

PF01410A

MOS FET Power Amplifier Module for GSM Handy Phone

HITACHI

ADE-208-424C (Z)
4th Edition
Jan. 2001

Application

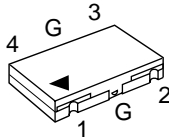
- For GSM class4 890 MHz to 915 MHz

Features

- 4.8 V operation 2stage amplifier
- Small package
- High efficiency : 45 % Typ
- High speed switching : 1 μ sec

Pin Arrangement

• RF-K1



1: Pin
2: V_{apc}
3: V_{dd}
4: P_{out}
G: GND

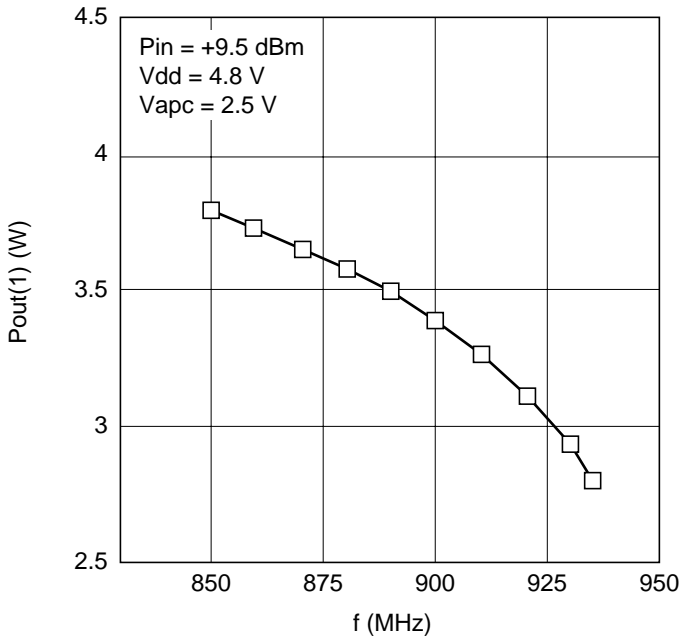
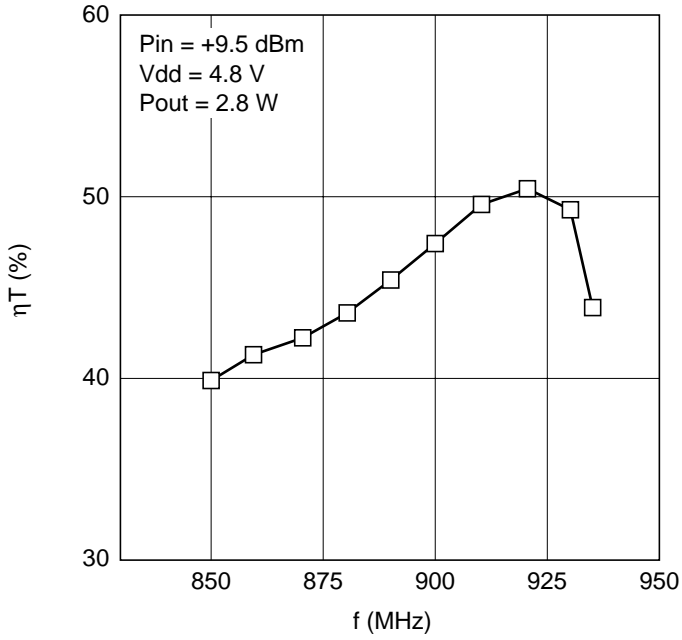
Absolute Maximum Ratings (T_c = 25°C)

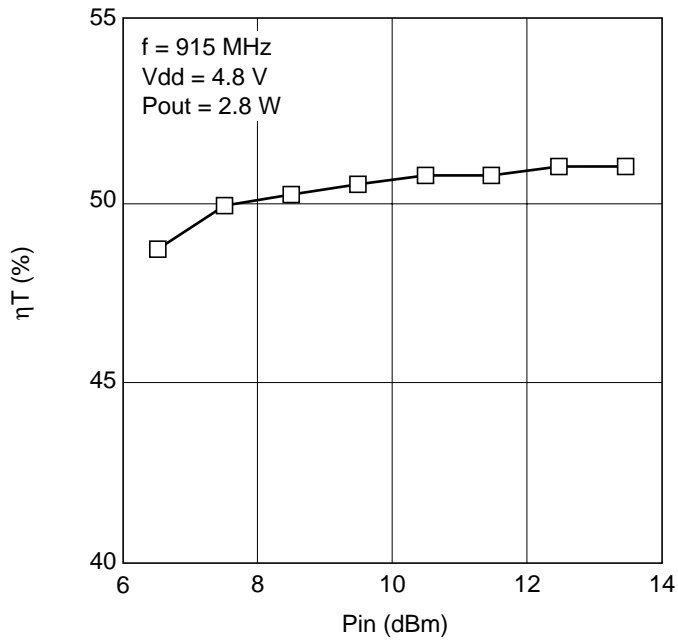
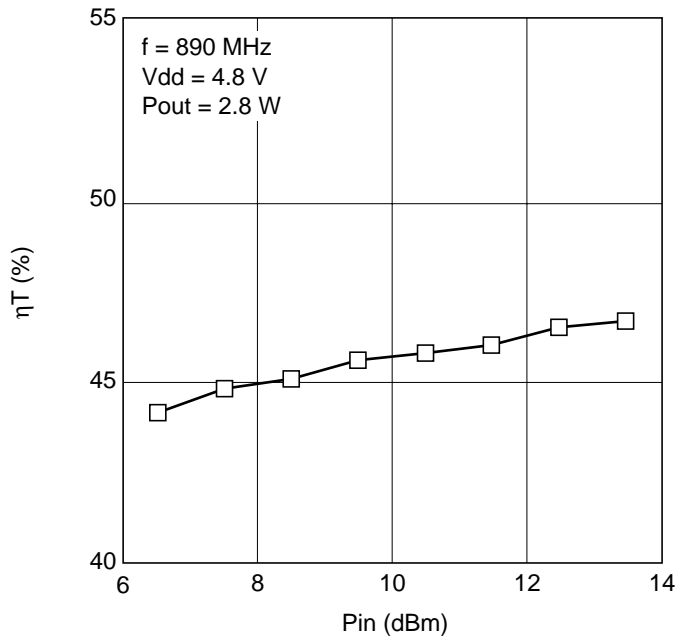
Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	10	V
Supply current	I _{DD}	3	A
V _{APC} voltage	V _{APC}	4	V
Input power	P _{in}	50	mW
Operating case temperature	T _c (op)	-30 to +100	°C
Storage temperature	T _{stg}	-30 to +100	°C
Output power	P _{out}	4	W

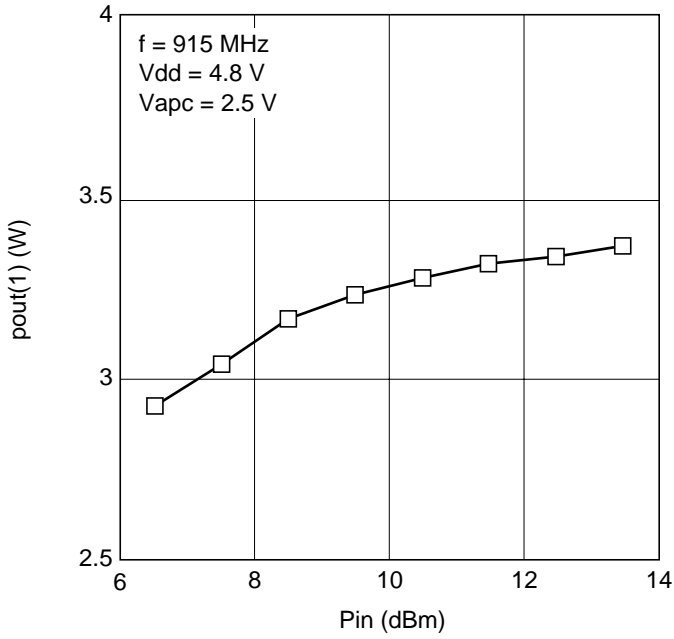
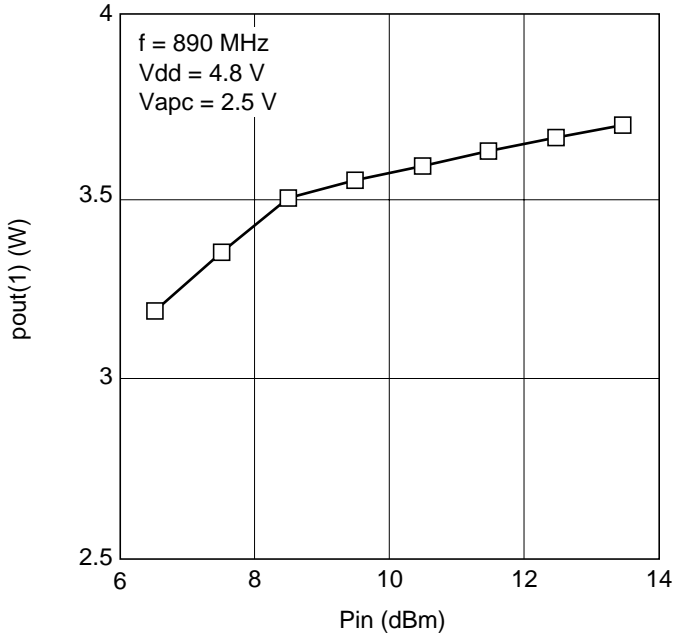
Electrical Characteristics (Tc = 25°C)

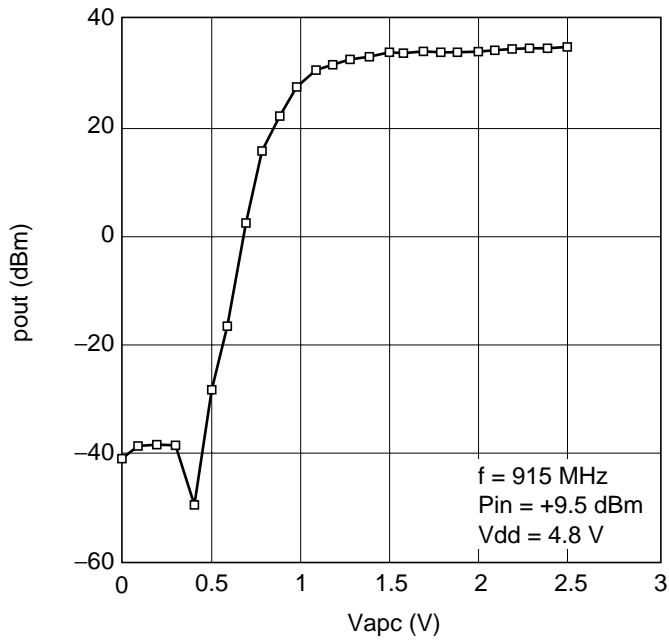
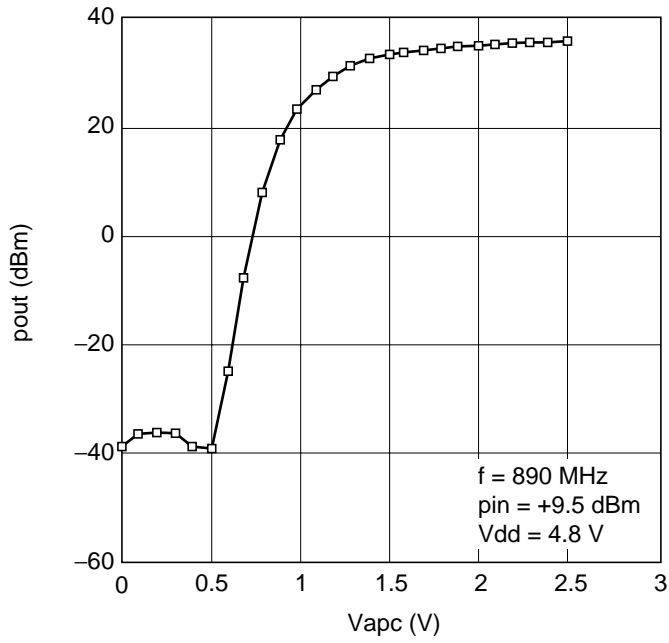
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	—
Control voltage range	V _{APC}	0.1	—	2.5	V	—
Drain cutoff current	I _{DS}	—	—	100	μA	V _{DD} = 10 V, V _{APC} = 0 V
Total efficiency	η _T	38	45	—	%	Pin = +8 dBm, V _{DD} = 4.8 V,
2nd harmonic distortion	2nd H.D.	—	-45	-35	dBc	Pout = 2.8 W (At APC controlled)
3rd harmonic distortion	3rd H.D.	—	-45	-35	dBc	R _L = R _g = 50Ω, Tc = 25°C
Input VSWR	VSWR (in)	—	1.5	3.0	—	
Output power (1)	Pout (1)	2.8	3.3	—	W	Pin = +8 dBm, V _{DD} = 4.8 V, V _{APC} = 2.5 V, R _L = R _g = 50Ω, Tc = 25°C
Output power (2)	Pout (2)	1.5	1.8	—	W	Pin = +8 dBm, V _{DD} = 4 V, V _{APC} = 2.5 V, R _L = R _g = 50Ω, Tc = 85°C
Isolation	—	—	-35	-20	dBm	Pin = +12.5 dBm, V _{DD} = 4.8 V, V _{APC} = 0.1 V, R _L = R _g = 50Ω, Tc = 25°C
Switching time	t _r , t _f	—	1	2	μs	Pin = +8 dBm, V _{DD} = 4.8 V, R _L = R _g = 50Ω, Tc = 25°C Time from Pout = -10 to +34.5 dBm
Stability	—	No parasitic oscillation			—	Pin = +8 dBm, V _{DD} = 7 V, Pout ≤ 2.8 W (At APC controlled), R _g = 50 Ω, Tc = 25°C, Output VSWR = 8 : 1 All phases

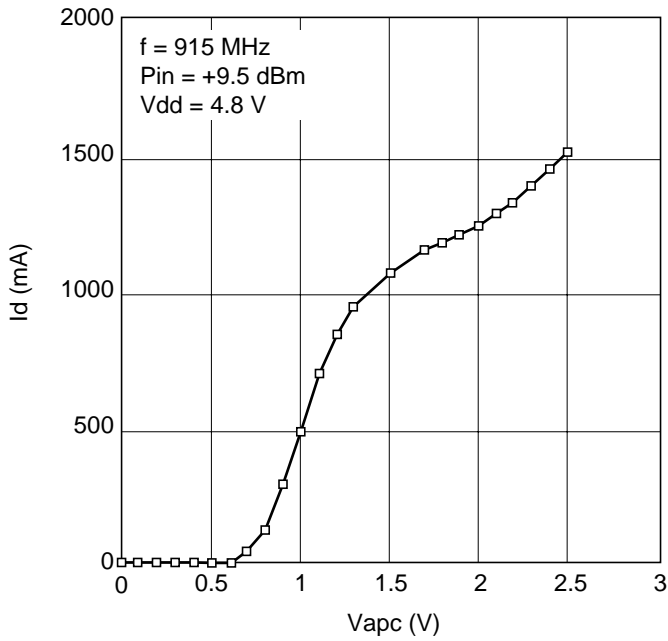
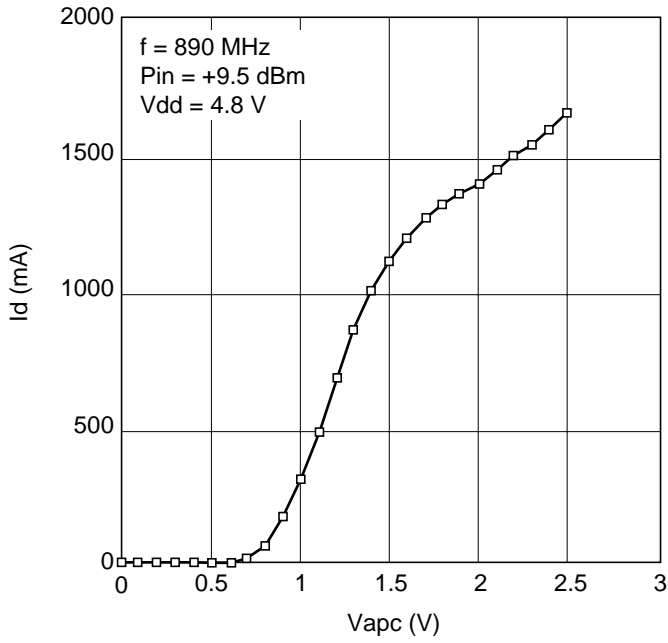
Characteristic Curves





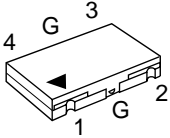
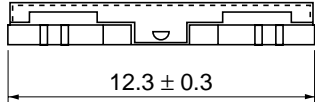
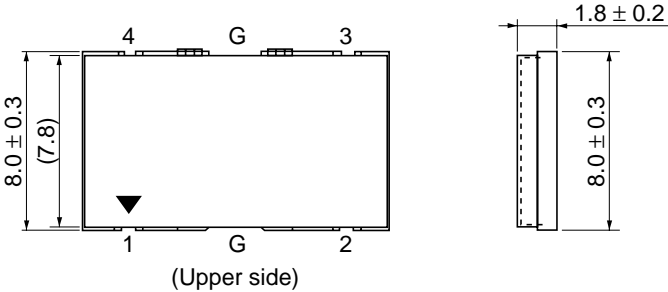




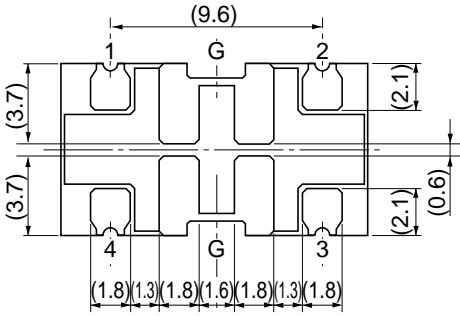


Package Dimensions

Unit: mm



- 1: Pin
- 2: Vapc
- 3: Vdd
- 4: Pout
- G: GND



Remark:
Coplanarity of bottom side of terminals are less than 0 ± 0.1 mm.

Hitachi Code	RF-K1
JEDEC	—
EIAJ	—
Mass (reference value)	—

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HITACHI**Hitachi, Ltd.**

Semiconductor & Integrated Circuits.

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL	NorthAmerica	: http://semiconductor.hitachi.com/
	Europe	: http://www.hitachi-eu.com/hel/ecg
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe GmbH
Electronic Components Group
Dornacher StraÙe 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 585160

Hitachi Asia Ltd.
Hitachi Tower
16 Collyer Quay #20-00,
Singapore 049318
Tel: <65>-538-6533/538-8577
Fax : <65>-538-6933/538-3877
URL : <http://www.hitachi.com.sg>

Hitachi Asia Ltd.
(Taipei Branch Office)
4/F, No. 167, Tun Hwa North Road,
Hung-Kuo Building,
Taipei (105), Taiwan
Tel: <886>-(2)-2718-3666
Fax : <886>-(2)-2718-8180
Telex : 23222 HAS-TP
URL : <http://www.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon,
Hong Kong
Tel : <852>-(2)-735-9218
Fax : <852>-(2)-730-0281
URL : <http://www.hitachi.com.hk>

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