
PF01411B

MOS FET Power Amplifier Module for E-GSM Handy Phone

HITACHI

ADE-208-434B (Z)
3rd Edition
November 1997

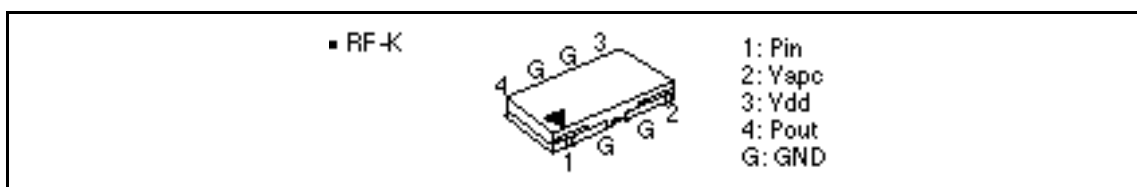
Application

- For E-GSM class4 880 to 915 MHz
- For 3.5 V nominal battery use

Features

- High gain 3stage amplifier : 0 dBm input
- Lead less thin & Small package : 2 mm Max, 0.2cc
- High efficiency : 45% Typ at 35.5 dBm
- Wide gain control range : 70 dB Typ

Pin Arrangement



Absolute Maximum Ratings (Tc = 25°C)

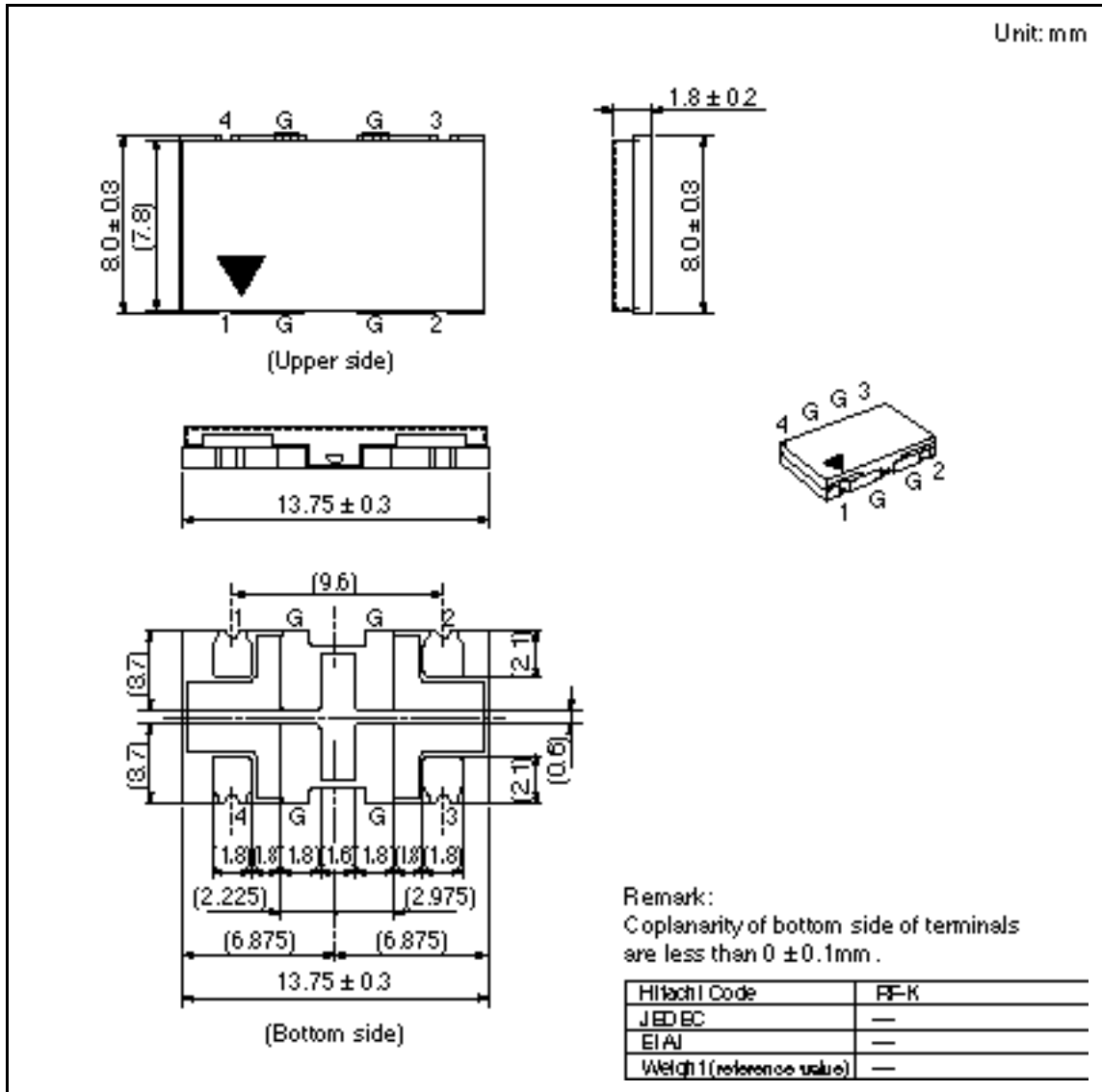
Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	8	V
Supply current	I _{DD}	3	A
V _{APC} voltage	V _{APC}	4	V
Input power	Pin	10	mW
Operating case temperature	Tc (op)	-30 to +100	°C
Storage temperature	Tstg	-30 to +100	°C
Output power	Pout	5	W

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Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	880	—	915	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	T	40	45	—	%	Pin = 0 dBm, V _{DD} = 3.5 V,
2nd harmonic distortion	2nd H.D.	—	-45	-35	dBc	Pout = 35.5 dBm,
3rd harmonic distortion	3rd H.D.	—	-45	-35	dBc	Vapc = controlled,
Input VSWR	VSWR (in)	—	1.5	3	—	R _L = R _g = 50 Ω, Tc = 25°C
Output power (1)	Pout (1)	35.5	36.0	—	dBm	Pin = 0 dBm, V _{DD} = 3.5 V, V _{APC} = 2.2 V, R _L = R _g = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	33.5	34.2	—	dBm	Pin = 0 dBm, V _{DD} = 3.0 V, V _{APC} = 2.2 V, R _L = R _g = 50 Ω, Tc = 85°C
Isolation	—	—	-40	-36	dBm	Pin = 0 dBm, V _{DD} = 3.5 V, V _{APC} = 0.5 V, R _L = R _g = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	μs	Pin = 0 dBm, V _{DD} = 3.5 V, Pout = 0 to 35.5 dBm, R _L = R _g = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation		—	—	Pin = 0 dBm, V _{DD} = 3 to 5.1 V, Pout = 35.5 dBm, Vapc = 2.2 V GSM pulse. R _g = 50 Ω, Tc = 25°C, Output VSWR = 6 : 1 All phases
Load VSWR tolerance	—	No degradation		—	—	Pin = 0 dBm, V _{DD} = 3 to 5.1 V, Pout = 35.5 dBm, Vapc = 2.2 V GSM pulse. R _g = 50 Ω, t = 20 sec., Tc = 25°C, Output VSWR = 10 : 1 All phases

Package Dimensions



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