2SK3390

Silicon N Channel MOS FET
UHF Power Amplifier

HITACHI

ADE-208-846 (Z)

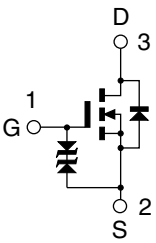
1st. Edition
Aug.2001

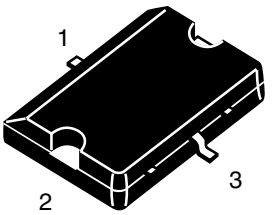
Features

- High power output, High gain, High efficiency
  PG = 17 dB, Pout = 6.31 W, ηadd= 60 % min. (f = 836 MHz)
- Compact package capable of surface mounting

Outline

RP8P





1. Gate
2. Source
3. Drain

Note: Marking is “IX”.

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

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Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	17	V
Gate to source voltage	V_{GSS}	±10	V
Drain current	I_D	1	A
Drain peak current	$I_{D(pulse)}$ Note1	2.5	A
Channel dissipation	Pch Note2	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–45 to +150	°C

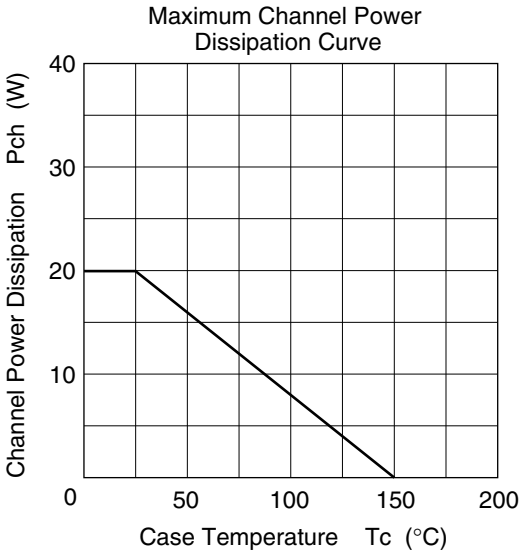
Note: 1. PW < 1sec, Tch < 150 °C
2. Value at Tc = 25°C

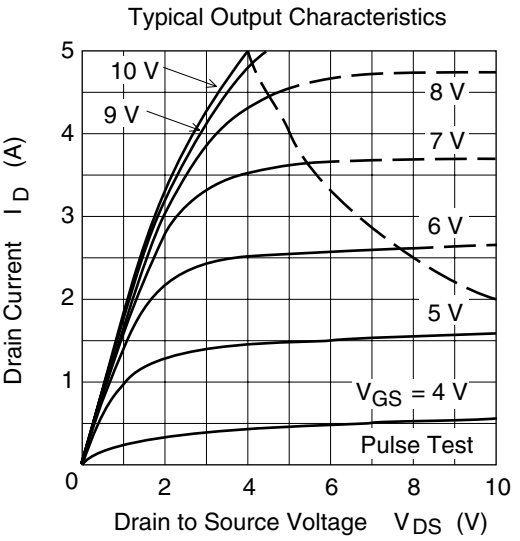
Electrical Characteristics

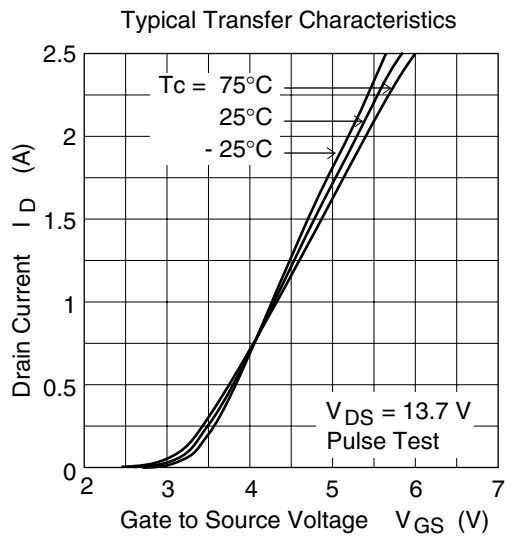
(Tc = 25°C)

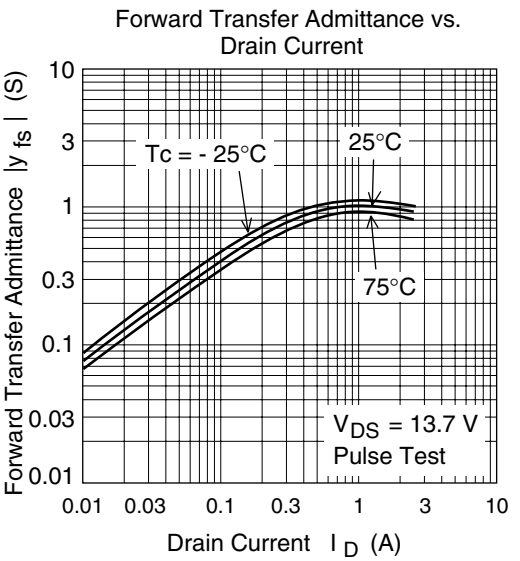
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage drain current	I_{DSS}	—	—	10	µA	V_{DS} = 13.7 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±5	µA	V_{GS} = ±10V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	2.2	—	3.0	V	I_D = 1mA, V_{DS} = 13.7V
Input capacitance	Ciss	—	27.5	—	pF	V_{GS} = 5V, V_{DS} = 0, f = 1MHz
Output capacitance	Coss	—	10.5	—	pF	V_{DS} = 13.7V, V_{GS} = 0, f = 1MHz
Output Power	Pout	6.31	—	—	W	V_{DS} = 13.7V, I_{DO} = 0.25A f = 836 MHz, Pin = 126 mW
Added Efficiency	ηadd	60	—	—	%	V_{DS} = 13.7V, I_{DO} = 0.25A f = 836 MHz, Pin = 126 mW

Main Characteristics

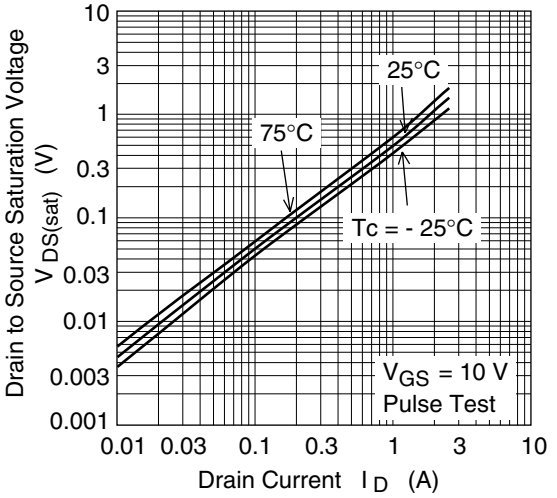




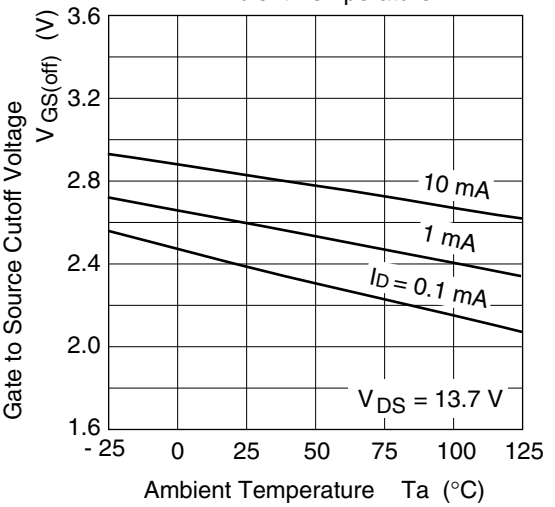




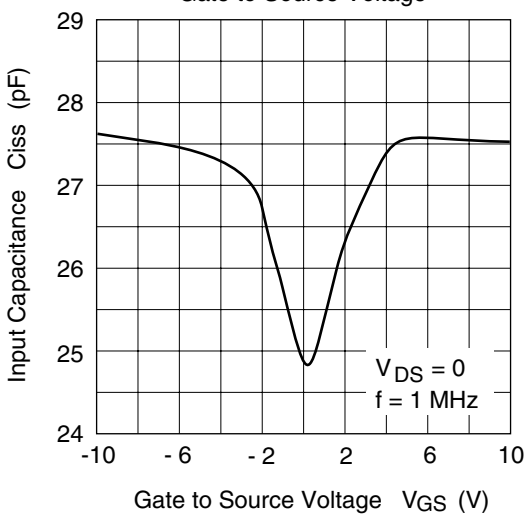
Drain to Source Saturatioin Voltage vs. Drain Current



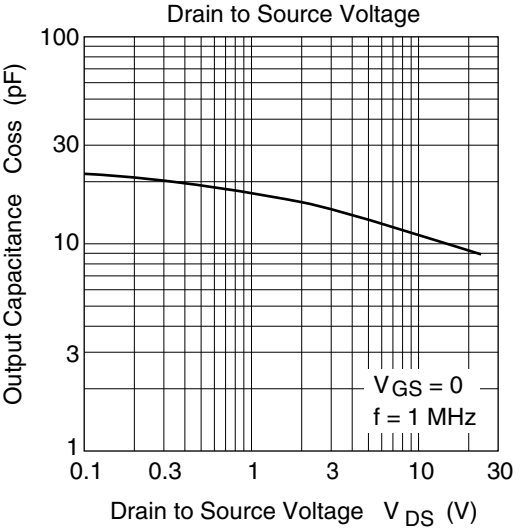
Gate to Source Cutoff Voltage vs. Ambient Temperature

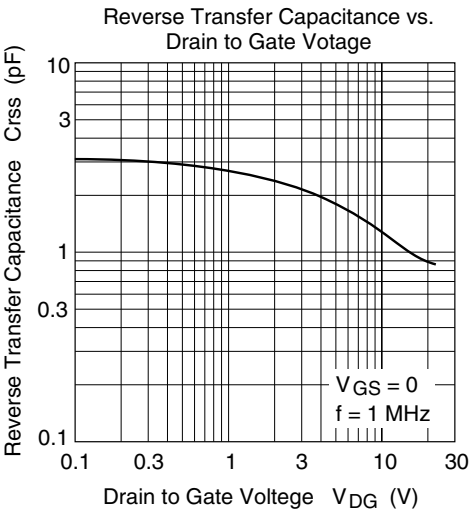


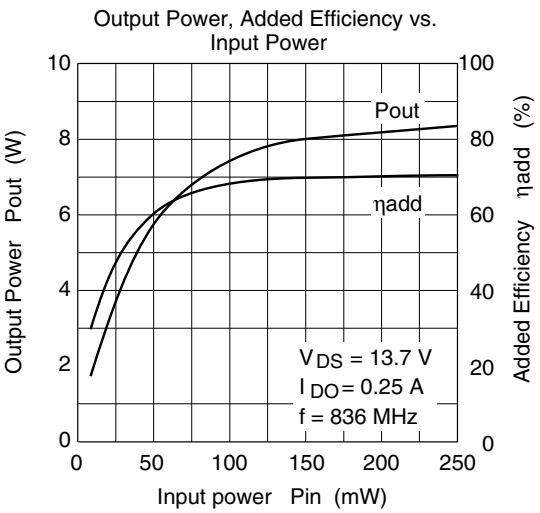
Input Capacitance vs. Gate to Source Voltage



Output Capacitance vs. Drain to Source Voltage

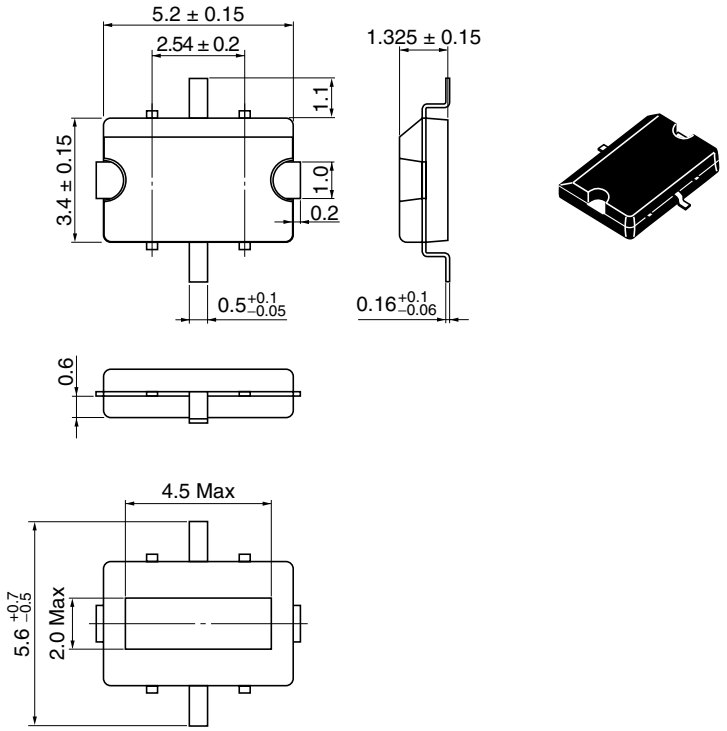



Reverse Transfer Capacitance vs.
Drain to Gate Votage
Reverse Transfer Capacitance Crss (pF)
10
3
1
0.3
0.1
0.1
0.3
1
3
10
30
VGS = 0
f = 1 MHz
Drain to Gate Voltege VDG (V)


Output Power, Added Efficiency vs.
Input Power
Output Power Pout (W)
10
8
6
4
2
0
100
80
60
40
20
0
Added Efficiency ηadd (%)
Pout
ηadd
VDS = 13.7 V
IDO = 0.25 A
f = 836 MHz
0
50
100
150
200
250
Input power Pin (mW)

Package Dimensions

As of January, 2001
Unit: mm



Hitachi Code	RP8P
JEDEC	—
EIAJ	—
Mass (reference value)	0.08 g

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