

# PF01411B

MOS FET Power Amplifier Module  
for E-GSM Handy Phone

# HITACHI

ADE-208-434B (Z)  
3rd Edition  
Nov. 1997

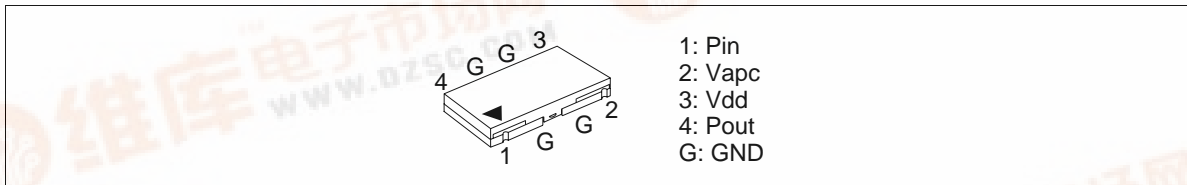
## Application

- For E-GSM class4 880 to 915 MHz
- For 3.5 V nominal battery use

## Features

- High gain 3stage amplifier : 0 dBm input
- Lead less thin & Small package : 2 mm Max, 0.2cc
- High efficiency : 45% Typ at 35.5 dBm
- Wide gain control range : 70 dB Typ

## Pin Arrangement



## Absolute Maximum Ratings (T<sub>c</sub> = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V <sub>DD</sub>	8	V
Supply current	I <sub>DD</sub>	3	A
V <sub>APC</sub> voltage	V <sub>APC</sub>	4	V
Input power	P <sub>in</sub>	10	mW
Operating case temperature	T <sub>c</sub> (op)	-30 to +100	°C
Storage temperature	T <sub>stg</sub>	-30 to +100	°C
Output power	P <sub>out</sub>	5	W

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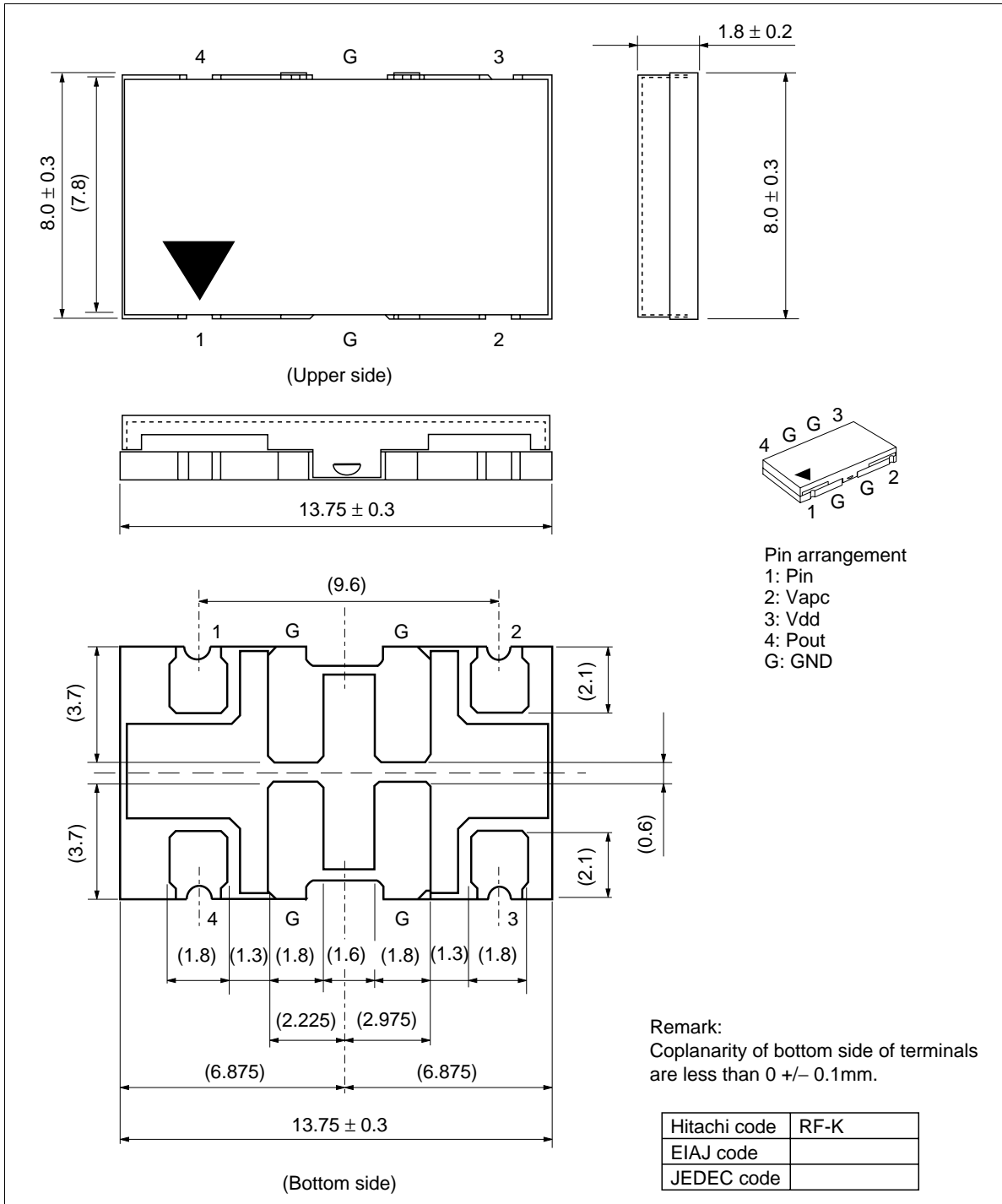
**Electrical Characteristics (Tc = 25°C)**

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	880	—	915	MHz	
Control voltage range	V <sub>APC</sub>	0.5	—	2.2	V	
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 8V, V <sub>APC</sub> = 0V
Total efficiency	η <sub>T</sub>	40	45	—	%	Pin = 0dBm, V <sub>DD</sub> = 3.5V,
2nd harmonic distortion	2nd H.D.	—	-45	-35	dBc	Pout = 35.5dBm, Vapc = control
3rd harmonic distortion	3rd H.D.	—	-45	-35	dBc	R <sub>L</sub> = R <sub>g</sub> = 50Ω, Tc = 25°C
Input VSWR	VSWR (in)	—	1.5	3	—	
Output power (1)	Pout (1)	35.5	36.0	—	dBm	Pin = 0dBm, V <sub>DD</sub> = 3.5V, V <sub>APC</sub> = 2.2V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, Tc = 25°C
Output power (2)	Pout (2)	33.5	34.2	—	dBm	Pin = 0dBm, V <sub>DD</sub> = 3.0V, V <sub>APC</sub> = 2.2V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, Tc = 85°C
Isolation	—	—	-40	-36	dBm	Pin = 0dBm, V <sub>DD</sub> = 3.5V, V <sub>APC</sub> = 0.5V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	μs	Pin = 0dBm, V <sub>DD</sub> = 3.5V, Pout = 0 to 35.5dBm R <sub>L</sub> = R <sub>g</sub> = 50Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 0dBm, V <sub>DD</sub> = 3 to 5.1V, Pout ≤ 35.5dBm, Vapc ≤ 2.2V GSM pulse. R <sub>g</sub> = 50Ω, Tc = 25°C, Output VSWR = 6 : 1 All phases
Load VSWR tolerance	—	No degradation			—	Pin = 0dBm, V <sub>DD</sub> = 3 to 5.1V, Pout ≤ 35.5dBm, Vapc ≤ 2.2V GSM pulse. R <sub>g</sub> = 50Ω, t = 20sec., Tc = 25°C, Output VSWR = 10 : 1 All phases

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Package Dimensions

Unit: mm



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