
PF0414A

MOS FET Power Amplifier Module for DCS 1800 Handy Phone

HITACHI

ADE-208-431B (Z)
3rd Edition
December 1997

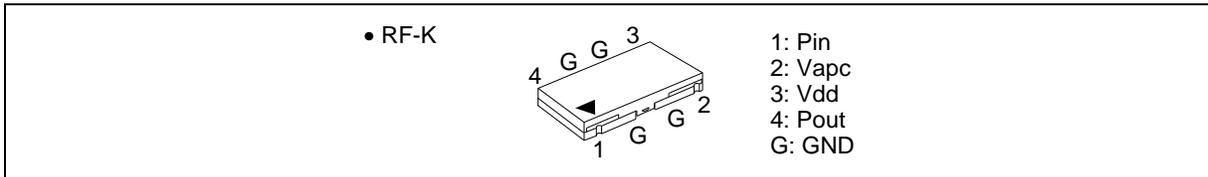
Application

For DCS 1800 class1 1710 to 1785 MHz.

Features

- 3stage amplifier
- Small package: 0.2cc
- High efficiency: 45% Typ
- High speed switching: 0.9 μ sec

Pin Arrangement



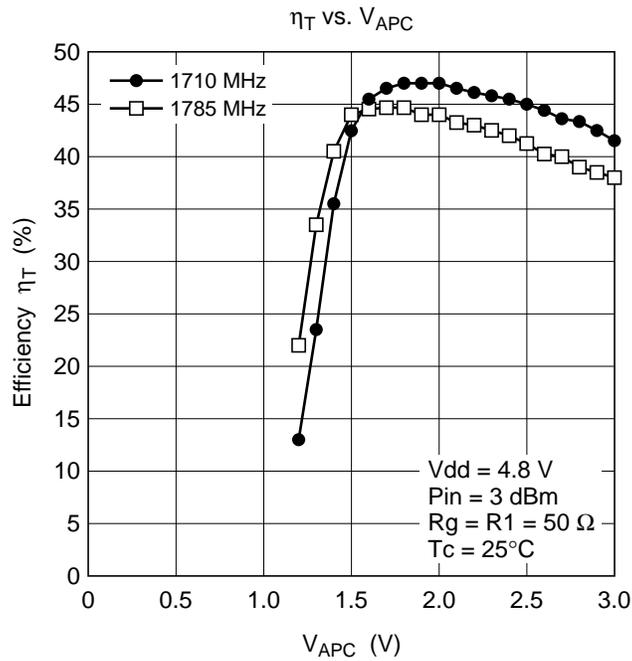
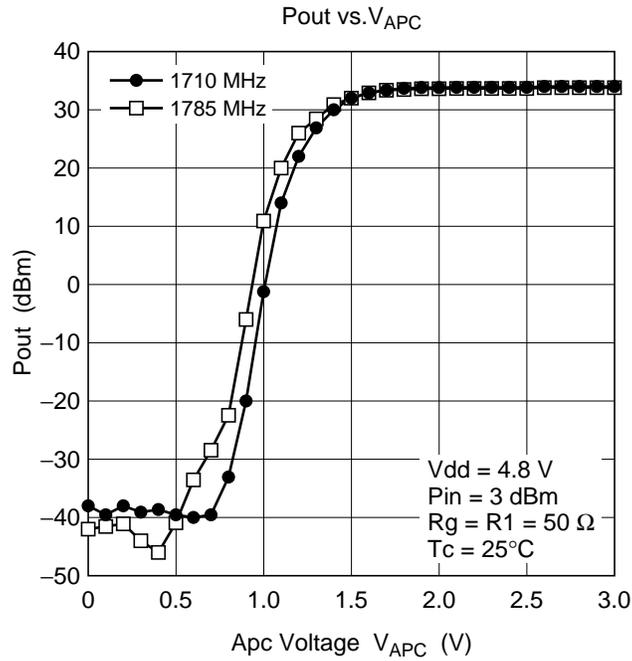
Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	11	V
Supply current	I _{DD}	3	A
V _{APC} voltage	V _{APC}	6	V
Input power	Pin	20	mW
Operating case temperature	T _c (op)	-30 to +100	°C
Storage temperature	T _{stg}	-30 to +100	°C
Output power	Pout	3	W

PF0414A

Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	1710	—	1785	MHz	
Control voltage range	V _{APC}	0.5	—	3	V	
Drain cutoff current	I _{DS}	—	—	100	μA	V _{DD} = 11 V, V _{APC} = 0 V
Total efficiency	η _T	37	45	—	%	Pin = 2 mW, V _{DD} = 4.8 V, Pout = 1.8 W (at APC controlled), R _L = Rg = 50 Ω, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	-45	-35	dBc	
3rd harmonic distortion	3rd H.D.	—	-45	-35	dBc	
Input VSWR	VSWR (in)	—	1.5	3	—	
Output power (1)	Pout (1)	2.0	2.4	—	W	Pin = 2 mW, V _{DD} = 4.8 V, V _{APC} = 3 V, R _L = Rg = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	1.2	1.5	—	W	Pin = 2 mW, V _{DD} = 4.3 V, V _{APC} = 3 V, R _L = Rg = 50 Ω, Tc = 80°C
Isolation	—	—	-40	-30	dBm	Pin = 2 mW, V _{DD} = 4.8 V, V _{APC} = 0.5 V, R _L = Rg = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	0.9	2	μs	Pin = 2 mW, V _{DD} = 4.8 V, Pout = 1.8 W, R _L = Rg = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 2 mW, V _{DD} = 6 V, Ids ≤ 0.9 A (only pulsed), Pout ≤ 1.8 W (at APC controlled), Rg = 50 Ω, t = 20 sec., Tc = 25°C, Output VSWR = 10 : 1 All phases



When using this document, keep the following in mind:

1. This document may, wholly or partially, be subject to change without notice.
2. All rights are reserved: No one is permitted to reproduce or duplicate, in any form, the whole or part of this document without Hitachi's permission.
3. Hitachi will not be held responsible for any damage to the user that may result from accidents or any other reasons during operation of the user's unit according to this document.
4. Circuitry and other examples described herein are meant merely to indicate the characteristics and performance of Hitachi's semiconductor products. Hitachi assumes no responsibility for any intellectual property claims or other problems that may result from applications based on the examples described herein.
5. No license is granted by implication or otherwise under any patents or other rights of any third party or Hitachi, Ltd.
6. **MEDICAL APPLICATIONS:** Hitachi's products are not authorized for use in **MEDICAL APPLICATIONS** without the written consent of the appropriate officer of Hitachi's sales company. Such use includes, but is not limited to, use in life support systems. Buyers of Hitachi's products are requested to notify the relevant Hitachi sales offices when planning to use the products in **MEDICAL APPLICATIONS**.

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 StraÙe 3
D-85622 Feldkirchen
M nchen
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

Copyright © Hitachi, Ltd., 1997. All rights reserved. Printed in Japan.