

PF0340A

MOS FET Power Amplifier Module for UHF Band

HITACHI

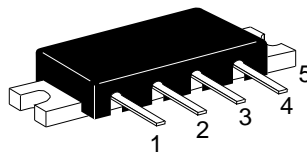
ADE-208-317B (Z)
3rd Edition
July 1996

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

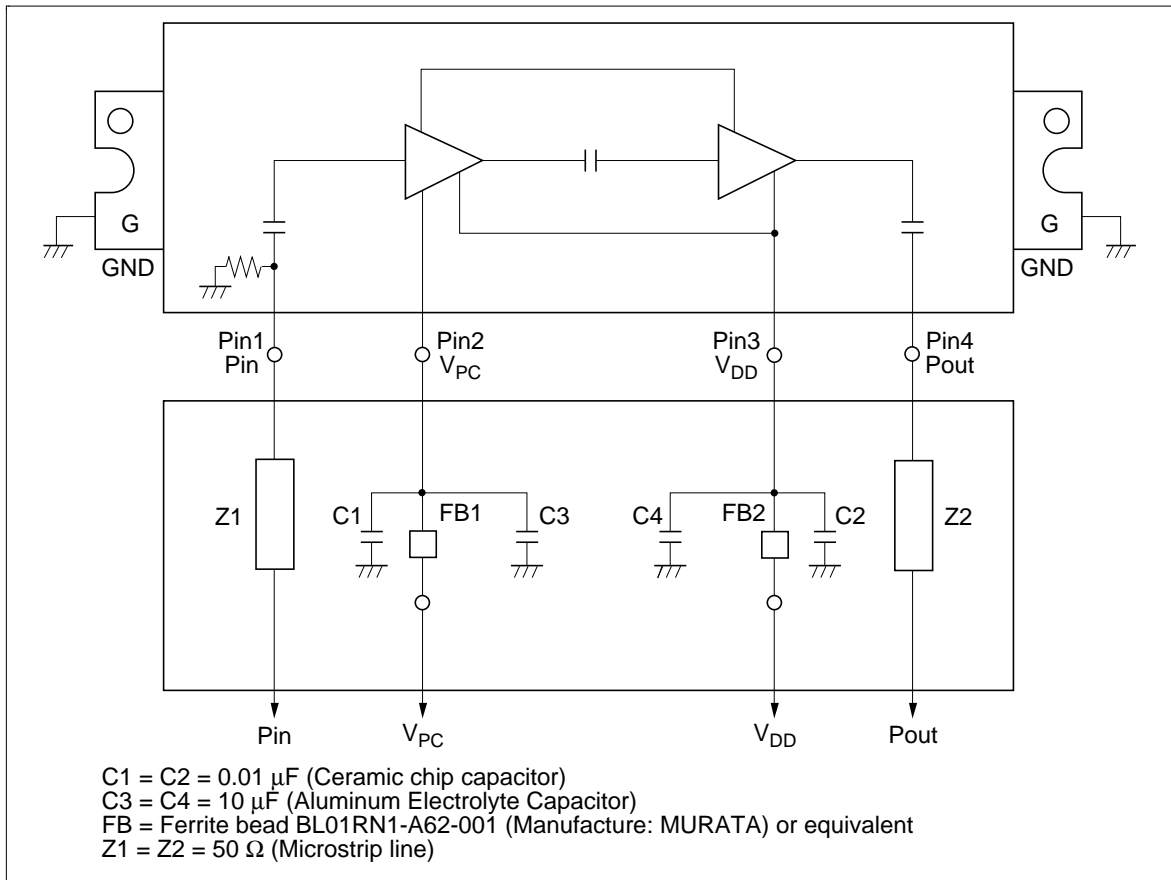
Pin Arrangement

• RF-J



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

Internal Diagram and External Circuit



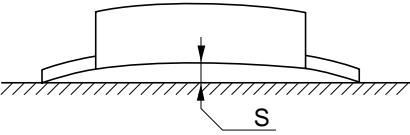
Absolute Maximum Ratings (Tc = 25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	17	V
Supply current	I _{DD}	3	A
PC voltage	V _{PC}	4.5	V
Input power	Pin	50	mW
Operating case temperature	Tc (op)	-30 to +100	°C
Storage temperature	Tstg	-40 to +110	°C

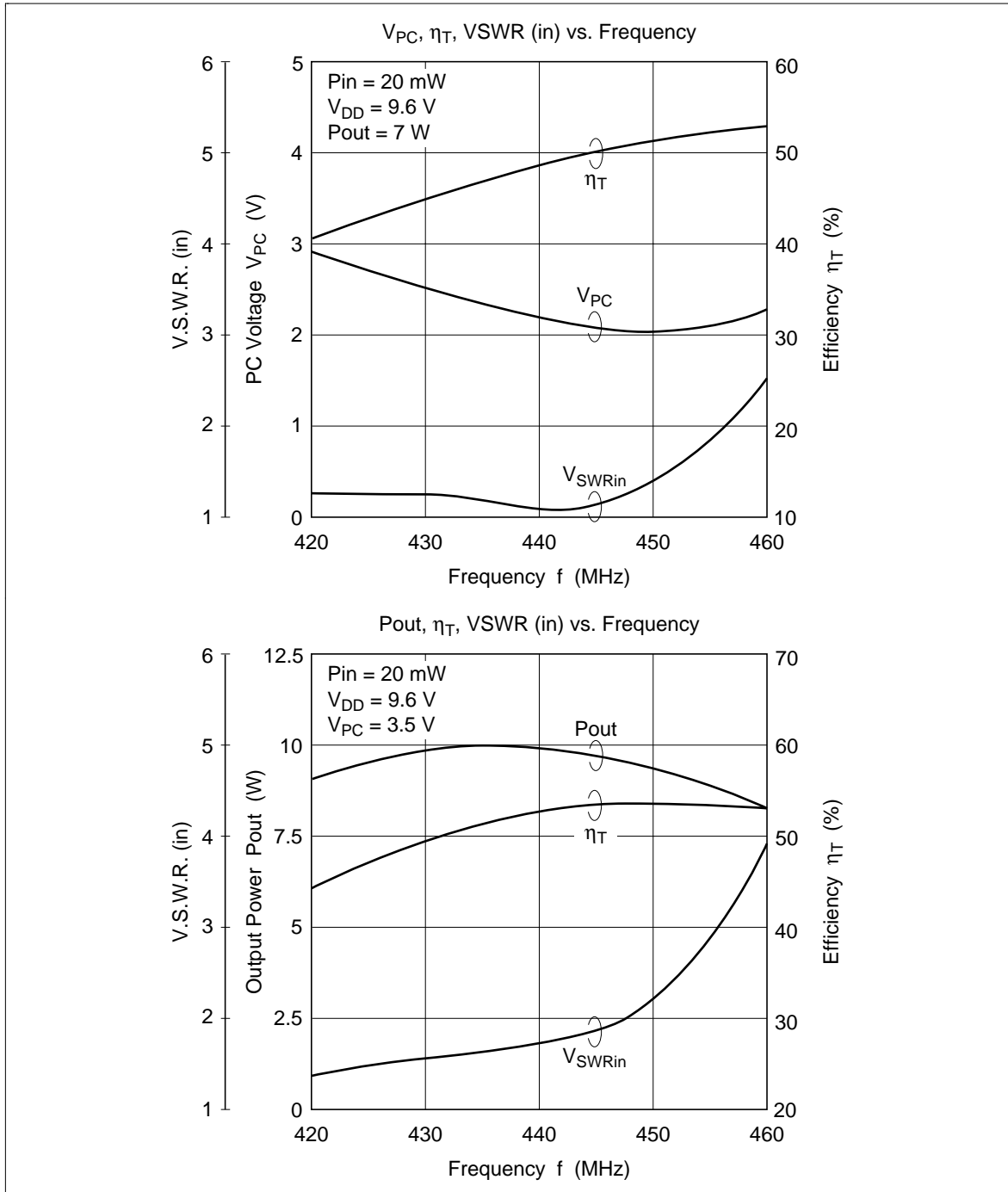
Electrical Characteristics ($T_c = 25^\circ\text{C}$)

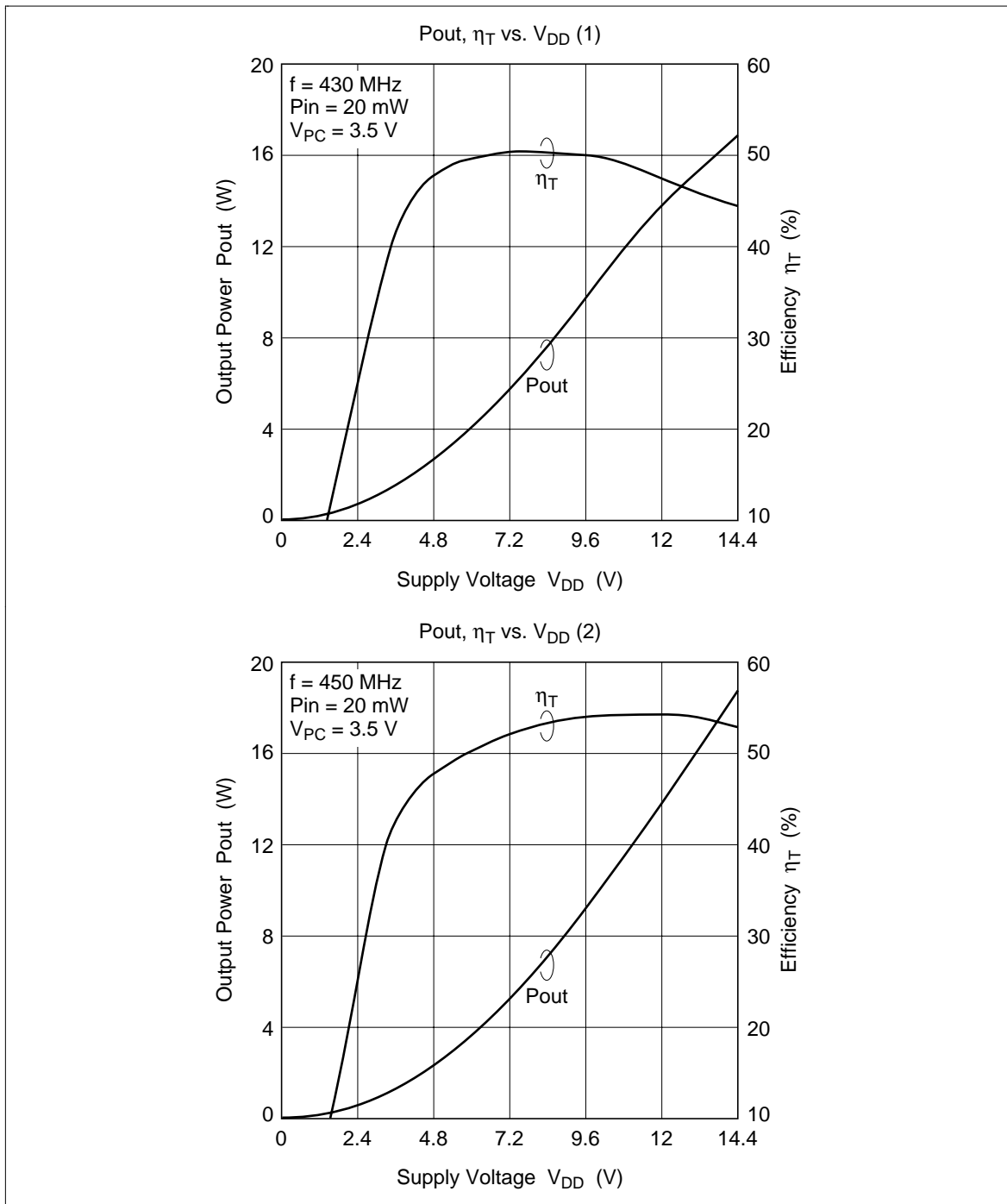
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency range	f	430	—	450	MHz	—
Drain cutoff current	I_{DS}	—	—	100	μA	$V_{DD} = 17\text{ V}$, $V_{PC} = 0\text{ V}$, $R_L = R_g = 50\ \Omega$,
Total efficiency	η_T	38	43	—	%	$P_{in} = 20\text{ mW}$, $V_{DD} = 9.6\text{ V}$,
2nd harmonic distortion	2nd H.D.	—	-30	-25	dBc	$P_{out} = 7\text{ W}$ (at V_{PC} controlled),
3rd harmonic distortion	3rd H.D.	—	-60	-40	dBc	$R_L = R_g = 50\ \Omega$, $T_c = 25^\circ\text{C}$
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	P_{out} (1)	7	8	—	W	$P_{in} = 20\text{ mW}$, $V_{DD} = 9.6\text{ V}$, $V_{PC} = 3.5\text{ V}$, $R_L = R_g = 50\ \Omega$
Output power (2)	P_{out} (2)	1.8	2	—	W	$P_{in} = 20\text{ mW}$, $V_{DD} = 4.8\text{ V}$, $V_{PC} = 3.5\text{ V}$, $R_L = R_g = 50\ \Omega$
Load VSWR tolerance	—	No degradation			—	$P_{in} = 20\text{ mW}$, $V_{DD} = 15\text{ V}$, $P_{out} \leq 7\text{ W}$, (at V_{PC} controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation			—	$P_{in} = 20\text{ mW}$, $V_{DD} = 4.8\text{ to }15\text{ V}$, $P_{out} \leq 7\text{ W}$, (at V_{PC} controlled), Output VSWR = 6:1 All phases

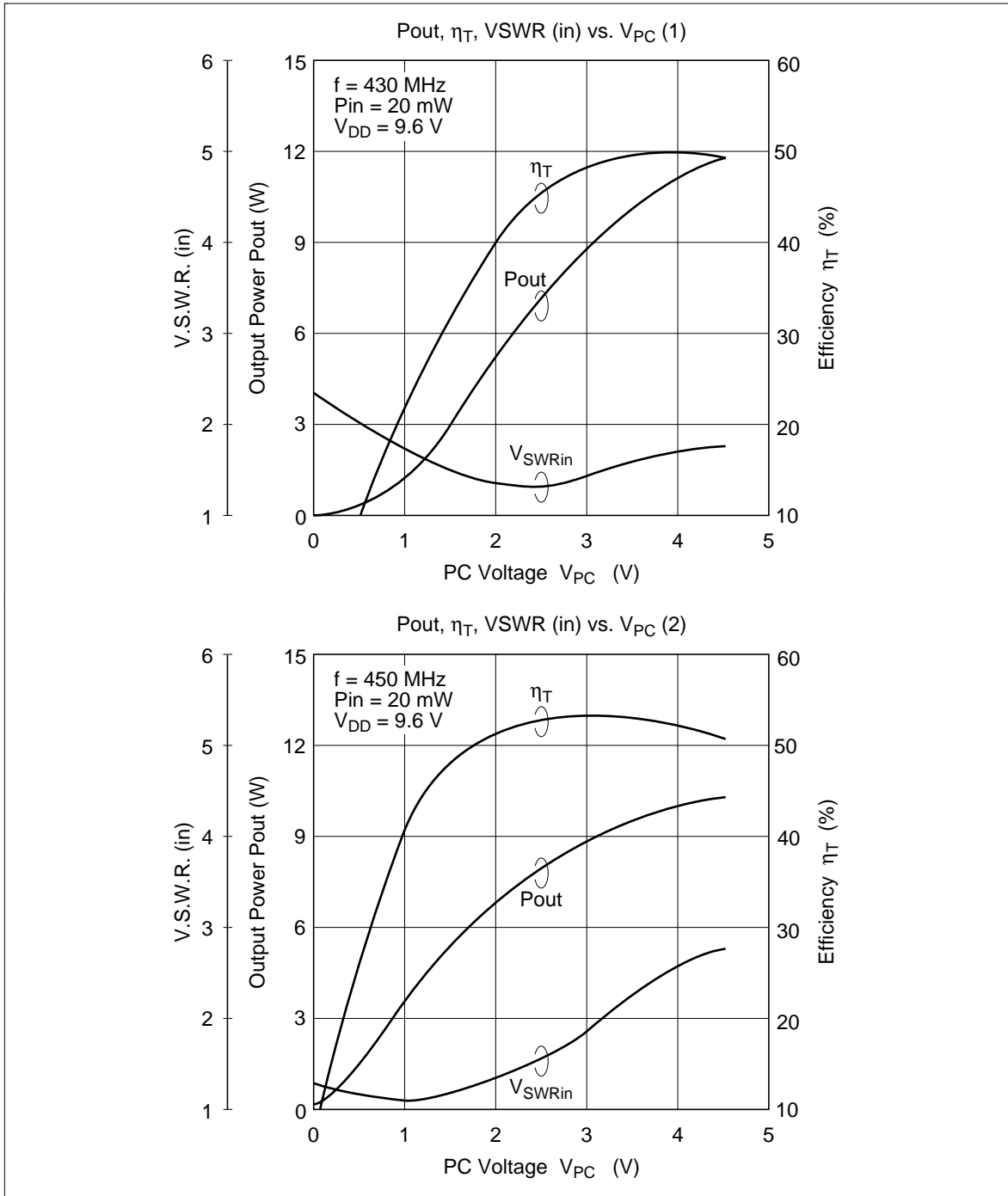
Mechanical Characteristics

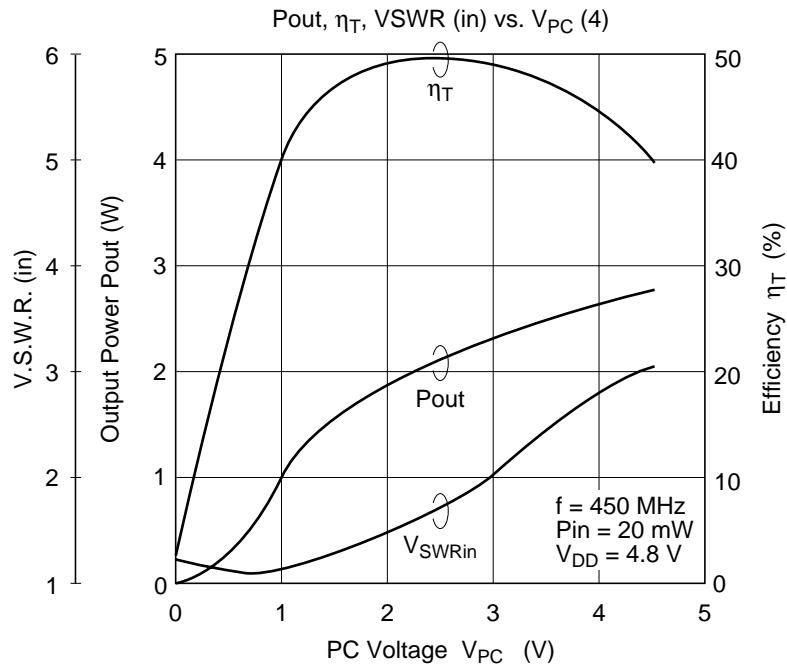
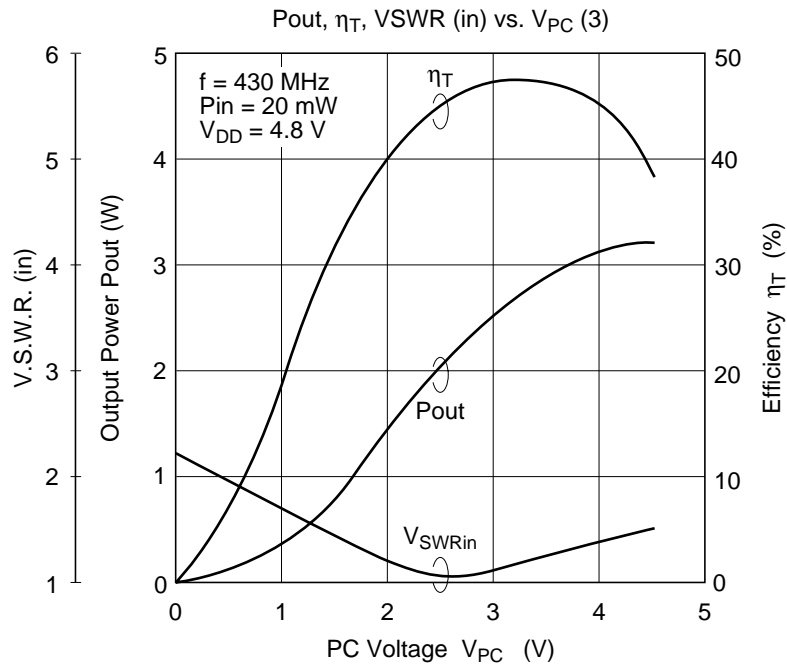
Item	Measuring Conditions	Spec
Torque for screw up the heatsink flange	M2.6 Screw Bolts	1.5 to 3.5 kg•cm
Warp size of the heatsink flange: S		$S = 0$ $+0.1/-0\text{ mm}$

Characteristic Curves



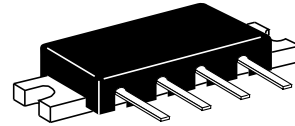
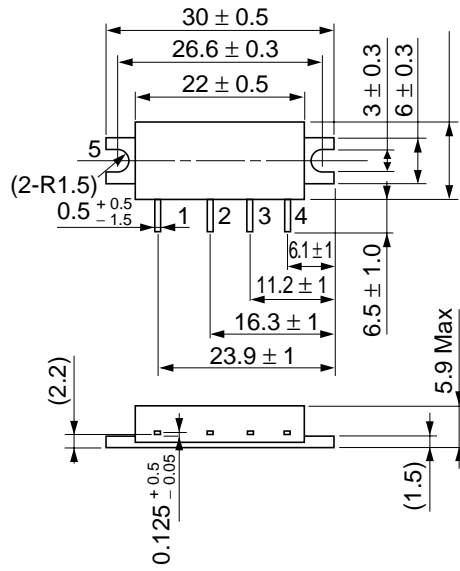






Package Dimensions

Unit: mm



Hitachi Code	RF-J
JEDEC	—
EIAJ	—
Weight (reference value)	—

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