PF0150
MOS FET Power Amplifier Module for GSM Handy Phone

HITACHI

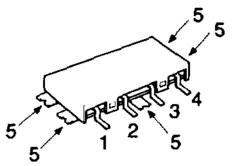
Preliminary
Rev. 0
Sep. 1993

Features

- Surface mounted small package 1 cc, 3 g with shielded cover.
- High speed switching: 1.2 µs Typ.
- Low voltage operation: 6 V
- Wide power control range: 77 dB Typ.

Pin Arrangement

- RF–E



1: Pin
2: V_{APC}
3: V_{DD}
4: Pout
5: GND

Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	12	V
Supply current	I_{DD}	2	A
APC voltage	V_{APC}	4	V
Input power	Pin	20	mW
Operating case temperature	Tc (op)	–30 to +100	°C
Storage temperature	Tstg	–30 to +100	°C

Electrical Characteristics (Tc = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	—
Drain cutoff current	I_{DS}	—	—	100	µA	V_{DD} = 12 V, V_{APC} = 0 V, Rg = R_L = 50 Ω
Total efficiency	η_T	30	42	—	%	Pin = 2 mW, V_{DD} = 6 V, Pout = 1.2 W (at APC controlled), Rg = R_L = 50 Ω, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	−45	−35	dB	
3rd harmonic distortion	3rd H.D.	—	−55	−35	dB	
Input VSWR	VSWR (in)	—	1.5	3.0	—	
Output power (1)	Pout (1)	1.5	2.0	—	W	Pin = 2 mW, V_{DD} = 6 V, V_{APC} = 4 V, Rg = R_L = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	0.8	1.2	—	W	Pin = 2 mW, V_{DD} = 5.2 V, V_{APC} = 4 V, Rg = R_L = 50 Ω, Tc = 90°C
Isolation	—	—	−45	−30	dBm	Pin = 2 mW, V_{DD} = 6 V, V_{APC} = 0.5 V, Rg = R_L = 50 Ω, Tc = 25°C
Switching time	—	—	1.2	2.0	µs	Pin = 2 mW, V_{DD} = 6 V, Pout = 1.2 W, Rg = R_L = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 2 mW, V_{DD} = 5.2 to 7.5 V, Pout = 1.2 W (at APC controlled), Rg = 50 Ω, t = 20 sec. Tc = 25°C, Output VSWR = 3 All phases

Package Dimension

Unit: mm

- RF-E