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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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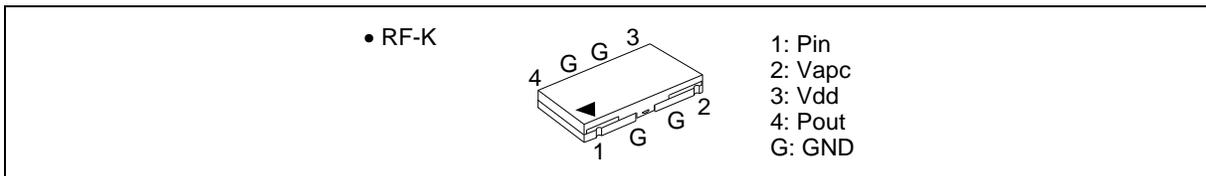
## Application

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



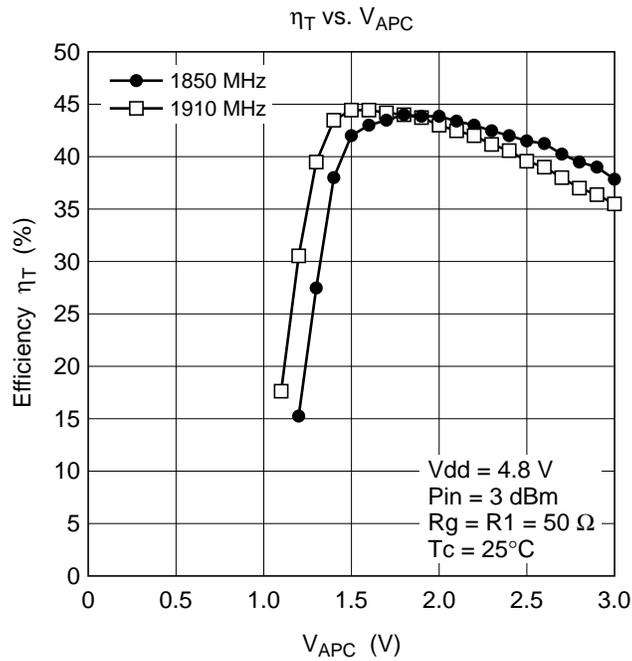
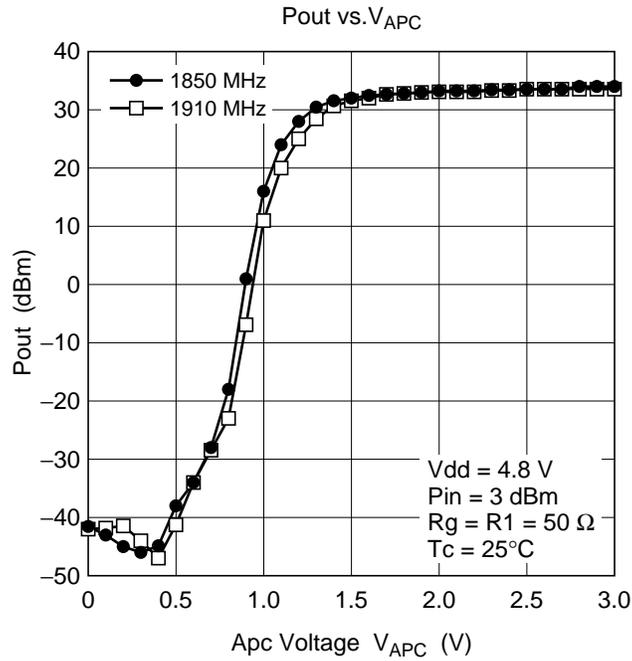
## Absolute Maximum Ratings (Tc = 25°C)

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

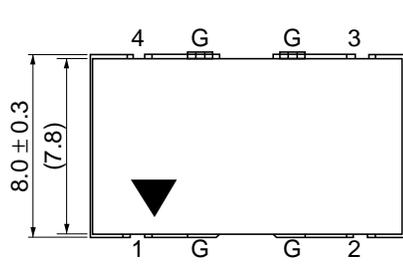
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	1850	—	1910	MHz	
Control voltage range	V <sub>APC</sub>	0.5	—	3	V	
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 11 V, V <sub>APC</sub> = 0 V
Total efficiency	η <sub>T</sub>	37	45	—	%	Pin = 2 mW, V <sub>DD</sub> = 4.8 V, 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



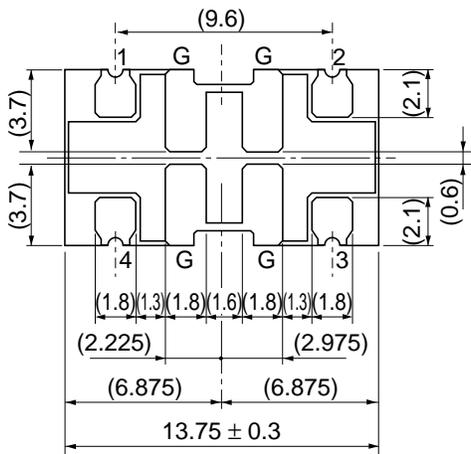
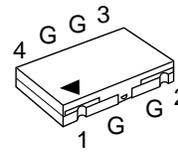
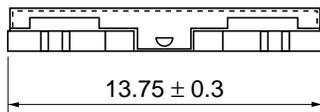
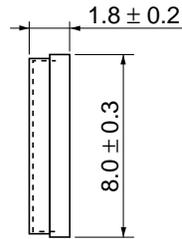
# PF0415A

## Package Dimensions

Unit: mm



(Upper side)



(Bottom side)

Remark:  
Coplanarity of bottom side of terminals are less than  $0 \pm 0.1$  mm.

Hitachi Code	RF-K
JEDEC	—
EIAJ	—
Weight (reference value)	—

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