HITACHI

PF0415B

MOS FET Power Amplifier Module
for PCS 1900 Handy Phone

HITACHI

ADE-208-474B (Z)
3rd. Edition
October 1996

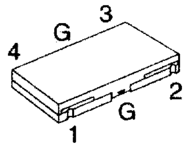
Application

For PCS 1900 class1 1850 to 1910MHz.

Features

- 3stage amplifier: 0dBm input
- Small package: 0.2cc
- High efficiency: 35% typ. at 1.8W
- Wide gain control range: 90dB typ.
- Low voltage operation: 3.6V

Pin Arrangement



1: Pin
2: Vapc
3: Vdd
4: Pout
G: GND

Absolute Maximum Ratings (Tc = 25°C)

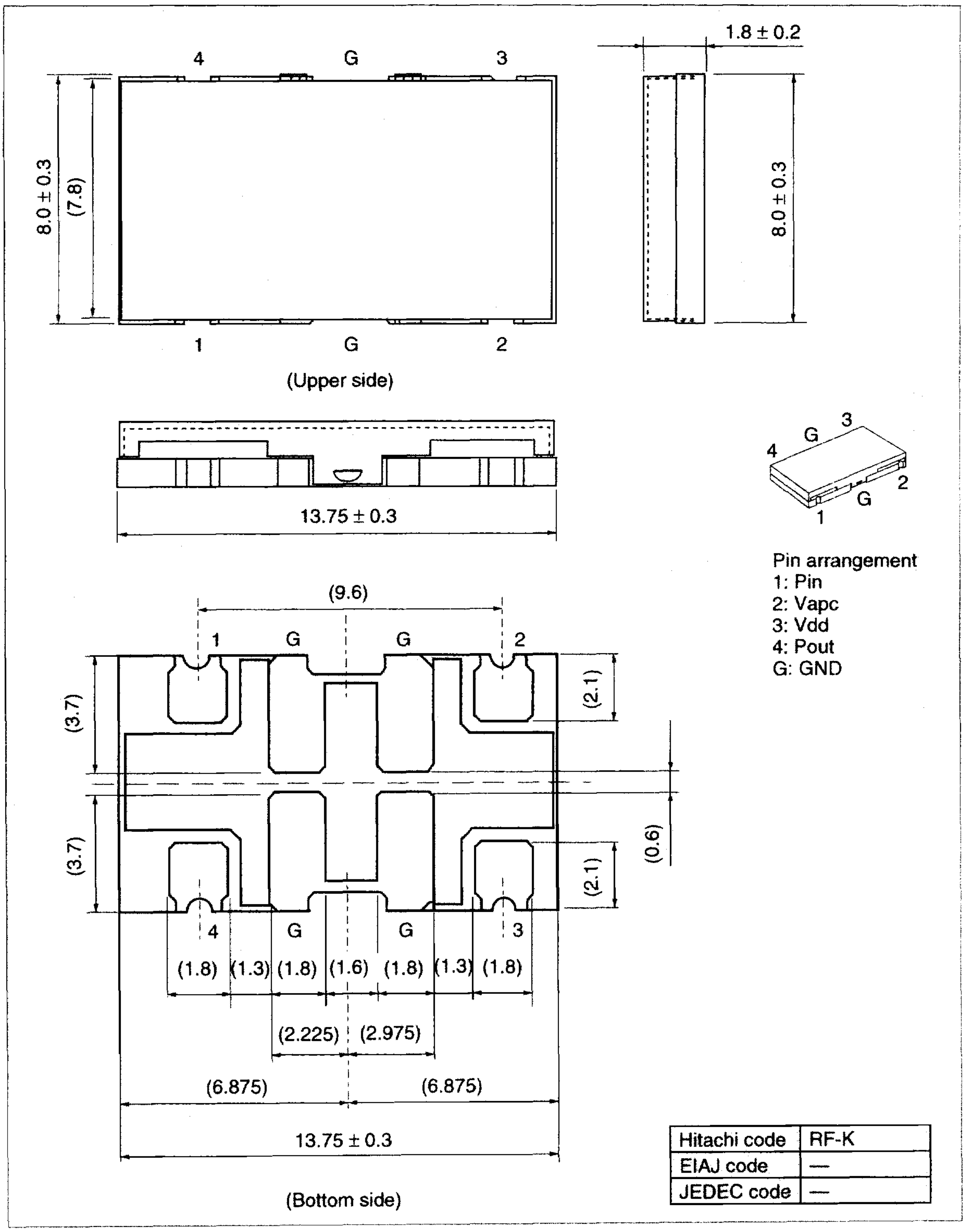
Item	Symbol	Rating	Unit
Supply voltage	VDD	8	V
Supply current	IDD	2	A
VAPC voltage	VAPC	3	V
Input power	Pin	10	mW
Operating case temperature	Tc (op)	–30 to +100	°C
Storage temperature	Tstg	–30 to +100	°C
Output power	Pout	3	W

Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	1850	—	1910	MHz	
Control voltage range	VAPC	0.5	—	2.2	V	
Drain cutoff current	IDS	—	—	100	µA	VDD = 8V, VAPC = 0V
Drain cutoff current	IDS	—	—	10	µA	VDD = 6V, VAPC = 0V
Total efficiency	ηT	30	35	—	%	Pin = 1mW, VDD = 3.6V, Pout = 1.8W (at APC controlled), RL = Rg = 50Ω, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	-40	–30	dBc	
3rd harmonic distortion	3rd H.D.	—	-40	–30	dBc	
Input VSWR	VSWR (in)	—	1.5	3	—	
Output power (1)	Pout (1)	1.8	2.0	—	W	Pin = 1mW, VDD = 3.6V, VAPC = 2.2V, RL = Rg = 50Ω, Tc = 25°C
Output power (2)	Pout (2)	1.2	1.5	—	W	Pin = 1mW, VDD = 3.0V, VAPC = 2.2V, RL = Rg = 50Ω. Tc = 85°C
Isolation	—	—	-40	–30	dBm	Pin = 1mW, VDD =3.6V, VAPC = 0.5V, RL = Rg = 50Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	µs	Pin = 1mW, VDD = 3.6V, Pout = 1.8W, RL = Rg = 50Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 1mW, VDD = 5V, Pout ≤ 1.8W (at APC controlled), Rg = 50Ω, t = 20sec., Tc = 25°C, Output VSWR = 12 : 1 All phases
Ruggedness	—	No parasitic oscillation & No degradation			—	Pin = 1mW, VDD = 5V, Pout ≤ 1.8W (at APC controlled), Rg = 50Ω, t = 20sec., Tc = 25°C, Output VSWR = 20 : 1 All phases

Package Dimensions

Unit: mm



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Hitachi code	RF-K
EIAJ code	—
JEDEC code	—