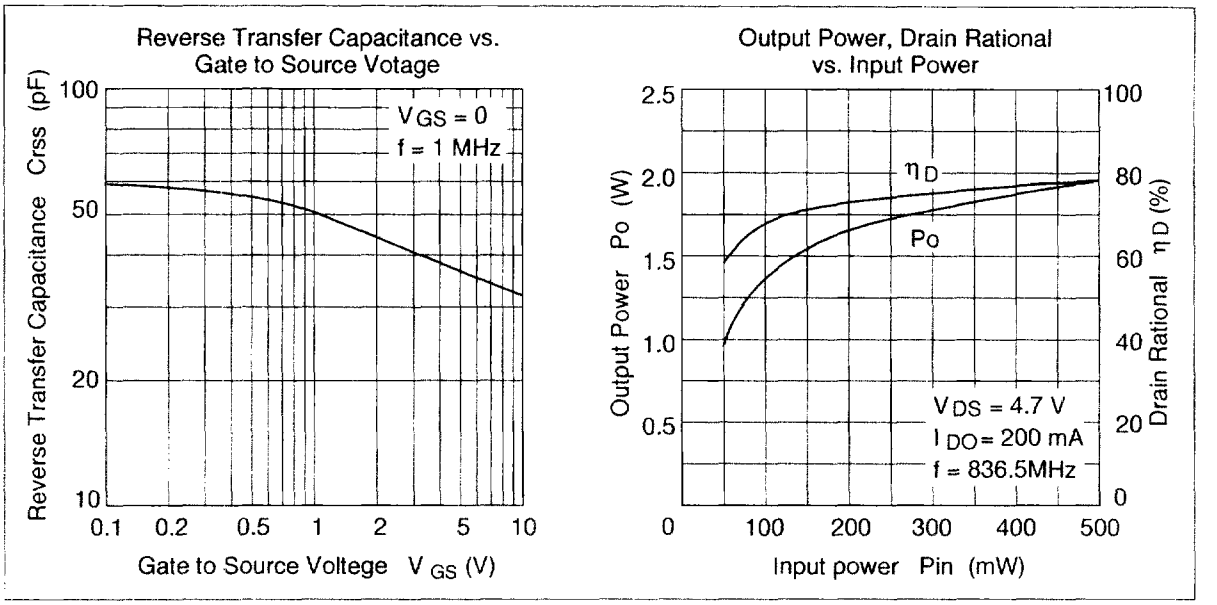


Input Capacitance vs. Gate to Source Voltage



Output Capacitance vs. Drain to Source Voltage




Reverse Transfer Capacitance vs.
Gate to Source Votage
Reverse Transfer Capacitance Crss (pF)
100
50
20
10
VGS = 0
f = 1 MHz
0.1
0.2
0.5
1
2
5
10
Gate to Source Voltege VGS (V)
Output Power, Drain Rational
vs. Input Power
Output Power Po (W)
2.5
2.0
1.5
1.0
0.5
0
ηD
Po
VDS = 4.7 V
IDO = 200 mA
f = 836.5MHz
100
200
300
400
500
Input power Pin (mW)
Drain Rational ηD (%)
100
80
60
40
20
0