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# PF0414B

## MOS FET Power Amplifier Module for DCS 1800 Handy Phone

# HITACHI

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

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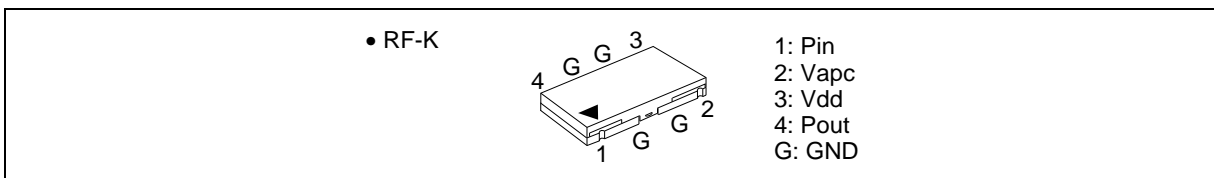
### Application

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



### Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V <sub>DD</sub>	8	V
Supply current	I <sub>DD</sub>	2	A
V <sub>APC</sub> voltage	V <sub>APC</sub>	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 <sub>APC</sub>	0.5	—	2.2	V	
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 8 V, V <sub>APC</sub> = 0 V
Total efficiency	η <sub>T</sub>	35	40	—	%	Pin = 0 dBm, V <sub>DD</sub> = 3.5 V, Pout = 32.5 dBm (at APC controlled), R <sub>L</sub> = 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 <sub>DD</sub> = 3.5 V, V <sub>APC</sub> = 2.2 V, R <sub>L</sub> = Rg = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	31	31.5	—	dBm	Pin = 0 dBm, V <sub>DD</sub> = 3.0 V, V <sub>APC</sub> = 2.2 V, R <sub>L</sub> = Rg = 50 Ω, Tc = 85°C
Isolation	—	—	−36	−33	dBm	Pin = 0 dBm, V <sub>DD</sub> = 3.5 V, V <sub>APC</sub> = 0.5 V, R <sub>L</sub> = Rg = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	1	2	μs	Pin = 0 dBm, V <sub>DD</sub> = 3.5 V, Pout = 32.5 dBm, R <sub>L</sub> = Rg = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 0 dBm, V <sub>DD</sub> = 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



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