PF01410A

MOS FET Power Amplifier Module for GSM Handy Phone

HITACHI

ADE-208-424B (Z) Product Preview, 3rd Edition November 1, 1997

Application

For GSM class4 890 to 915 MHz

Features

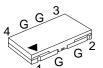
• 4.8 V operation 2 stage amplifier

• Small package

High efficiency: 45% Typ
High speed switching: 1 μsec

Pin Arrangement

• RF-K1



1: Pin

2: Vapc

4: Pout G: GND

Absolute Maximum Ratings (Tc = 25°C)

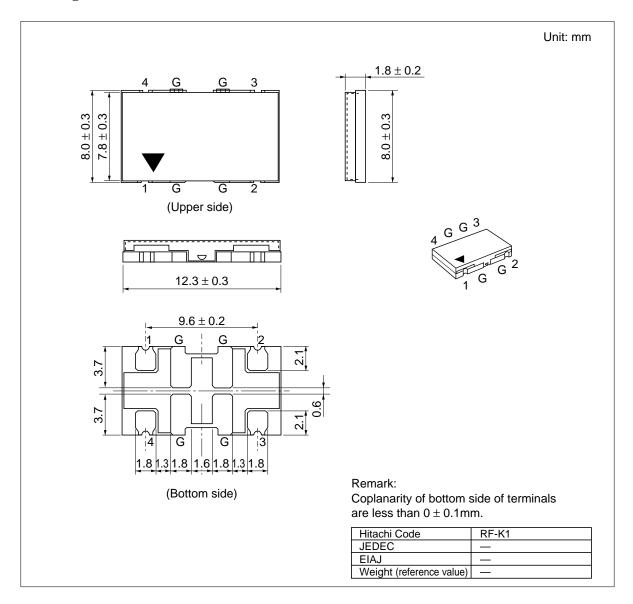
Item	Symbol	Rating	Unit	
Supply voltage	V_{DD}	10	V	
Supply current	I _{DD}	3	А	
V _{APC} voltage	V _{APC}	4	V	
Input power	Pin	50	mW	
Operating case temperature	Tc (op)	−30 to +100	°C	
Storage temperature	Tstg	-30 to +100	°C	
Output power	Pout	4	W	

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Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Тур	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	μΑ	$V_{DD} = 10 \text{ V}, V_{APC} = 0 \text{ V}$
Total efficiency	ητ	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	$R_L = Rg = 50\Omega$, $Tc = 25^{\circ}C$
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} = 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 = 50 Ω , Tc = 25°C Time from Pout = -10 to +34.5 dBm
Stability	_	No pa oscilla	rasitic ation		_	Pin = +8 dBm, V_{DD} = 7 V, Pout \leq 2.8 W (At APC controlled), Rg = 50 Ω , Tc = 25°C, Output VSWR = 8 : 1 All phases

Package Dimensions



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