
PF0341A Series

MOS FET Power Amplifier Module for UHF Band

HITACHI

ADE-208-338C (Z)

4th Edition

July 1996

Features

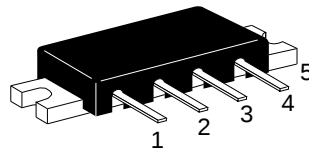
- Small package: $30 \times 10 \times 5.9$ mm
- High output power at low voltage: 2 W Typ at 4.8 V
- Low power control current: 200 μ A Typ

Ordering Information

Type Name	Operating Frequency
PF0341A	400 to 430 MHz
PF0342A	440 to 470 MHz
PF0343A	470 to 490 MHz
PF0344A	490 to 512 MHz
PF0345A	380 to 400 MHz

Pin Arrangement

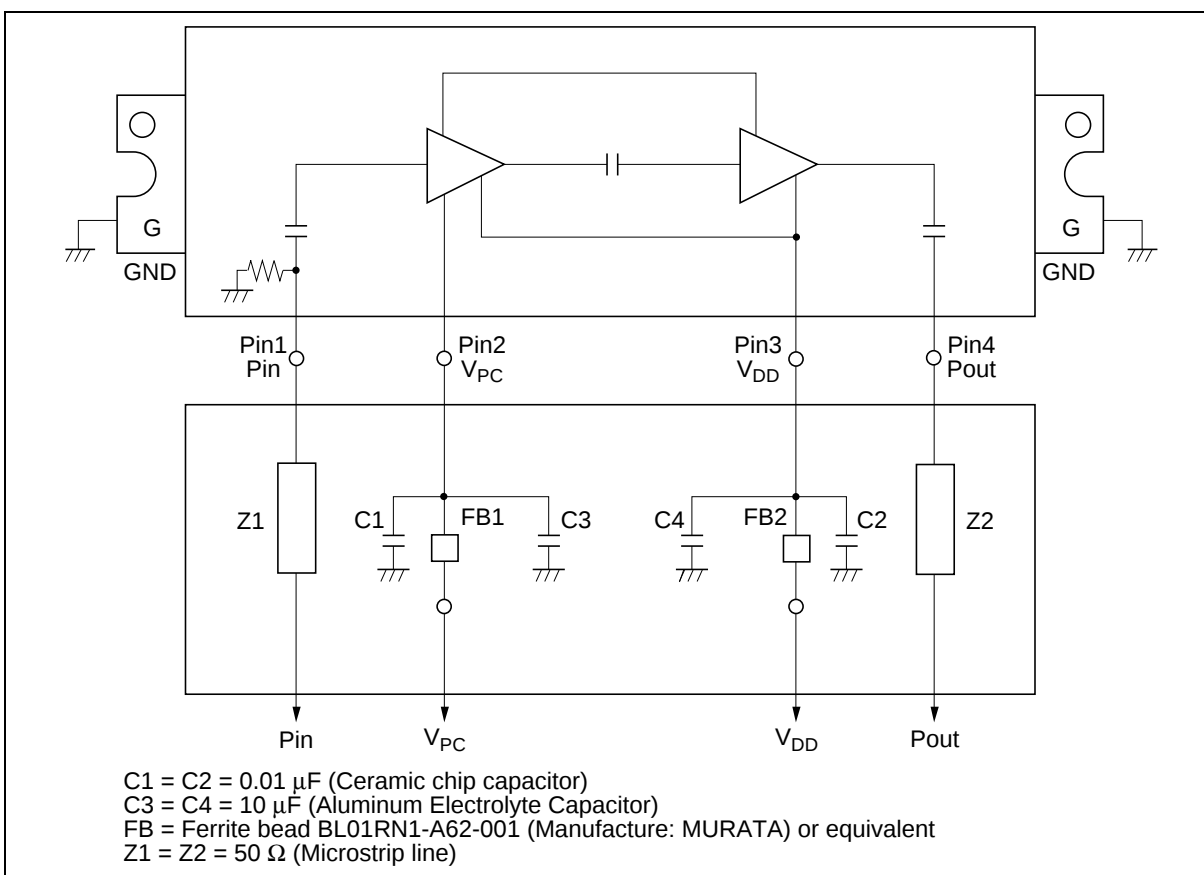
• RF-J1



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

PF0341A Series

Internal Diagram and External Circuit



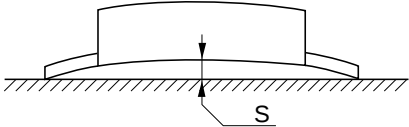
Absolute Maximum Ratings ($T_c = 25^\circ\text{C}$)

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	T_c (op)	-30 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +110	$^\circ\text{C}$

Electrical Characteristics (Tc = 25°C)

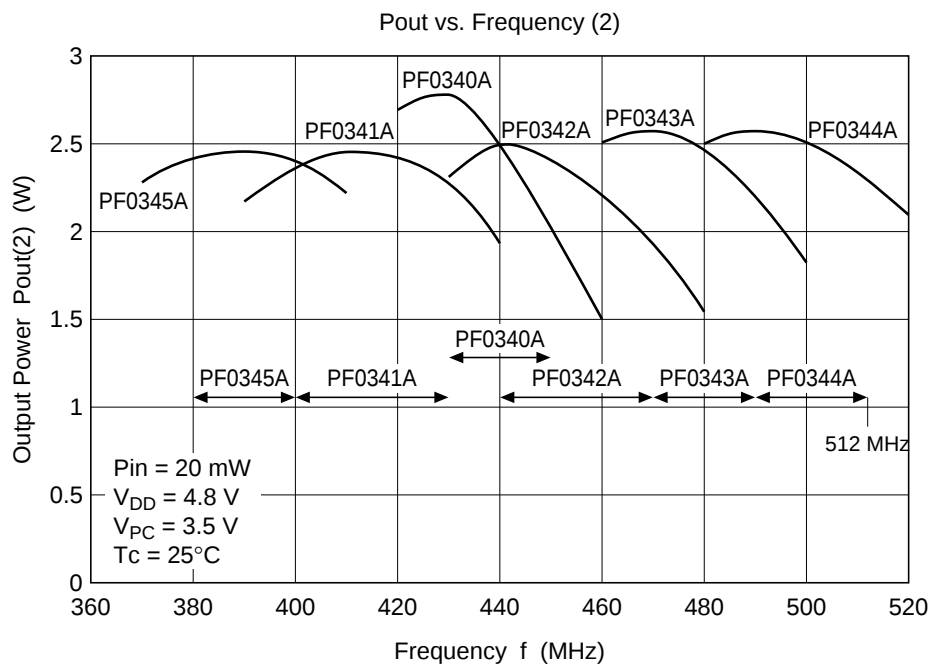
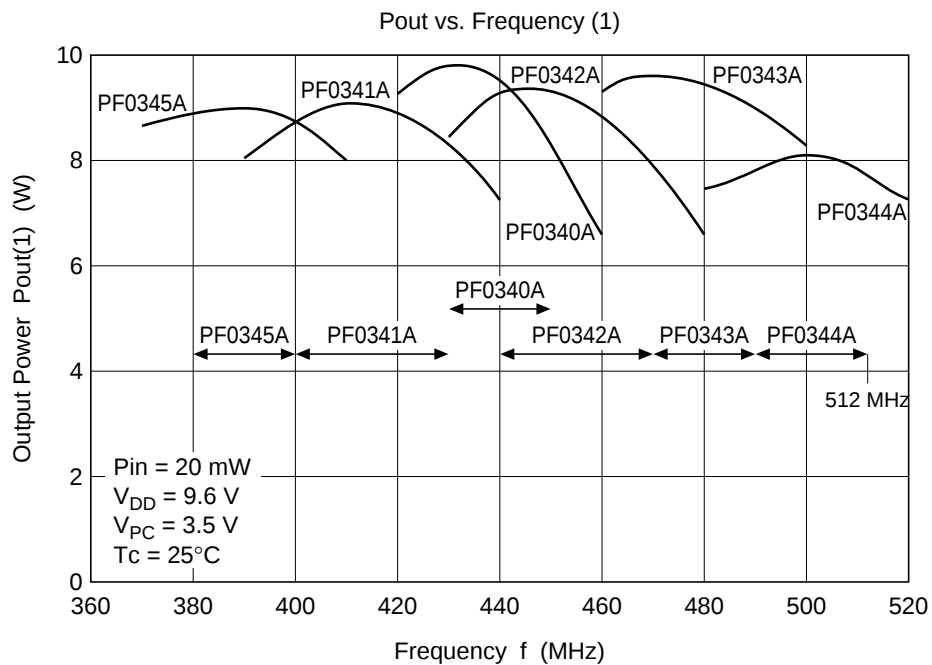
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I_{DS}	—	—	100	μA	$V_{DD} = 17 V$, $V_{PC} = 0 V$, $R_L = R_g = 50 \Omega$,
Total efficiency	η_T	35	38	—	%	Pin = 20 mW, $V_{DD} = 9.6 V$, Pout = 7 W (at V_{PC} controlled), $R_L = R_g = 50 \Omega$, Tc = 25°C
2nd harmonic distortion	2nd H.D.	—	−30	−25	dBc	
3rd harmonic distortion	3rd H.D.	—	−60	−40	dBc	
Input VSWR	VSWR (in)	—	2.0	3.0	—	
Output power (1)	Pout (1)	7	8	—	W	Pin = 20 mW, $V_{DD} = 9.6 V$, $V_{PC} = 3.5 V$, $R_L = R_g = 50 \Omega$
Output power (2)	Pout (2)	1.8	2	—	W	Pin = 20 mW, $V_{DD} = 4.8 V$, $V_{PC} = 3.5 V$, $R_L = R_g = 50 \Omega$
Load VSWR tolerance	—	No degradation			—	Pin = 20 mW, $V_{DD} = 15 V$, Pout $\leq 7 W$, (at V_{PC} controlled), Output VSWR = 6:1 All phases
Stability	—	No parasitic oscillation			—	Pin = 20 mW, $V_{DD} = 4.8$ to $15 V$, Pout $\leq 7 W$, (at V_{PC} controlled), Output VSWR = 6:1 All phases

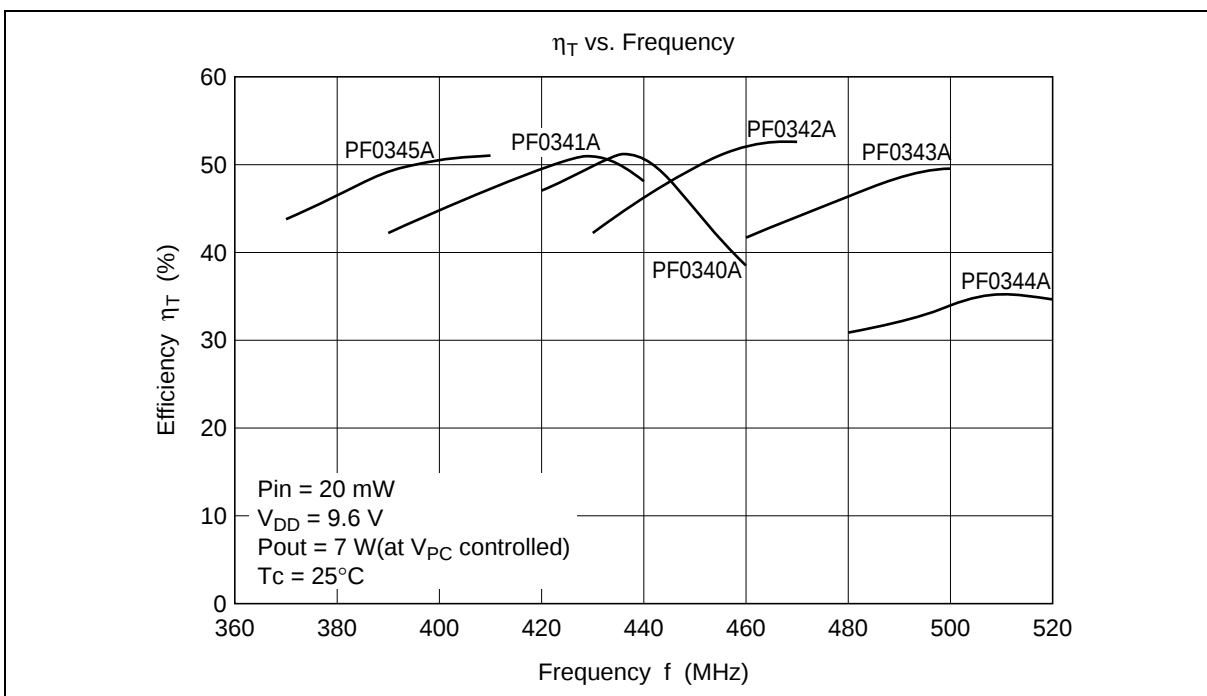
Mechanical Characteristics

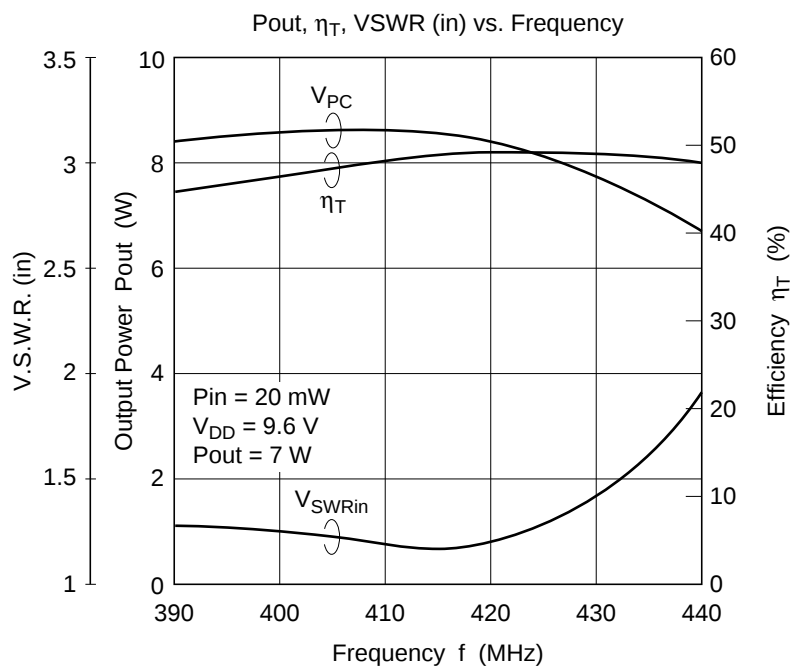
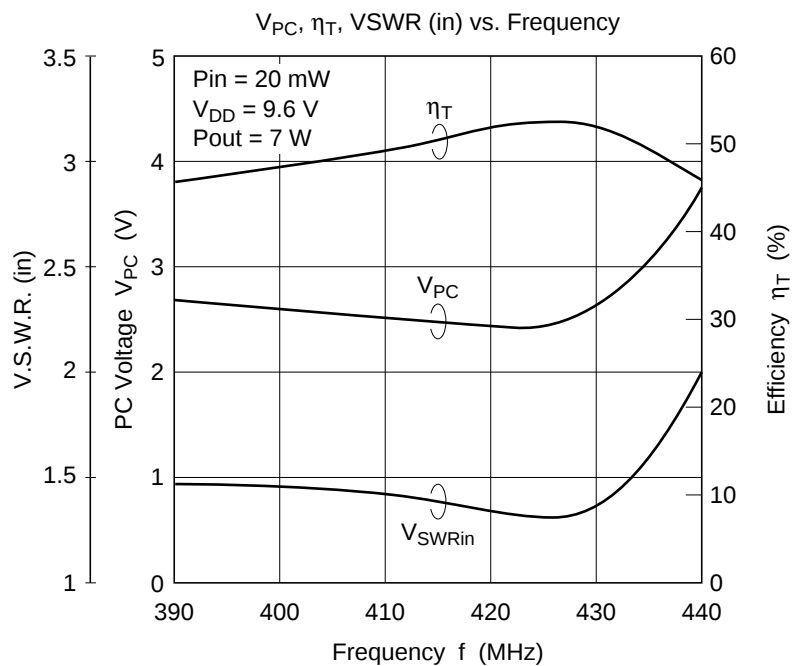
Item	Measuring Conditions	Spec
Torque for screw up the heatsink flange	M2.6 Screw Bolts	1.5 to 3.5 kg•cm
Warp size of the heatsink flange: S		S = 0
		+0.1/−0 mm

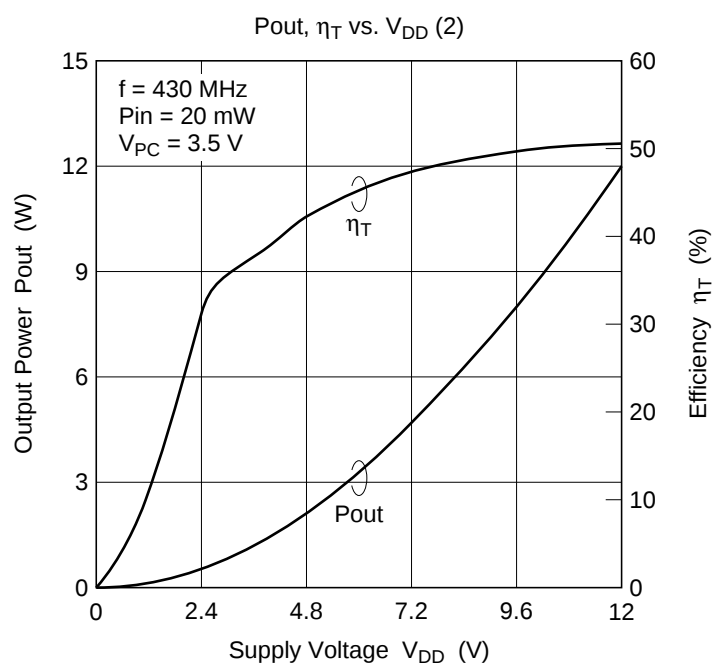
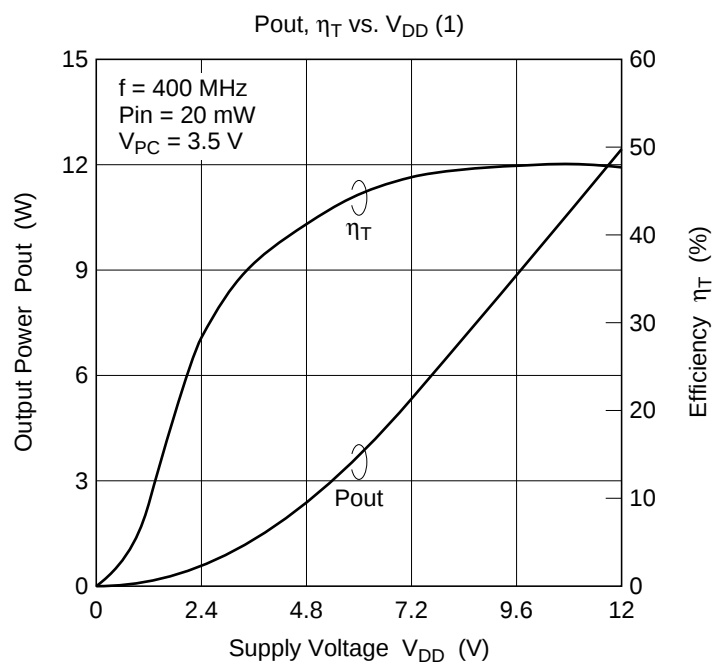
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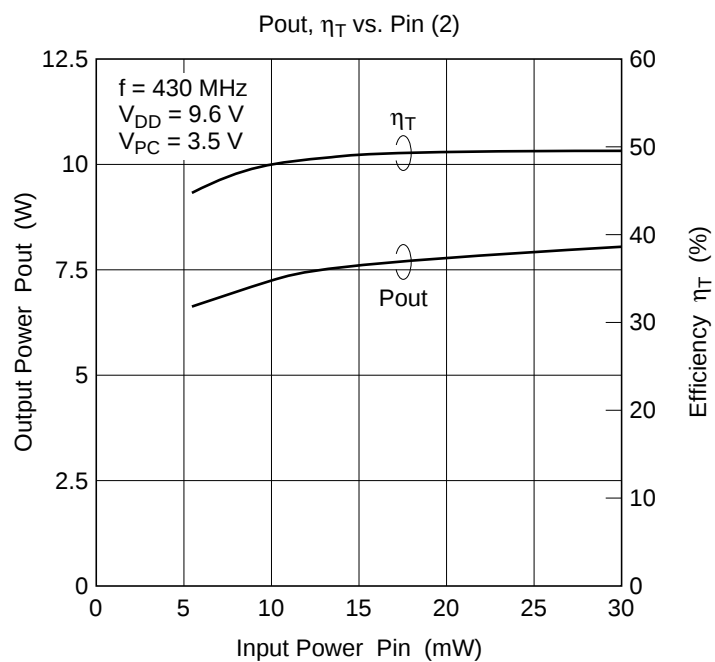
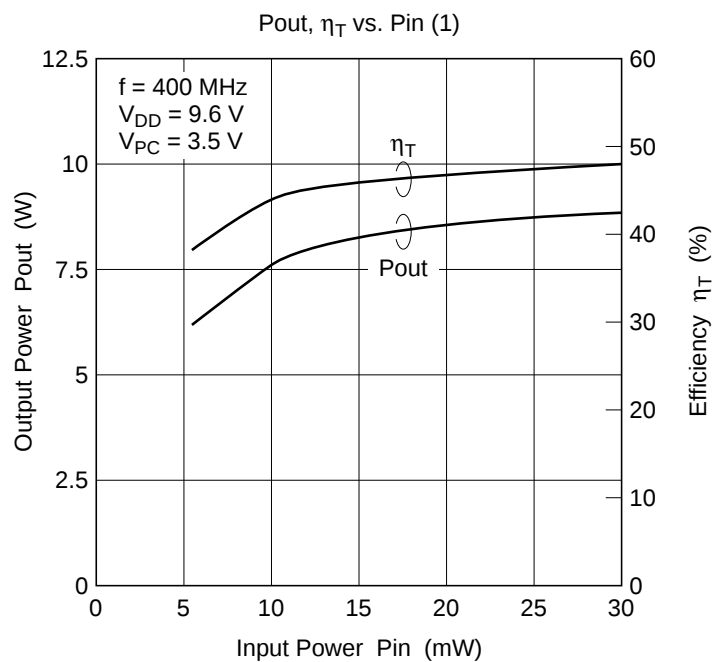
Characteristic Curves

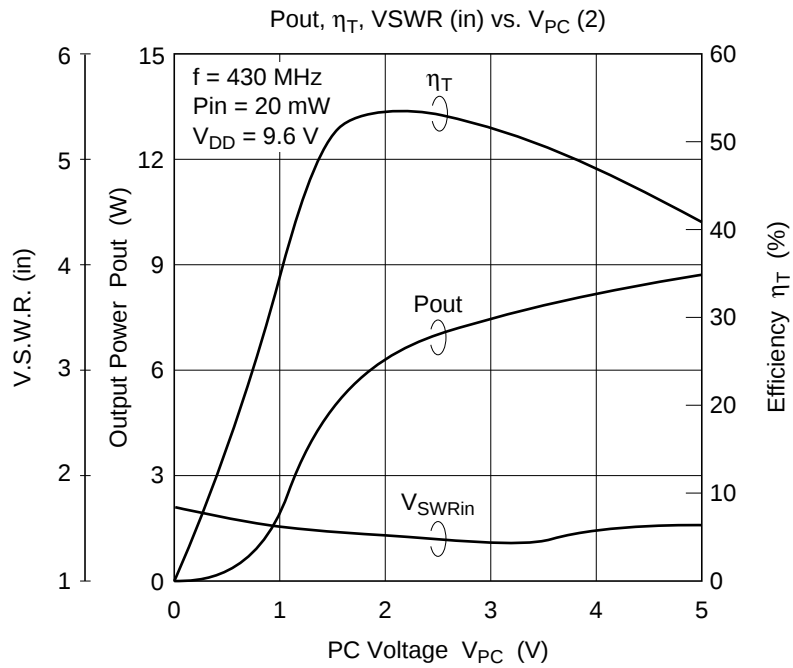
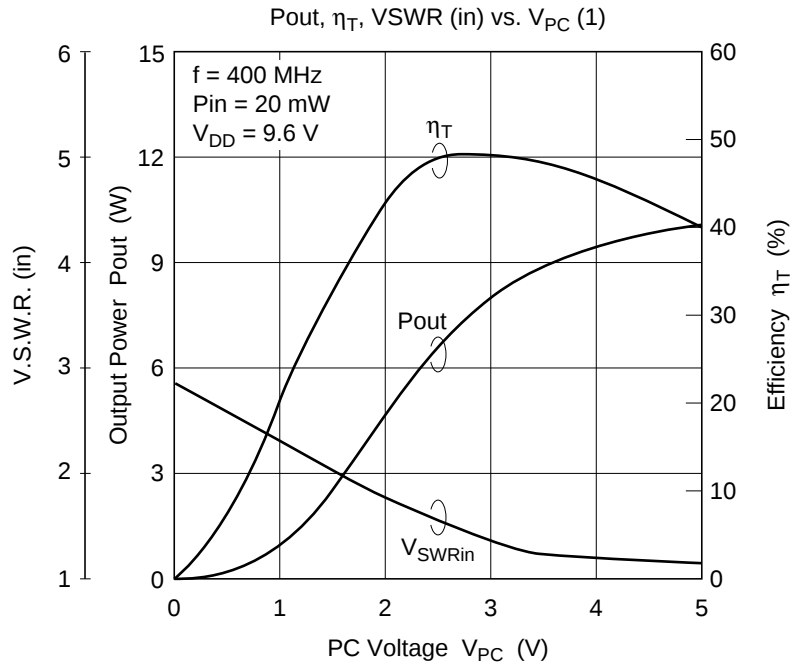


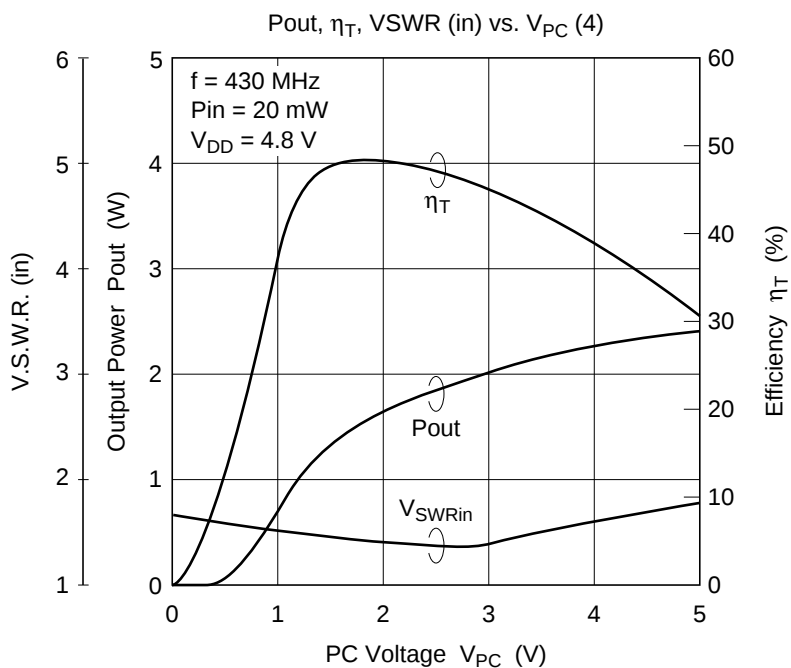
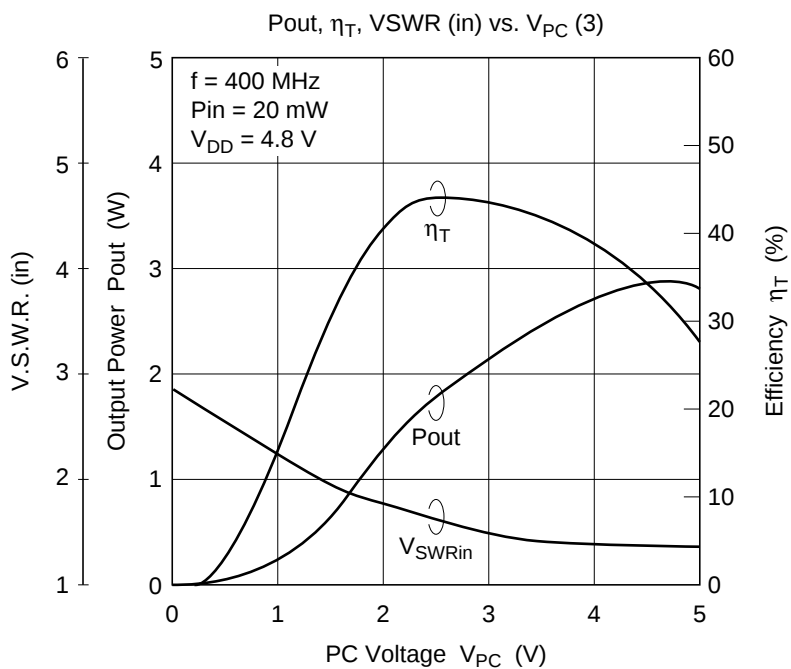




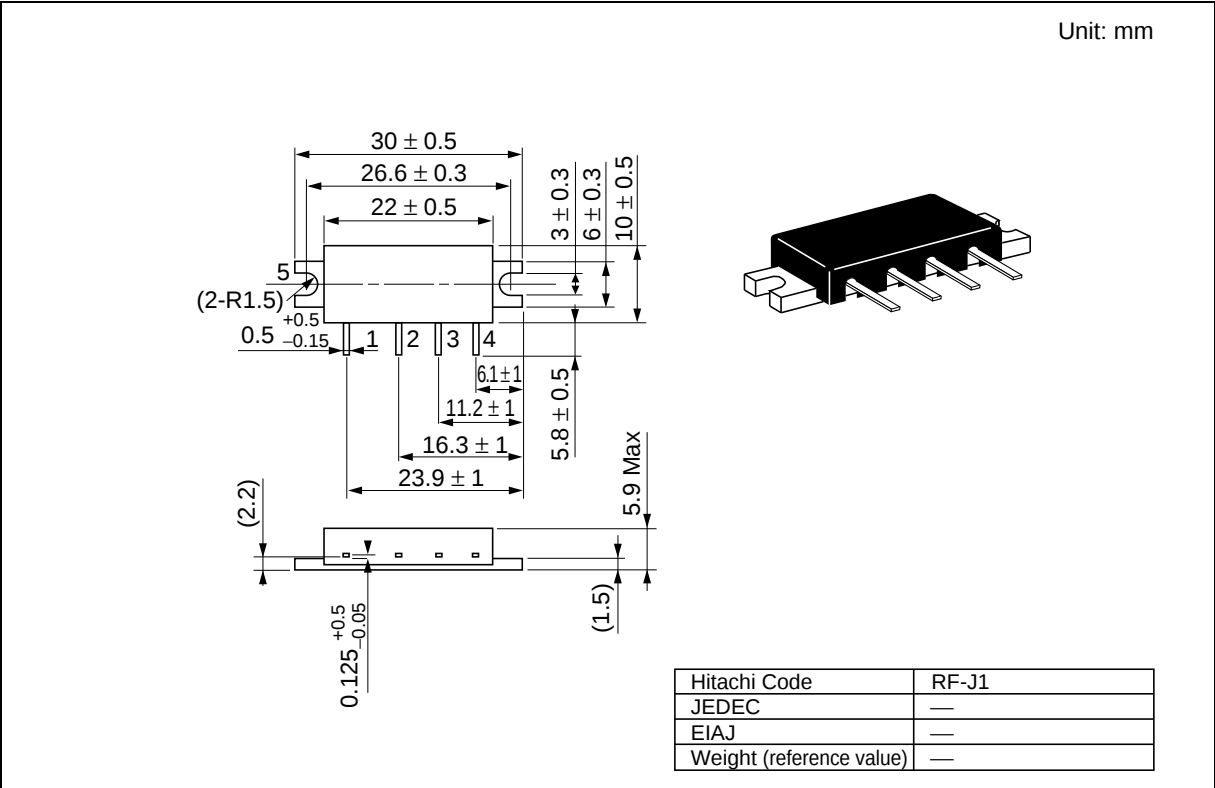








Package Dimensions



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