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# PF0415A

MOS FET Power Amplifier Module  
for PCS 1900 Handy Phone

## HITACHI

ADE-208-473C (Z)  
4th Edition  
August 1997

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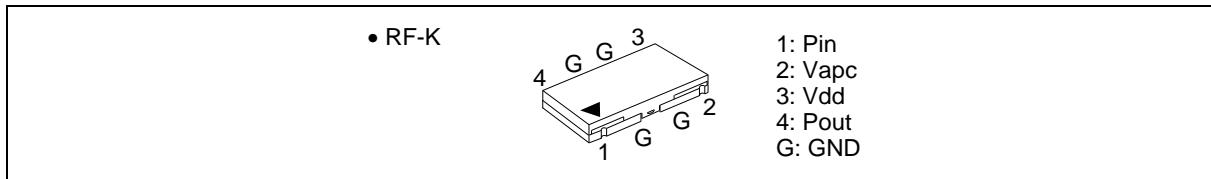
### Application

For PCS 1900 class1 1850 to 1910 MHz.

### Features

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

### Pin Arrangement



### Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V <sub>DD</sub>	11	V
Supply current	I <sub>DD</sub>	3	A
V <sub>APC</sub> voltage	V <sub>APC</sub>	6	V
Input power	Pin	20	mW
Operating case temperature	Tc (op)	-30 to +100	°C
Storage temperature	Tstg	-30 to +100	°C
Output power	Pout	3	W

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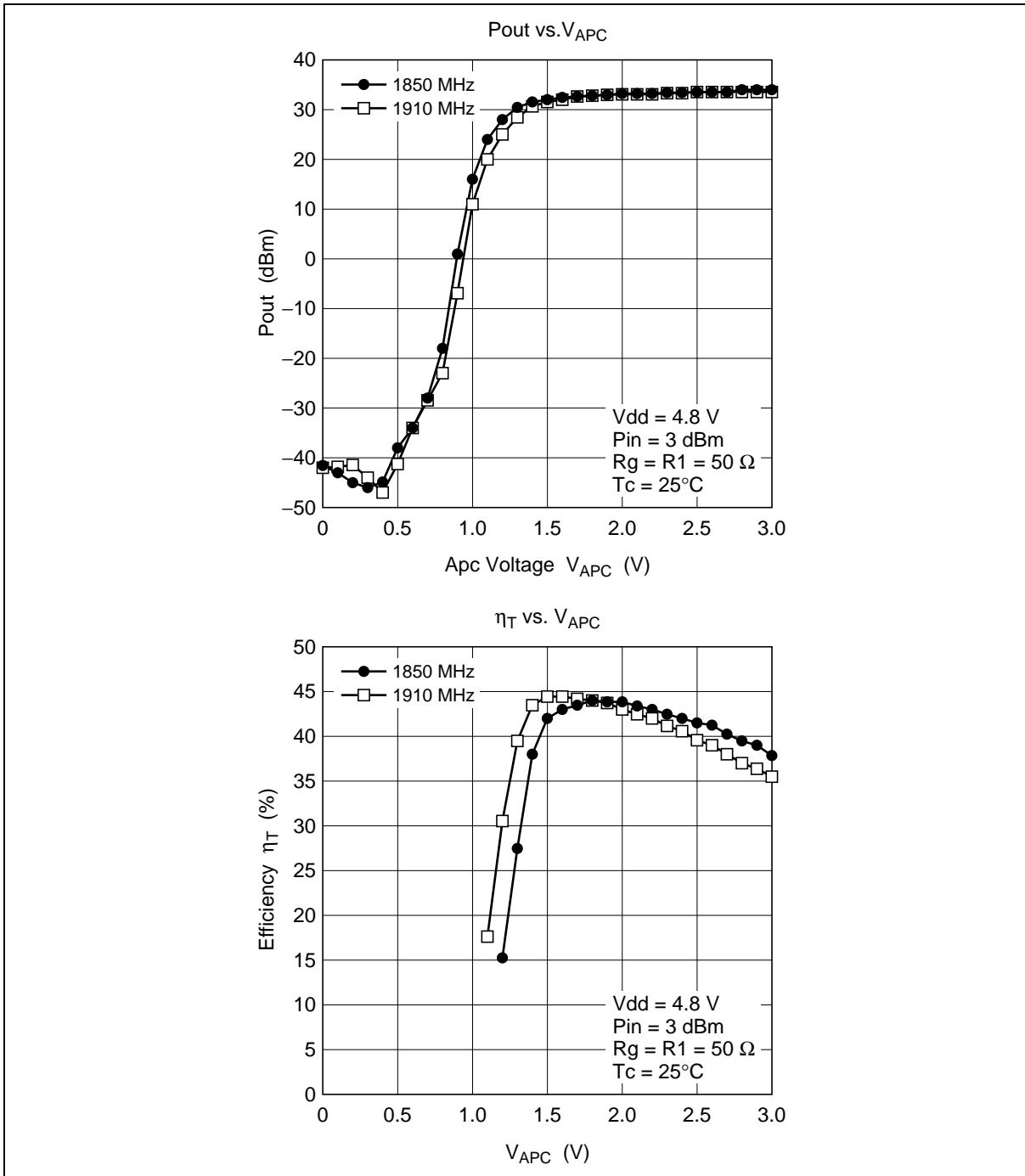
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### Electrical Characteristics (Tc = 25°C)

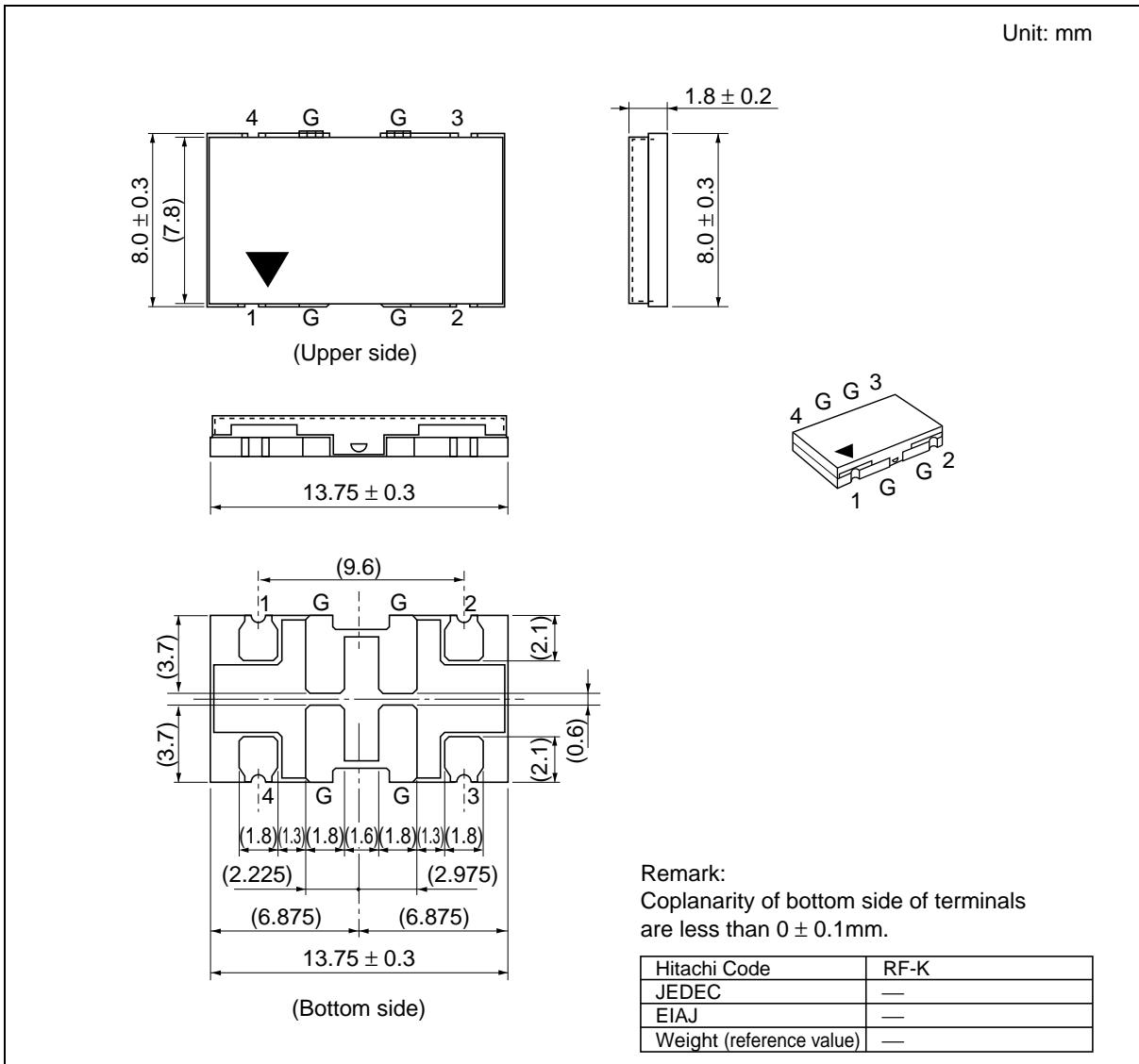
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	1850	—	1910	MHz	
Control voltage range	V <sub>APC</sub>	0.5	—	3	V	
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 11 V, V <sub>APC</sub> = 0 V
Total efficiency	η <sub>T</sub>	37	45	—	%	Pin = 2 mW, V <sub>DD</sub> = 4.8 V, Pout = 1.8 W (at APC controlled), R <sub>L</sub> = R <sub>g</sub> = 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 <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 3 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	1.2	1.5	—	W	Pin = 2 mW, V <sub>DD</sub> = 4.3 V, V <sub>APC</sub> = 3 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω, Tc = 80°C
Isolation	—	—	-40	-30	dBm	Pin = 2 mW, V <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 0.5 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	0.9	2	μs	Pin = 2 mW, V <sub>DD</sub> = 4.8 V, Pout = 1.8 W, R <sub>L</sub> = R <sub>g</sub> = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 2 mW, V <sub>DD</sub> = 6 V, Ids ≤ 0.9 A (only pulsed), Pout ≤ 1.8 W (at APC controlled), R <sub>g</sub> = 50 Ω, t = 20 sec., Tc = 25°C, Output VSWR = 10 : 1 All phases

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## Package Dimensions



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# 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 Straße 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

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