PF0414B

MOS FET Power Amplifier Module
for DCS 1800 Handy Phone

HITACHI

ADE-208-432C (Z)
4th Edition
December 1997

Application

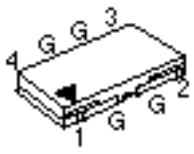
For DCS 1800 class1 1710 to 1785 MHz.

Features

- 3stage amplifier : 0 dBm input
- Lead less thin & small package : 2 mm Max & 0.2cc
- High efficiency : 40% Typ at 32.5 dBm
- Wide gain control range : 70 dB Typ
- Low voltage operation : 3.5 V

Pin Arrangement

▪ RF-K



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

Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	8	V
Supply current	I_{DD}	2	A
V_{APC} voltage	V_{APC}	4	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

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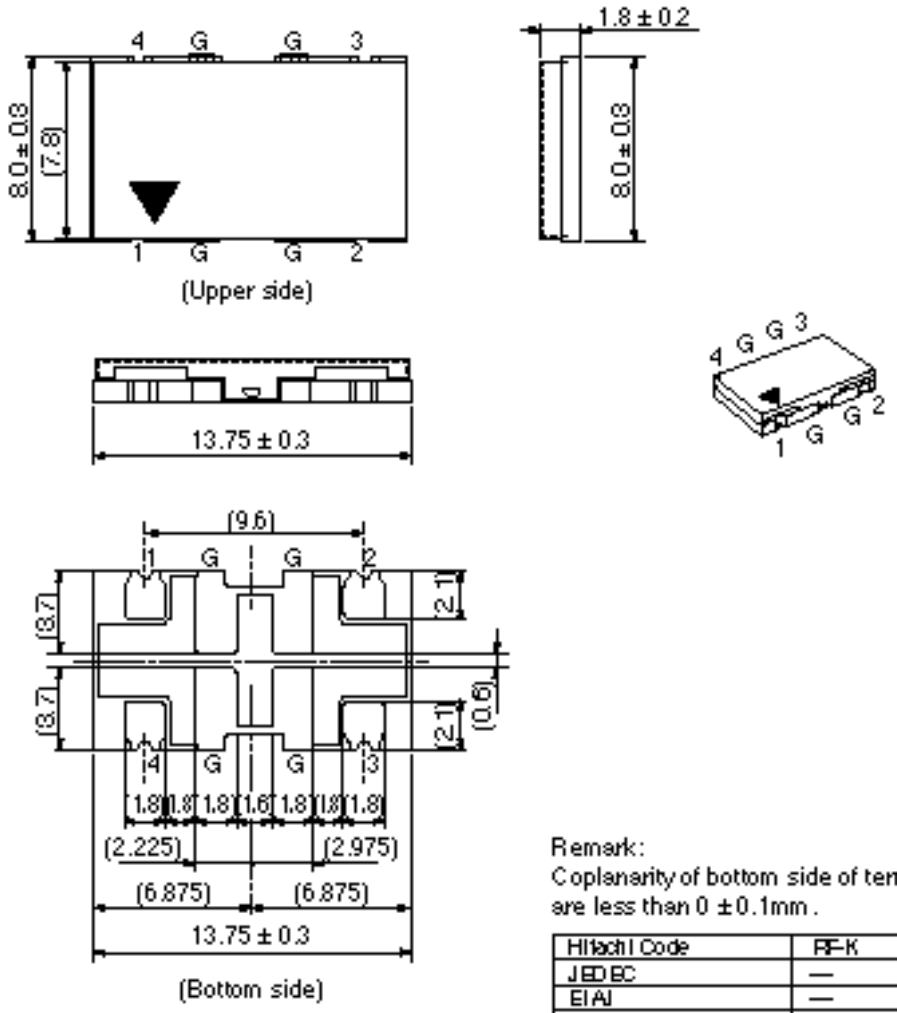
Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	1710	—	1785	MHz	
Control voltage range	V_{APC}	0.5	—	2.2	V	
Drain cutoff current	I_{DS}	—	—	100	µA	V_{DD} = 8 V, V_{APC} = 0 V
Total efficiency	η_T	35	40	—	%	Pin = 0 dBm, V_{DD} = 3.5 V, Pout = 32.5 dBm (at APC controlled), R_L = Rg = 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)	32.5	33.0	—	dBm	Pin = 0 dBm, V_{DD} = 3.5 V, V_{APC} = 2.2 V, R_L = Rg = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	31	31.5	—	dBm	Pin = 0 dBm, V_{DD} = 3.0 V, V_{APC} = 2.2 V, R_L = Rg = 50 Ω, Tc = 85°C
Isolation	—	—	–36	–33	dBm	Pin = 0 dBm, V_{DD} = 3.5 V, V_{APC} = 0.5 V, R_L = Rg = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	µs	Pin = 0 dBm, V_{DD} = 3.5 V, Pout = 32.5 dBm, R_L = Rg = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 0 dBm, V_{DD} = 3 to 5.1 V, Pout ≤ 32.5 dBm (at APC controlled), Rg = 50 Ω, t = 20 sec., Tc = 25°C, Output VSWR = 6 : 1 All phases

Package Dimensions

Unit: mm



Remark:
Coplanarity of bottom side of terminals are less than 0 ±0.1mm.

Hitachi Code	RF-K
JEDEC	—
EIAJ	—
Weight1 (reference value)	—

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