PF01410A

MOS FET Power Amplifier Module
for GSM Handy Phone

HITACHI

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

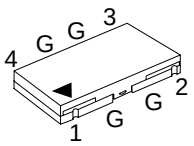
Application

- 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 µsec

Pin Arrangement



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	50	mW
Operating case temperature	Tc (op)	–30 to +100	°C
Storage temperature	Tstg	–30 to +100	°C
Output power	Pout	4	W

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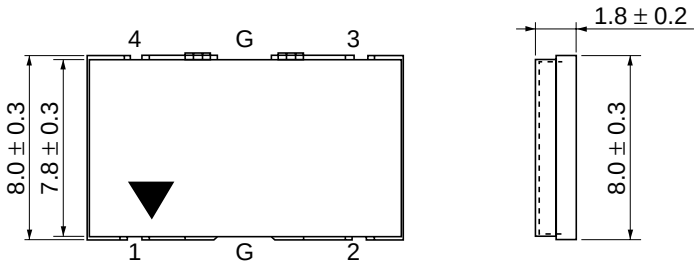
Electrical Characteristics (Tc = 25°C)

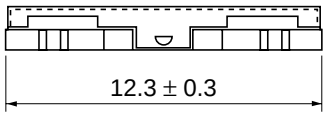
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	—
Control voltage range	V_{APC}	0.1	—	2.5	V	—
Drain cutoff current	I_{DS}	—	—	100	μA	V_{DD} = 10 V, V_{APC} = 0 V
Total efficiency	η_T	38	45	—	%	Pin = +8 dBm, V_{DD} = 4.8 V, Pout = 2.8 W (At APC controlled) R_L = Rg = 50Ω, Tc = 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	3.0	—	
Output power (1)	Pout (1)	2.8	3.3	—	W	Pin = +8 dBm, V_{DD} = 4.8 V, V_{APC} = 2.5 V, R_L = Rg = 50Ω, Tc = 25°C
Output power (2)	Pout (2)	1.5	1.8	—	W	Pin = +8 dBm, V_{DD} = 4 V, V_{APC} = 2.5 V, R_L = Rg = 50Ω, Tc = 85°C
Isolation	—	—	–35	–20	dBm	Pin = +12.5 dBm, V_{DD} = 4.8 V, V_{APC} = 0.1 V, R_L = Rg = 50Ω, Tc = 25°C
Switching time	t_r, t_f	—	1	2	μs	Pin = +8 dBm, V_{DD} = 4.8 V, R_L = Rg = 50Ω, Tc = 25°C Time from Pout = –10 to +34.5 dBm
Stability	—	No parasitic oscillation			—	Pin = +8 dBm, V_{DD} = 7 V, Pout ≤ 2.8 W (At APC controlled), Rg = 50 Ω, Tc = 25°C, Output VSWR = 8 : 1 All phases

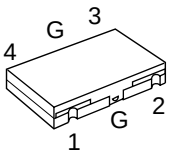
Package Dimensions

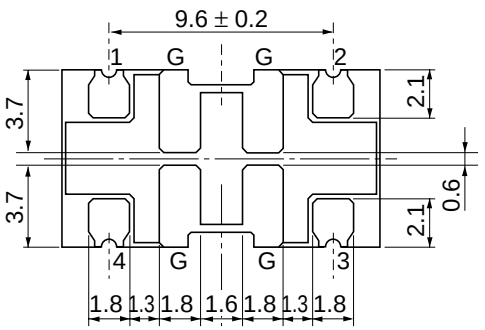
Unit: mm



(Upper side)







(Bottom side)

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

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

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