
PF0340A

MOS FET Power Amplifier Module for UHF Band

HITACHI

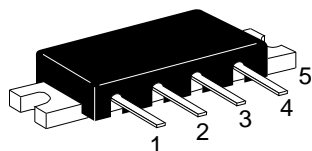
ADE-208-317B (Z)
3rd. Edition
July 1996

Features

- Small package: $30 \times 10 \times 5.9$ mm
- High efficiency: 43% Typ at 9.6 V
40% Typ at 4.8 V
- Low power control current: 150 μ A Typ

Pin Arrangement

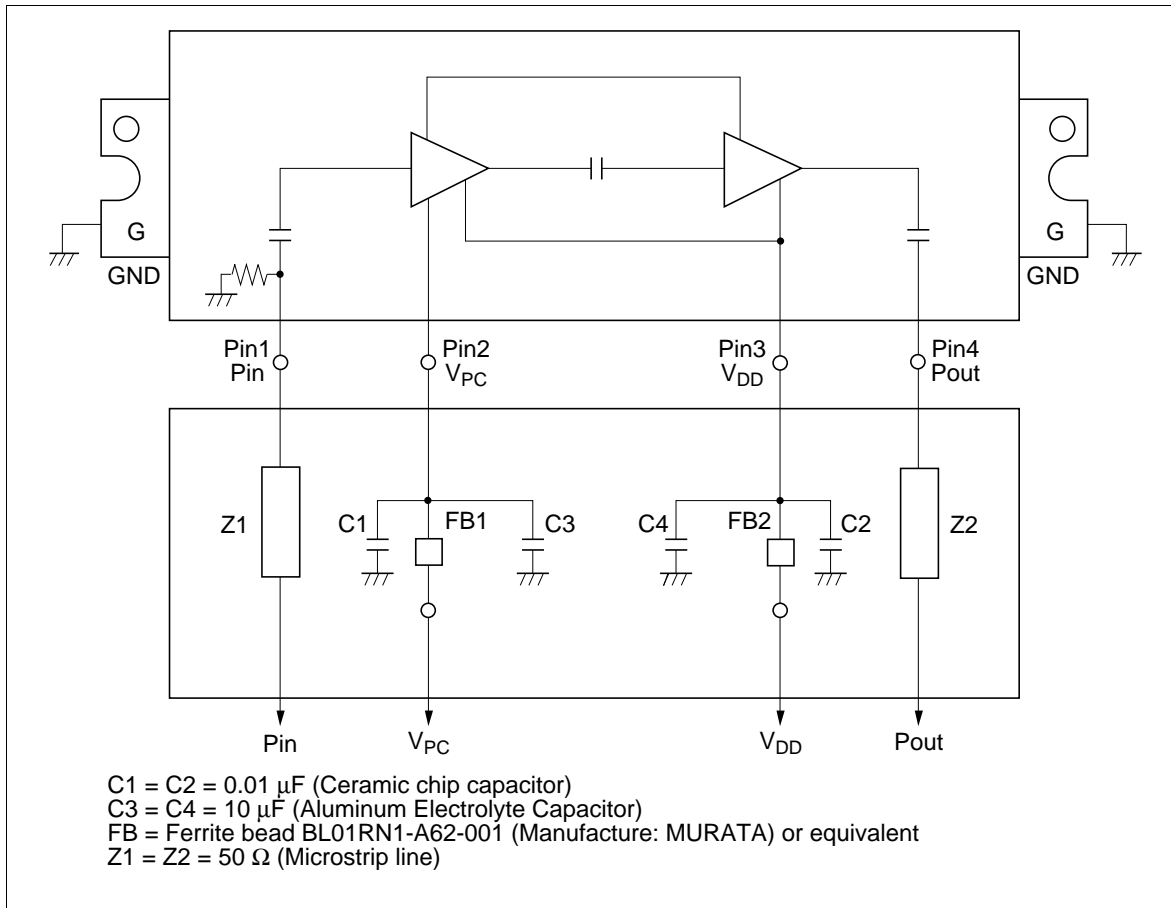
• RF-J



1: Pin
2: V_{PC}
3: V_{DD}
4: Pout
5: GND (Flange)

PF0340A

Internal Diagram and External Circuit



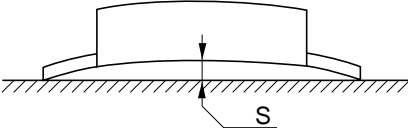
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

Item	Symbol	Rating	Unit
Supply voltage	VDD	17	V
Supply current	IDD	3	A
PC voltage	VPC	4.5	V
Input power	Pin	50	mW
Operating case temperature	T_c (op)	-30 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +110	$^\circ\text{C}$

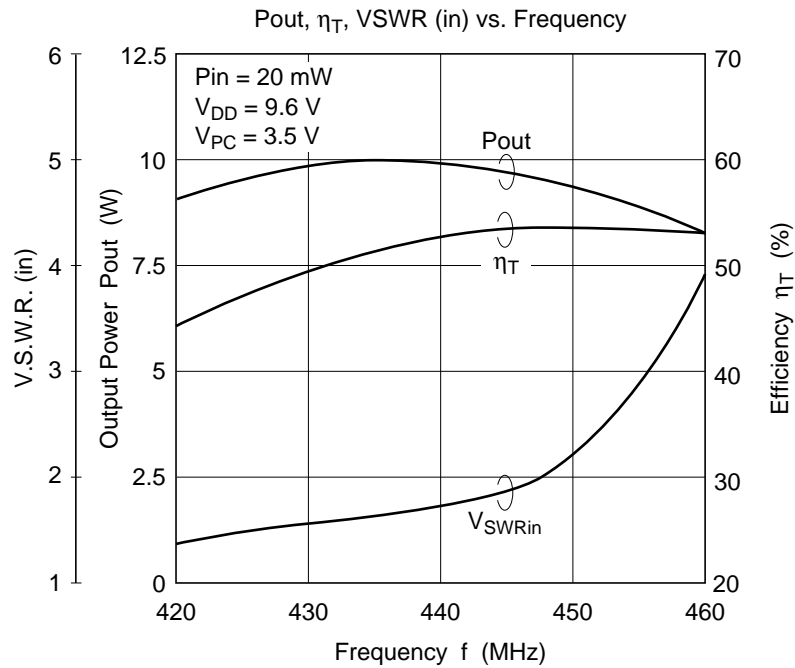
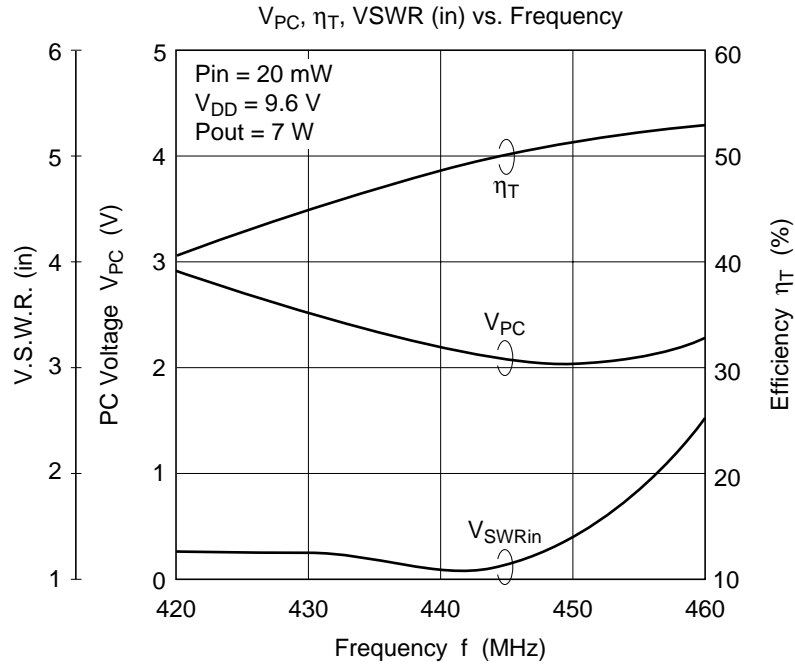
Electrical Characteristics ($T_c = 25^\circ\text{C}$)

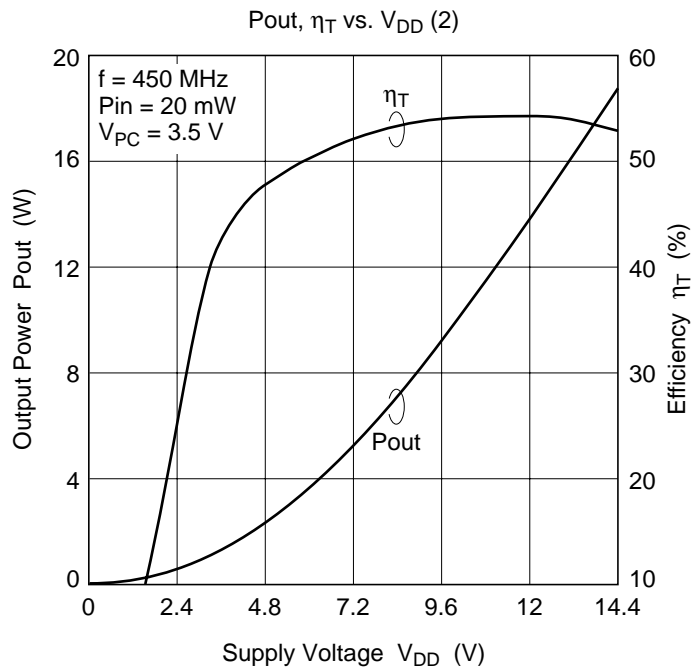
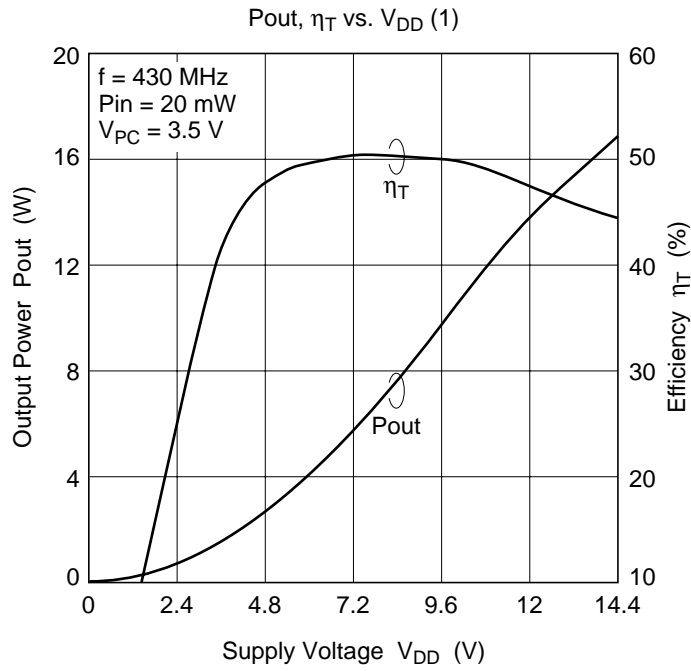
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	430	—	450	MHz	—
Drain cutoff current	IDS	—	—	100	μA	VDD = 17 V, VPC = 0 V, RL = Rg = 50 Ω ,
Total efficiency	η_T	38	43	—	%	Pin = 20 mW, VDD = 9.6 V,
2nd harmonic distortion	2nd H.D.	—	-30	-25	dBc	Pout = 7 W (at VPC controlled),
3rd harmonic distortion	3rd H.D.	—	-60	-40	dBc	RL = Rg = 50 Ω , Tc = 25°C
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	Pout (1)	7	8	—	W	Pin = 20 mW, VDD = 9.6 V, VPC = 3.5 V, RL = Rg = 50 Ω
Output power (2)	Pout (2)	1.8	2	—	W	Pin = 20 mW, VDD = 4.8 V, VPC = 3.5 V, RL = Rg = 50 Ω
Load VSWR tolerance	—	No degradation			—	Pin = 20 mW, VDD = 15 V, Pout \leq 7 W, (at VPC controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation			—	Pin = 20 mW, VDD = 4.8 to 15 V, Pout \leq 7 W, (at VPC controlled), Output VSWR = 6:1 All phases

Mechanical Characteristics

Item	Measuring Conditions	Spec
Torque for screw up the heatsink flange	M2.6 Screw Bolts	1.5 to 3.5 kg \cdot cm
Warp size of the heatsink flange: S		S = 0 +0.1/-0 mm

Characteristics Curve





PF0340A

