PF01412A

MOS FET Power Amplifier Module
for E-GSM Handy Phone

HITACHI

ADE-208-477B (Z)
3rd Edition
February 1, 1997

Application

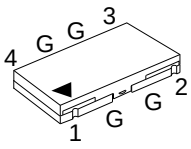
- For GSM class4 890 to 915 MHz
- For 5.5V nominal DC/DC converter use

Features

- High gain 3stage amplifier : 0 dBm input
- Lead less thin & Small package : 2 mm Max, 0.2cc
- High efficiency : 45% Typ at 3.8 W
- Wide gain control range : 90 dB Typ

Pin Arrangement

• RF-K



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

Absolute Maximum Ratings (Tc = 25°C)

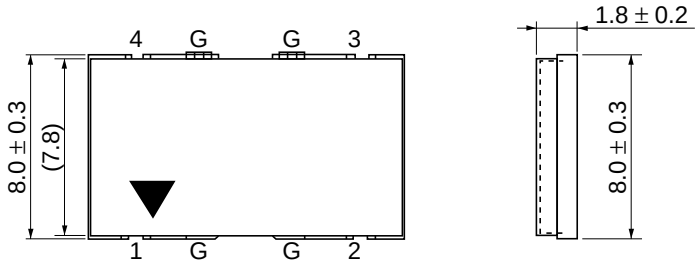
Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	10	V
Supply current	I_{DD}	3	A
V_{APC} voltage	V_{APC}	4	V
Input power	Pin	10	mW
Operating case temperature	Tc (op)	–30 to +100	°C
Storage temperature	Tstg	–30 to +100	°C
Output power	Pout	6	W

Electrical Characteristics (Tc = 25°C)

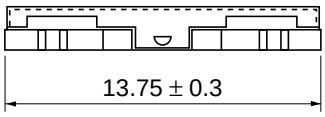
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	
Control voltage range	V_{APC}	0.5	—	3.0	V	
Drain cutoff current	I_{DS}	—	—	100	μA	V_{DD} = 10 V, V_{APC} = 0 V
Total efficiency	η_T	40	45	—	%	Pin = 1 mW, V_{DD} = 5.5 V,
2nd harmonic distortion	2nd H.D.	—	–45	–35	dBc	Pout = 3.8 W, Vapc = controlled
3rd harmonic distortion	3rd H.D.	—	–45	–35	dBc	R_L = Rg = 50 Ω, Tc = 25°C
Input VSWR	VSWR (in)	—	1.5	3	—	
Output power (1)	Pout (1)	3.8	4.5	—	W	Pin = 1 mW, V_{DD} = 5.5 V, V_{APC} = 3.0 V, R_L = Rg = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	2.5	3.2	—	W	Pin = 1 mW, V_{DD} = 5.0 V, V_{APC} = 3.0 V, R_L = Rg = 50 Ω, Tc = 80°C
Isolation	—	—	–50	–40	dBm	Pin = 1 mW, V_{DD} = 5.5 V, V_{APC} = 0.5 V, R_L = Rg = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	μs	Pin = 1 mW, V_{DD} = 5.5 V, Pout = 3.8 W, R_L = Rg = 50 Ω, Tc = 25°C
Stability & Load VSWR tolerance	—	No parasitic oscillation & No degradation			—	Pin = 1 mW, V_{DD} = 5 to 6 V, Pout ≤ 3.8 W, Vapc ≤ 3 V GSM pulse. Rg = 50 Ω, t = 20 sec., Tc = 25°C, Output VSWR = 6 : 1 All phases

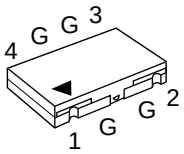
Package Dimensions

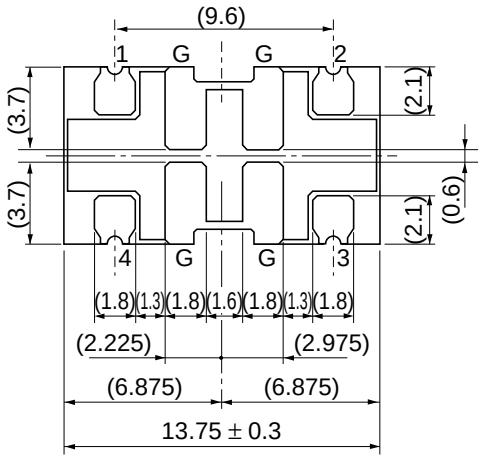
Unit: mm



(Upper side)







(Bottom side)

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

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

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