

PF0148

MOS FET Power Amplifier Module for GSM Handy Phone

HITACHI

ADE-208-323B (Z)
3rd. Edition
July 1996

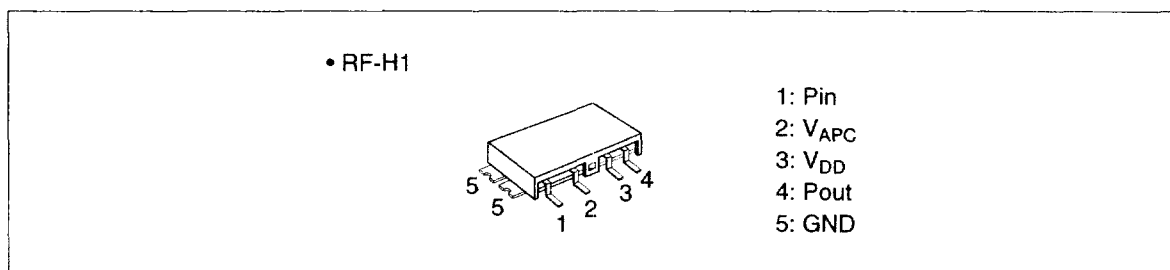
Application

For GSM class 4: 890 to 915 MHz

Features

- 2 stage amplifier
- Small package: 0.6 cc
- High efficiency: 45% Typ
- High speed switching: 0.9 μ sec

Pin Arrangement



Absolute Maximum Ratings (T_c = 25°C)

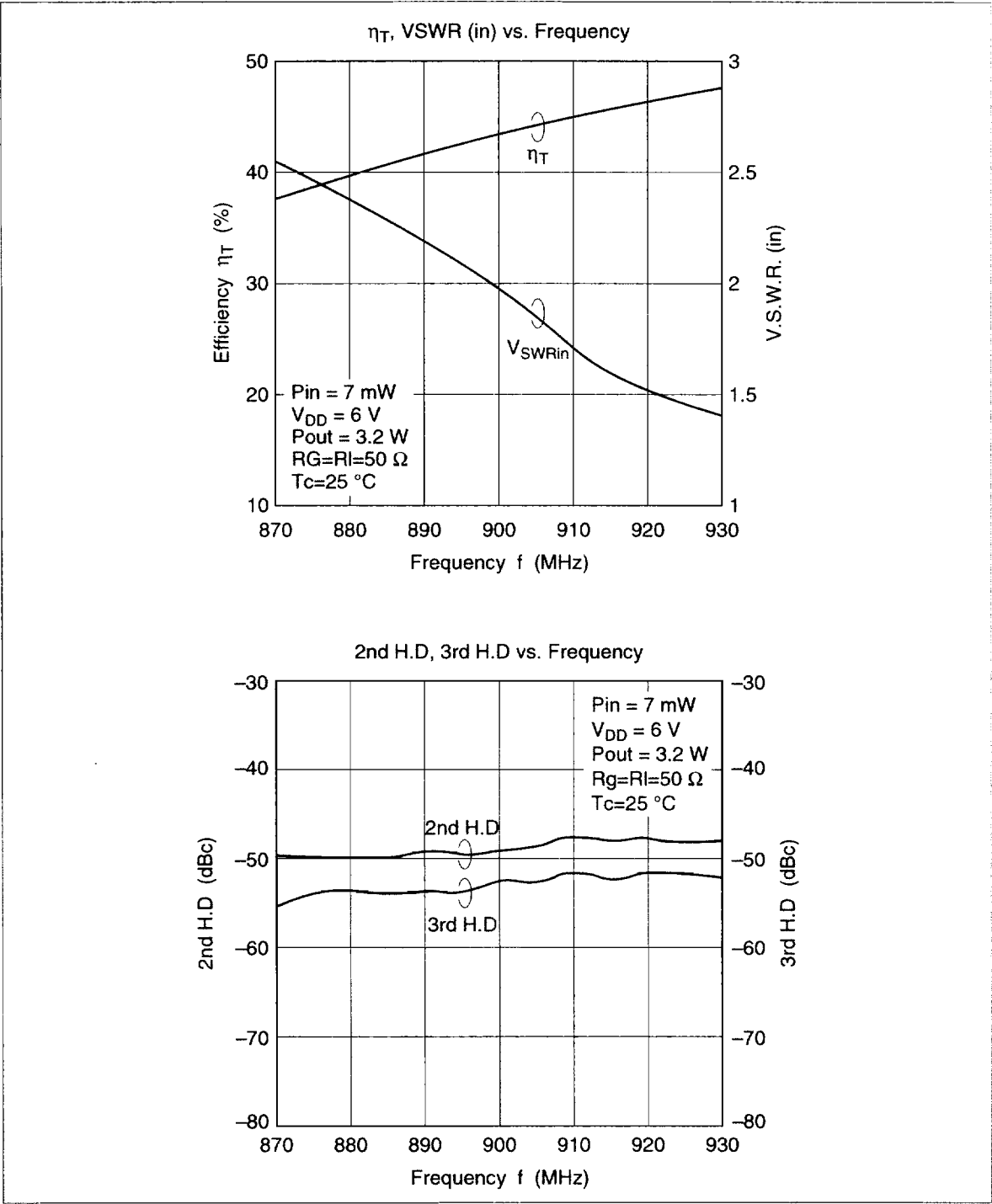
Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	10	V
Supply current	I _{DD}	3	A
V _{APC} voltage	V _{APC}	6	V
Input power	P _{in}	20	mW
Operating case temperature	T _c (op)	-30 to +100	°C
Storage temperature	T _{stg}	-30 to +100	°C
Output power	P _{out}	7	W

PF0148

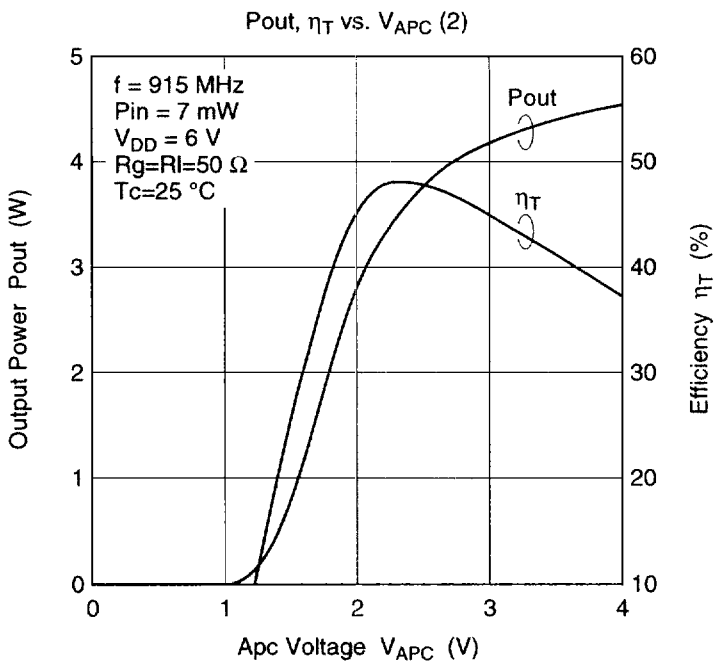
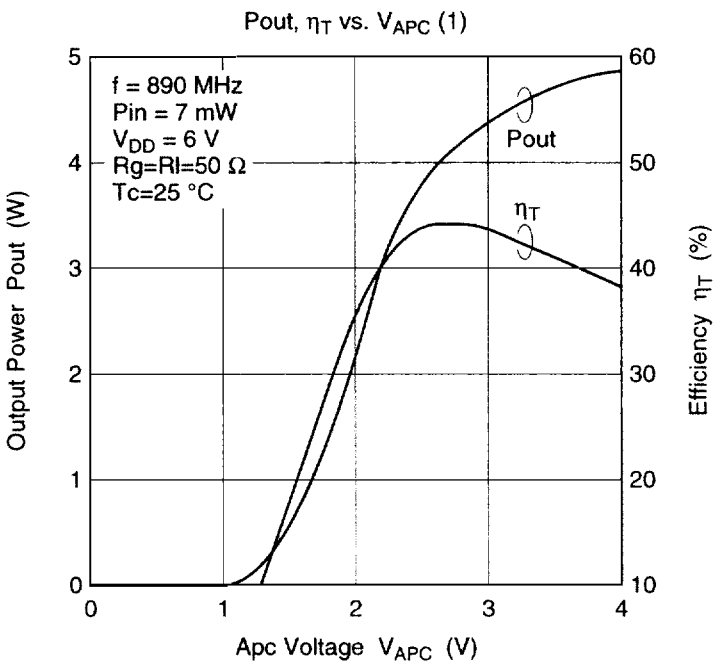
Electrical Characteristics (Tc = 25°C)

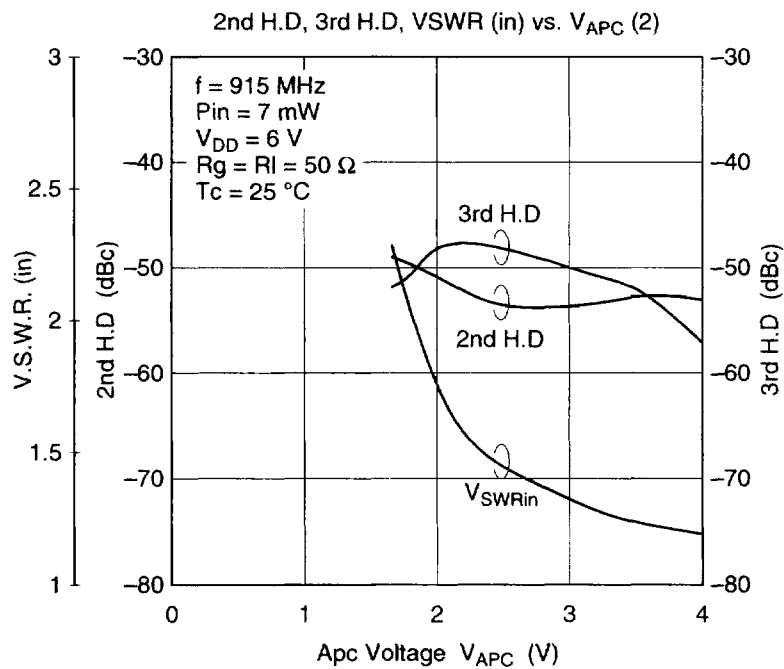
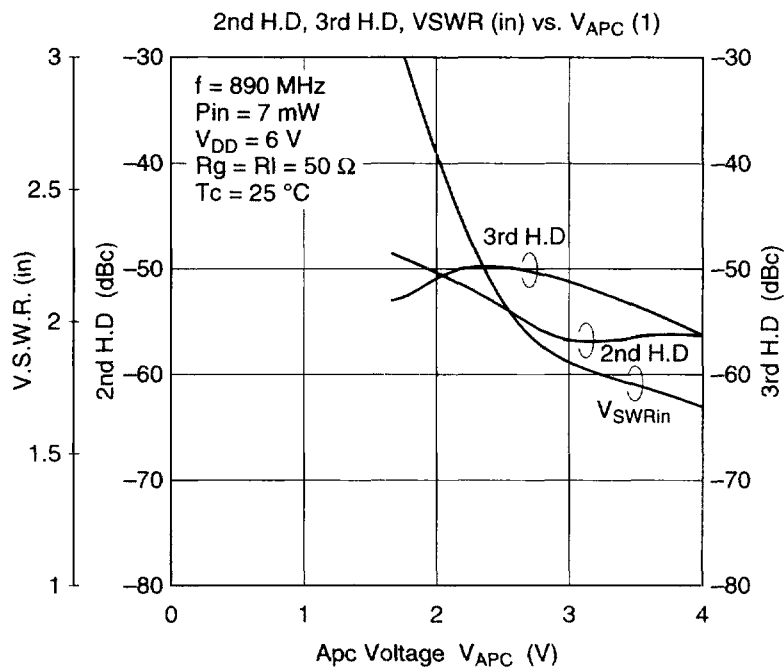
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	890	—	915	MHz	—
Control voltage range	VAPC	0	—	4.0	V	—
Drain cutoff current	IDS	—	—	100	μA	VDD = 10 V, VAPC = 0 V
Total efficiency	ηT	35	45	—	%	Pin = 7 mW, VDD = 6.0 V,
2nd harmonic distortion 2nd H.D.	—	—	−50	−40	dBc	Pout = 3.2 W (at APC controlled),
3rd harmonic distortion 3rd H.D.	—	—	−50	−40	dBc	RL = Rg = 50 Ω, Tc = 25°C
Input VSWR	VSWR (in)	—	2	3	—	—
Output power (1)	Pout (1)	3.2	3.8	—	W	Pin = 7 mW, VDD = 6.0 V, VAPC = 4.0 V, RL = Rg = 50 Ω, Tc = 25°C
Output power (2)	Pout (2)	2.4	2.8	—	W	Pin = 7 mW, VDD = 5.4 V, VAPC = 4.0 V, RL = Rg = 50 Ω, Tc = 80°C
Isolation	—	—	—	−10	dBm	Pin = 9 mW, VDD = 6.0 V, VAPC = 0 V, RL = Rg = 50 Ω, Tc = 25°C
Switching time	tr, tf	—	0.9	2	μs	Pin = 7 mW, VDD = 6.0 V, Pout = 3.2 W, RL = Rg = 50 Ω, Tc = 25°C
Stability	—	No parasitic oscillation			—	Pin = 7 mW, VDD = 7.5 V, Pout ≤ 3.2 W (at APC controlled), Rg = 50 Ω, Tc = 25°C, Output VSWR = 10:1 All phases

Characteristics Curve

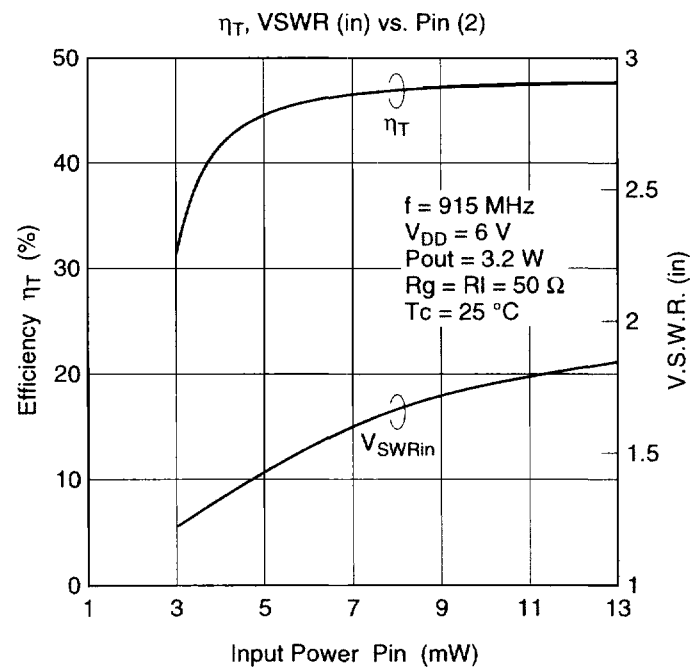
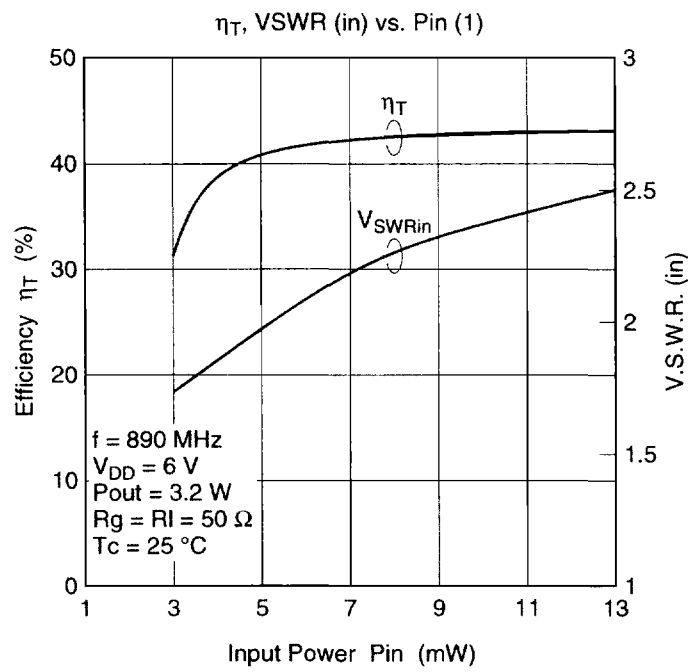


PF0148

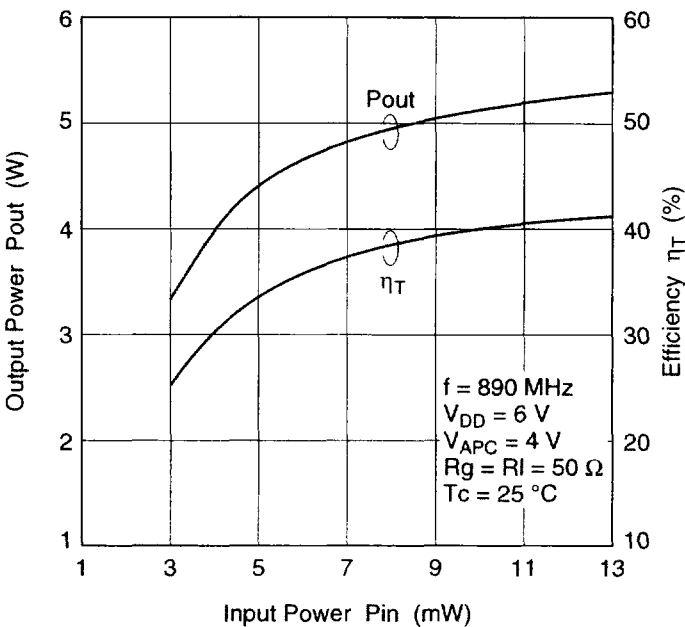




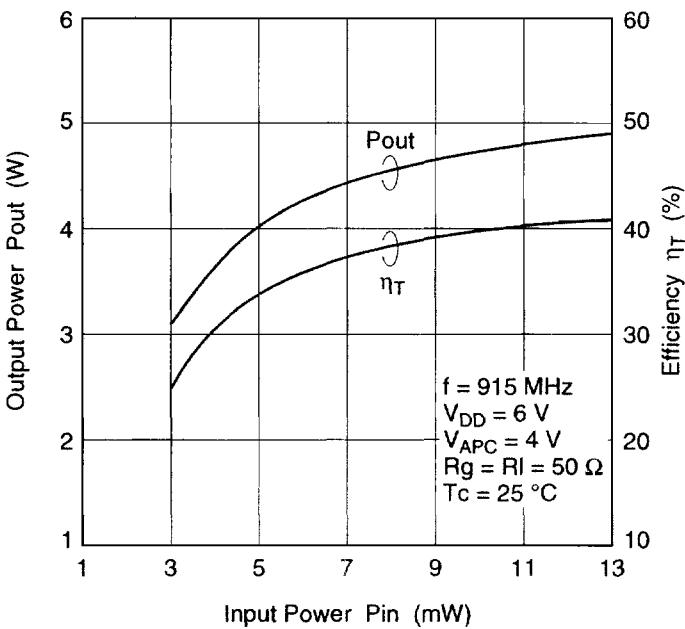
PF0148



Pout, η_T vs. Pin (1)



Pout, η_T vs. Pin (2)



PF0148

Package Dimensions

Unit: mm

