
PF0340A

MOS FET Power Amplifier Module for UHF Band

HITACHI

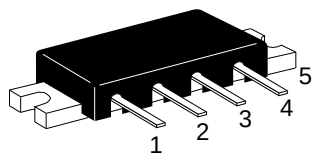
ADE-208-317B (Z)
3rd. Edition
July 1996

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

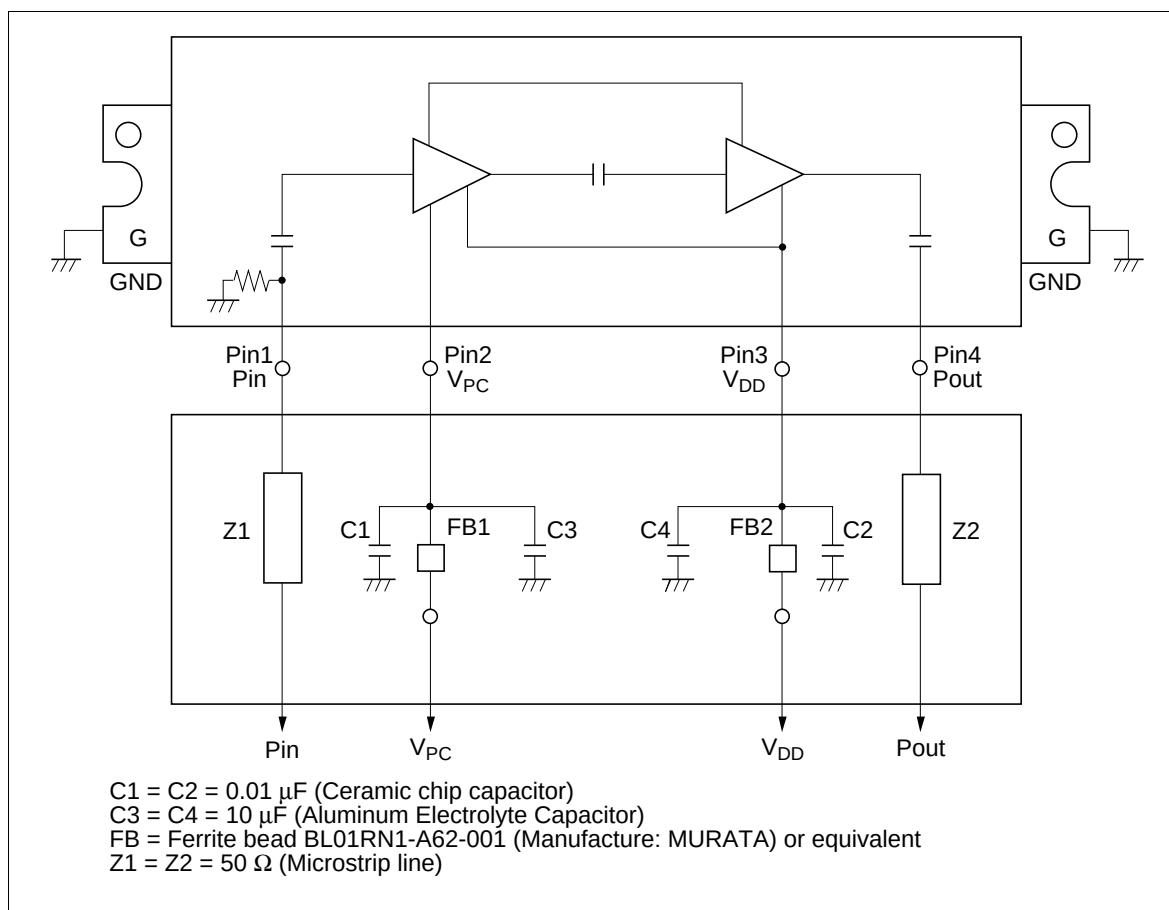
• RF-J



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

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Internal Diagram and External Circuit



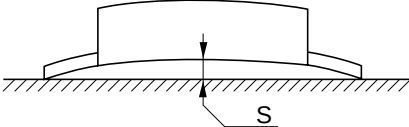
Absolute Maximum Ratings (T_c = 25°C)

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	°C
Storage temperature	T _{stg}	-40 to +110	°C

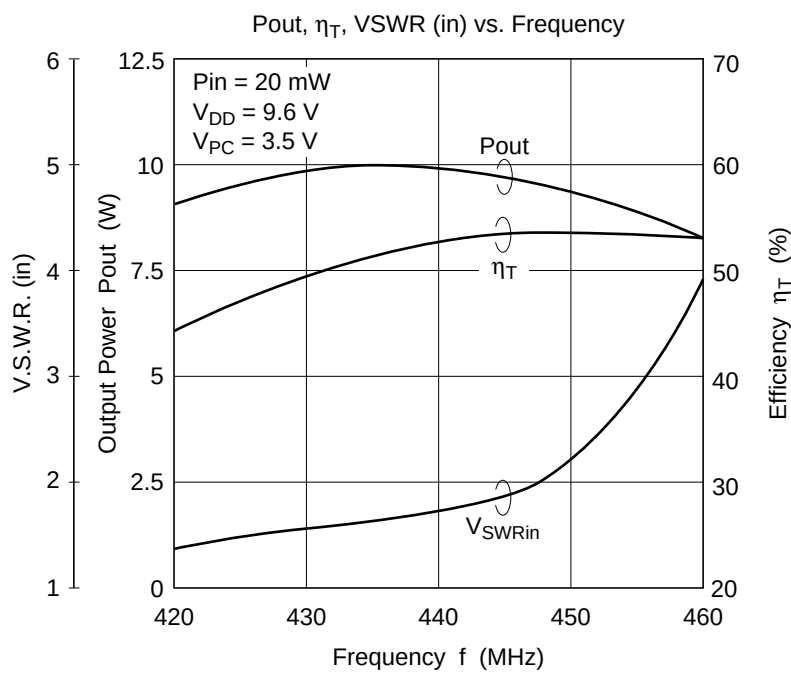
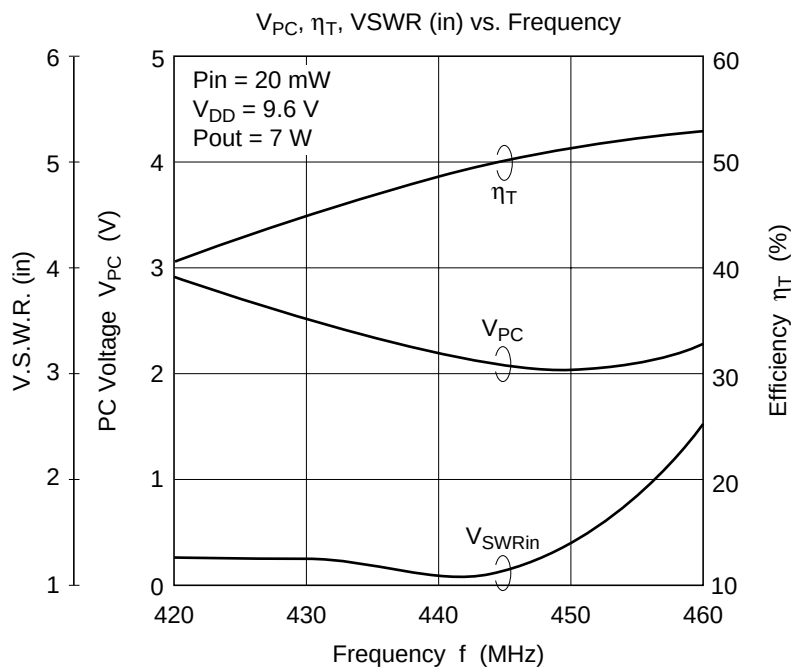
Electrical Characteristics (T_c = 25°C)

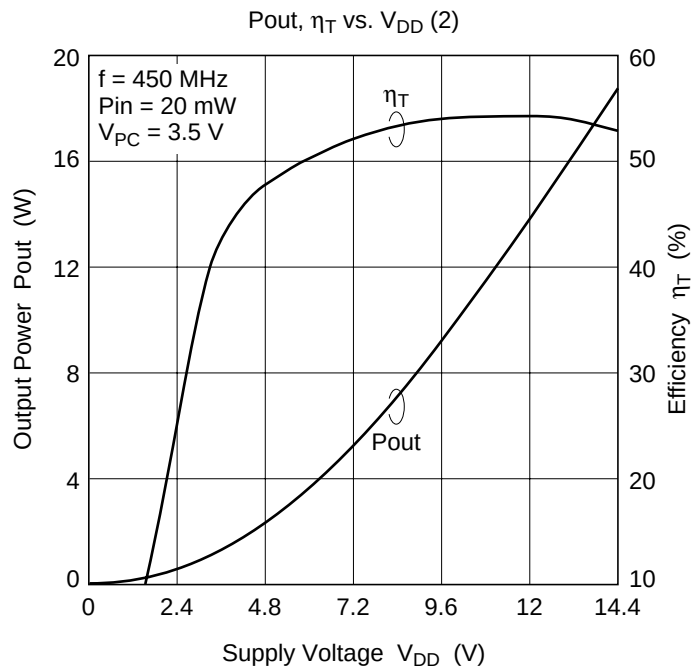
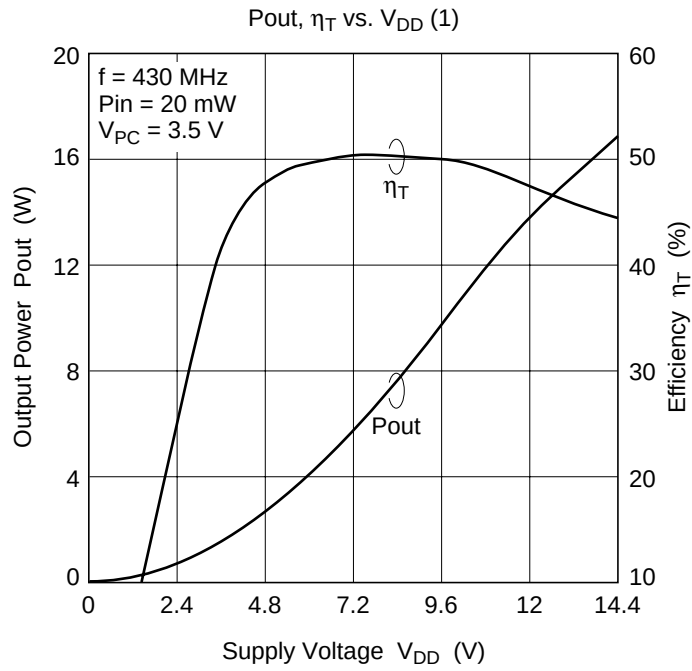
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	430	—	450	MHz	—
Drain cutoff current	I _{DS}	—	—	100	μA	V _{DD} = 17 V, V _{PC} = 0 V, R _L = R _g = 50 Ω,
Total efficiency	η _T	38	43	—	%	Pin = 20 mW, V _{DD} = 9.6 V,
2nd harmonic distortion	2nd H.D.	—	−30	−25	dBc	P _{out} = 7 W (at VPC controlled),
3rd harmonic distortion	3rd H.D.	—	−60	−40	dBc	R _L = R _g = 50 Ω, T _c = 25°C
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	P _{out} (1)	7	8	—	W	Pin = 20 mW, V _{DD} = 9.6 V, V _{PC} = 3.5 V, R _L = R _g = 50 Ω
Output power (2)	P _{out} (2)	1.8	2	—	W	Pin = 20 mW, V _{DD} = 4.8 V, V _{PC} = 3.5 V, R _L = R _g = 50 Ω
Load VSWR tolerance	—	No degradation			—	Pin = 20 mW, V _{DD} = 15 V, P _{out} ≤ 7 W, (at VPC controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation			—	Pin = 20 mW, V _{DD} = 4.8 to 15 V, P _{out} ≤ 7 W, (at VPC controlled), Output VSWR = 6:1 All phases

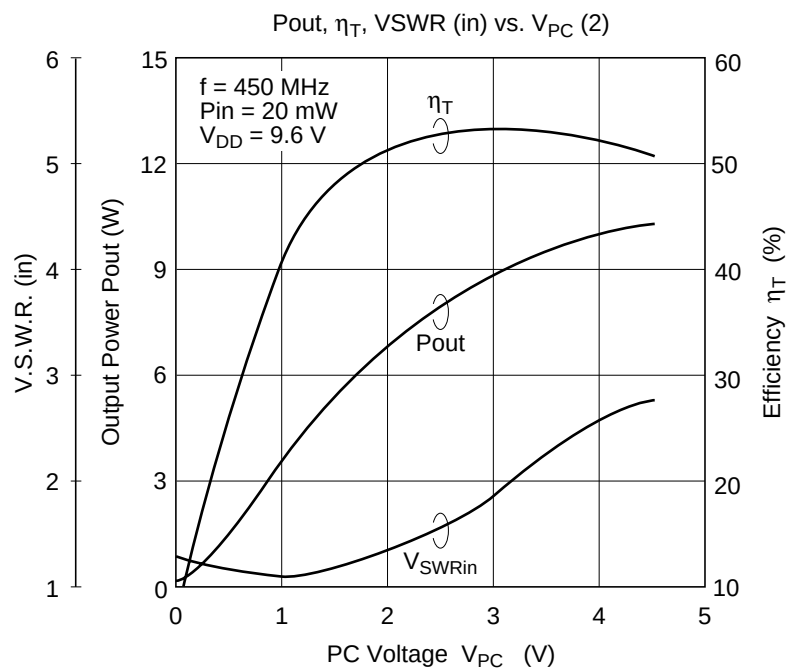
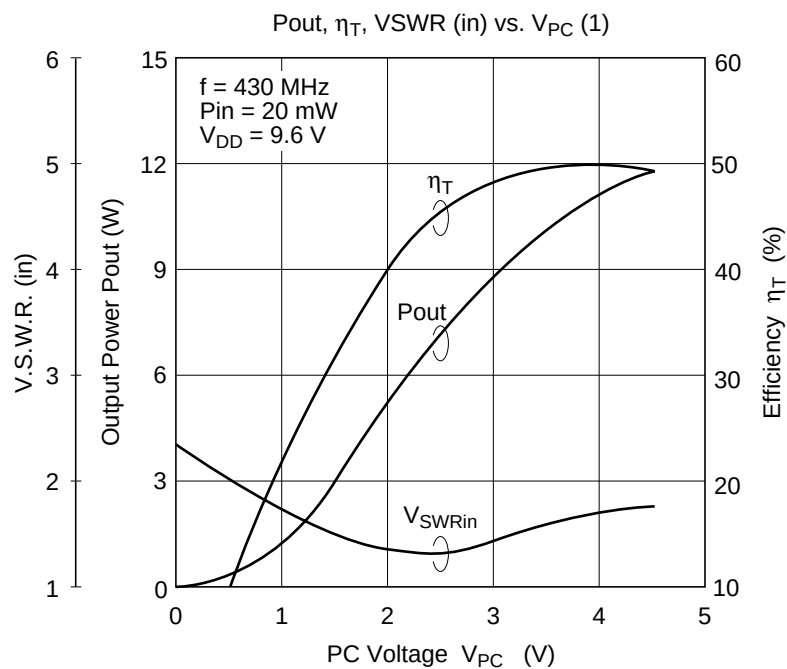
Mechanical Characteristics

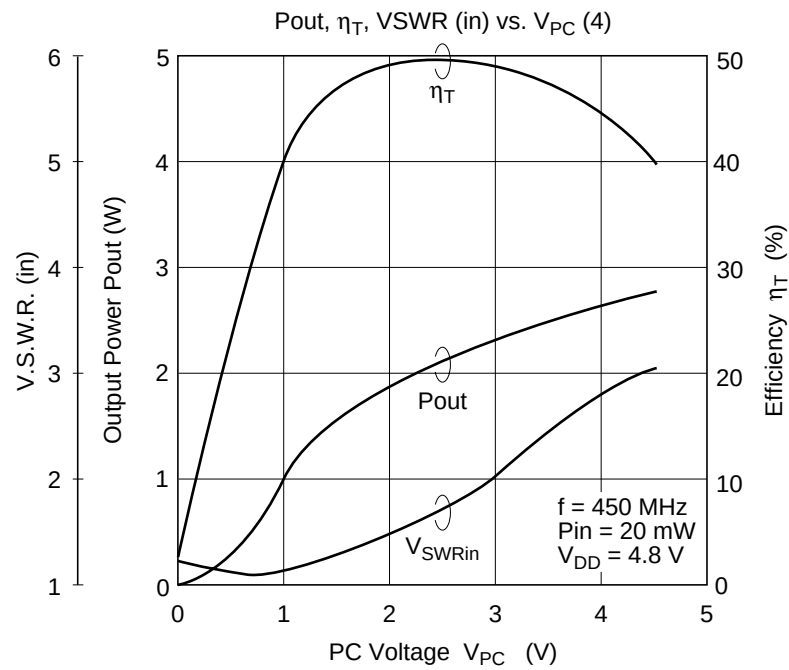
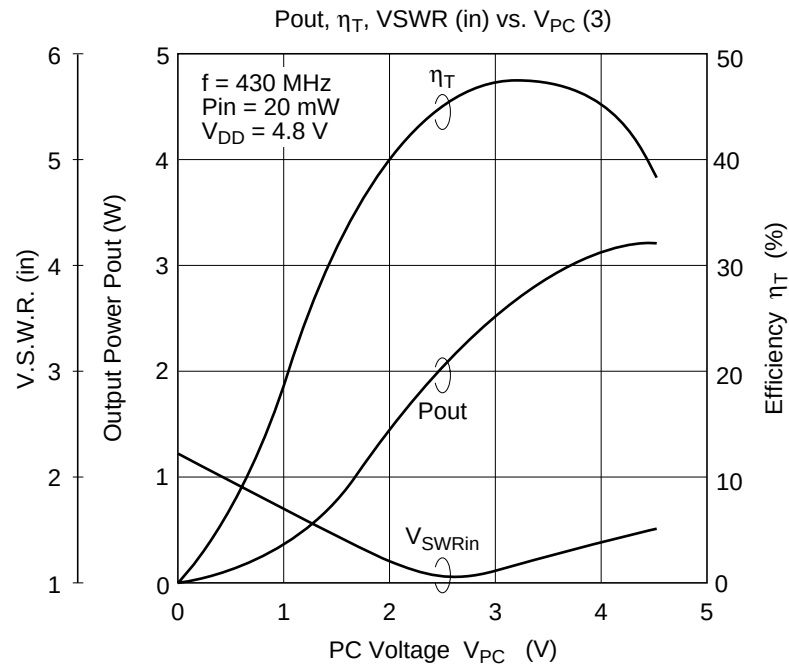
Item	Measuring Conditions	Spec
Torque for screw up the heatsink flange	M2.6 Screw Bolts	1.5 to 3.5 kg•cm
Warp size of the heatsink flange: S		S = 0 +0.1/−0 mm

Characteristics Curve









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Package Dimensions

Unit: mm

