

# PF01410A

## MOS FET Power Amplifier Module for GSM Handy Phone

# HITACHI

ADE-208-424B (Z)  
Product Preview  
3rd. Edition  
November 1997

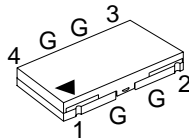
### Application

- For GSM class4 890 to 915 MHz

### Features

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

### Pin Arrangement



1: Pin  
2: V<sub>apc</sub>  
3: V<sub>dd</sub>  
4: P<sub>out</sub>  
G: GND

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

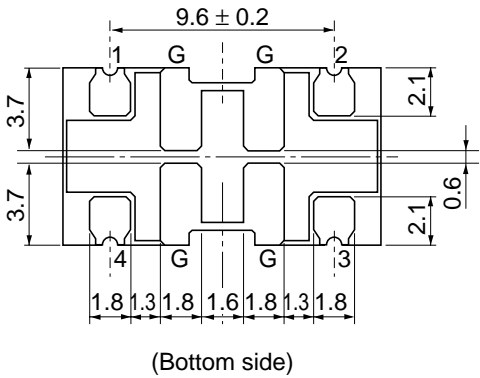
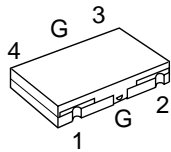
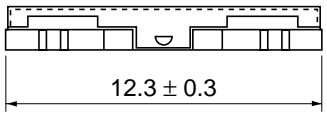
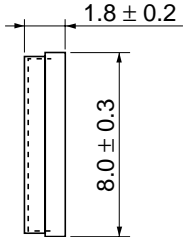
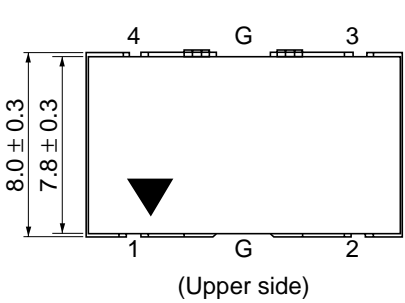
Item	Symbol	Rating	Unit
Supply voltage	V <sub>DD</sub>	10	V
Supply current	I <sub>DD</sub>	3	A
V <sub>APC</sub> voltage	V <sub>APC</sub>	4	V
Input power	P <sub>in</sub>	50	mW
Operating case temperature	T <sub>c</sub> (op)	-30 to +100	°C
Storage temperature	T <sub>stg</sub>	-30 to +100	°C
Output power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

**Electrical Characteristics (T<sub>c</sub> = 25°C)**

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	—
Control voltage range	V <sub>APC</sub>	0.1	—	2.5	V	—
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 10 V, V <sub>APC</sub> = 0 V
Total efficiency	η <sub>T</sub>	38	45	—	%	Pin = +8 dBm, V <sub>DD</sub> = 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 <sub>L</sub> = R <sub>g</sub> = 50Ω, T <sub>c</sub> = 25°C
Input VSWR	VSWR (in)	—	1.5	3.0	—	
Output power (1)	Pout (1)	2.8	3.3	—	W	Pin = +8 dBm, V <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 2.5 V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, T <sub>c</sub> = 25°C
Output power (2)	Pout (2)	1.5	1.8	—	W	Pin = +8 dBm, V <sub>DD</sub> = 4 V, V <sub>APC</sub> = 2.5 V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, T <sub>c</sub> = 85°C
Isolation	—	—	-35	-20	dBm	Pin = +12.5 dBm, V <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 0.1 V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, T <sub>c</sub> = 25°C
Switching time	t <sub>r</sub> , t <sub>f</sub>	—	1	2	μs	Pin = +8 dBm, V <sub>DD</sub> = 4.8 V, R <sub>L</sub> = R <sub>g</sub> = 50Ω, T <sub>c</sub> = 25°C Time from Pout = -10 to +34.5 dBm
Stability	—	No parasitic oscillation			—	Pin = +8 dBm, V <sub>DD</sub> = 7 V, Pout ≤ 2.8 W (At APC controlled), R <sub>g</sub> = 50 Ω, T <sub>c</sub> = 25°C, Output VSWR = 8 : 1 All phases

Package Dimensions

Unit: mm



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

Hitachi Code	RF-K1
JEDEC	
EIAJ	
Weight (reference value)	

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