
PF01410A

MOS FET Power Amplifier Module for GSM Handy Phone

HITACHI

ADE-208-424B (Z)
Product Preview, 3rd Edition
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Application

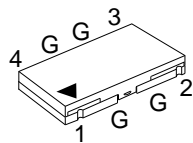
- For GSM class4 890 to 915 MHz

Features

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

Pin Arrangement

- RF-K1



1: Pin
2: V_{apc}
3: V_{dd}
4: P_{out}
G: GND

Absolute Maximum Ratings (T_c = 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	P _{in}	50	mW
Operating case temperature	T _c (op)	-30 to +100	°C
Storage temperature	T _{stg}	-30 to +100	°C
Output power	P _{out}	4	W

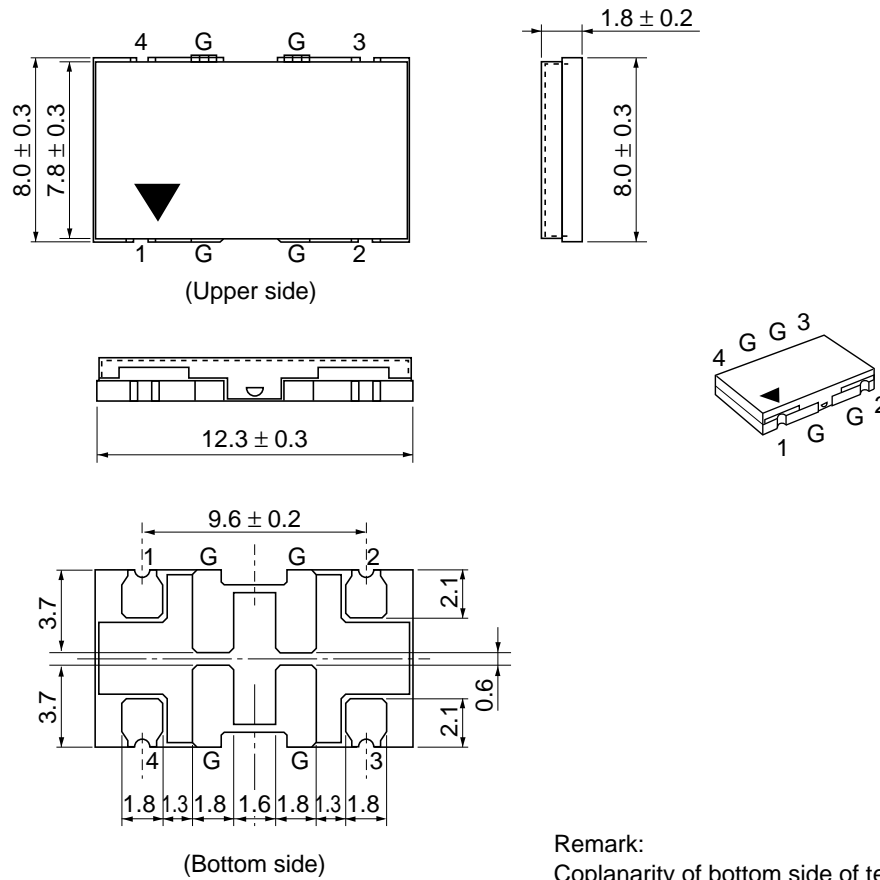
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Electrical Characteristics (Tc = 25°C)

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,
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 _L = R _g = 50Ω, Tc = 25°C
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 = R _g = 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 = R _g = 50Ω, Tc = 85°C
Isolation	—	—	−35	−20	dBm	Pin = +12.5 dBm, V _{DD} = 4.8 V, V _{APC} = 0.1 V, R _L = R _g = 50Ω, Tc = 25°C
Switching time	t _r , t _f	—	1	2	μs	Pin = +8 dBm, V _{DD} = 4.8 V, R _L = R _g = 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), R _g = 50 Ω, Tc = 25°C, Output VSWR = 8 : 1 All phases

Package Dimensions

Unit: mm



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

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

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