

PF1016

MOS FET Power Amplifier Module for Land Mobile Radio

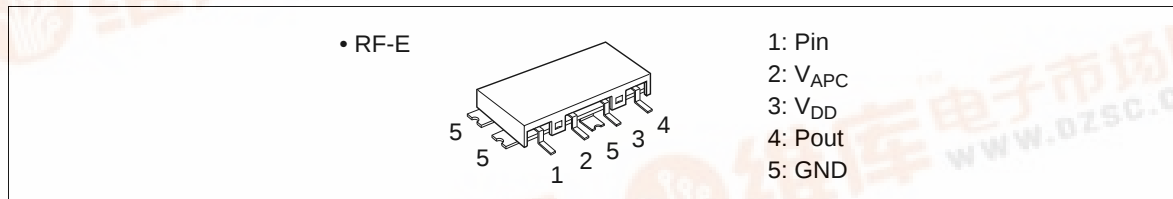
HITACHI

ADE-208-107A (Z)
2nd. Edition
July 1996

Features

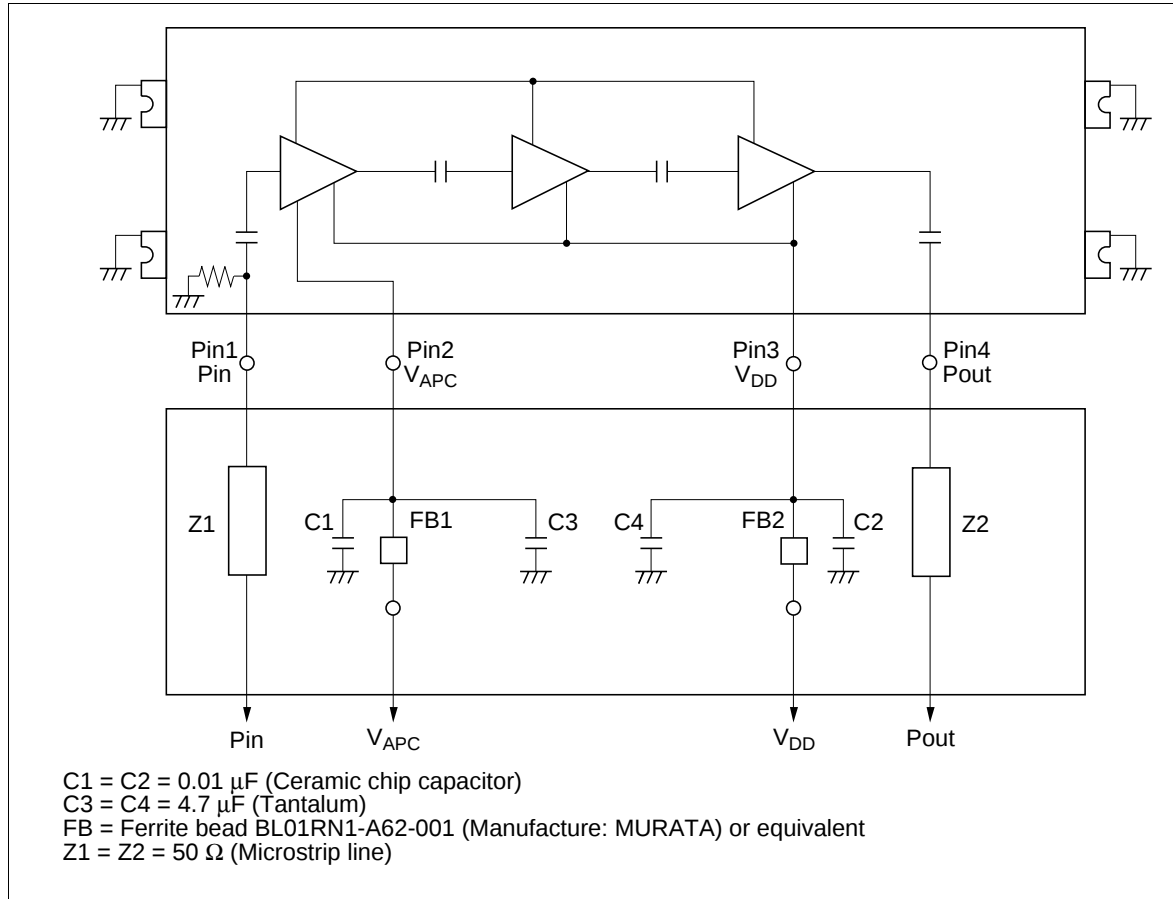
- Frequency range: 806 to 824 MHz
- Surface mounted small package: 1 cc, 3 g with shielded cover
- Wide power control range: 70 dB Typ
- Low power control current: 300 μ A Typ

Pin Arrangement



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Internal Diagram and External Circuit



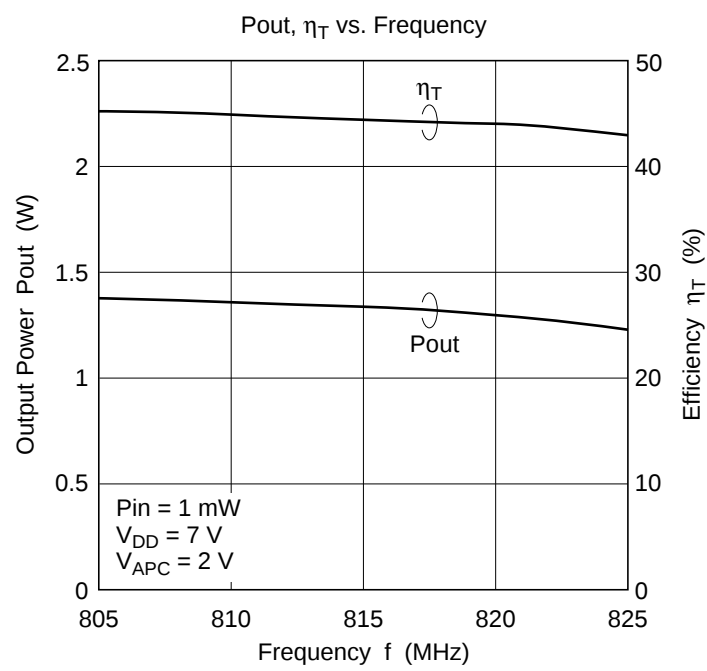
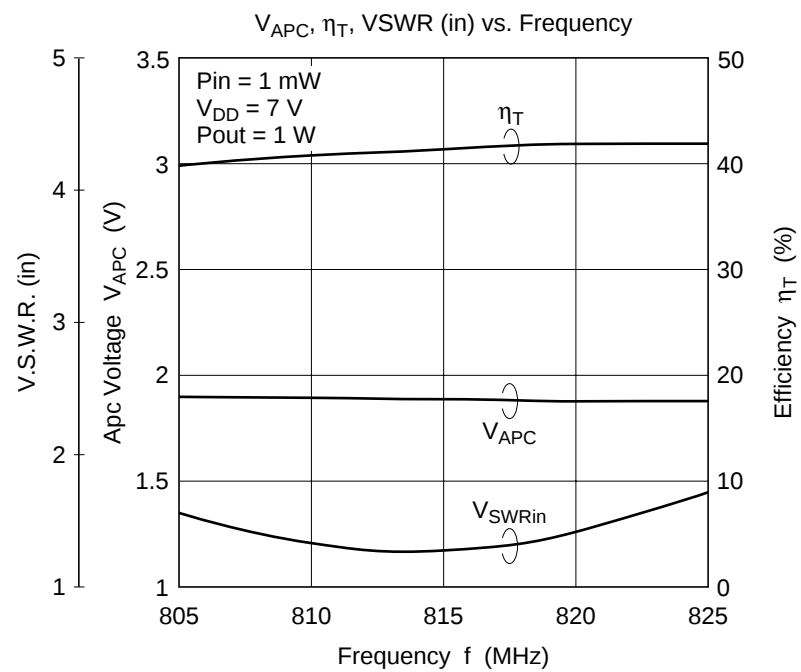
Absolute Maximum Ratings (T_c = 25°C)

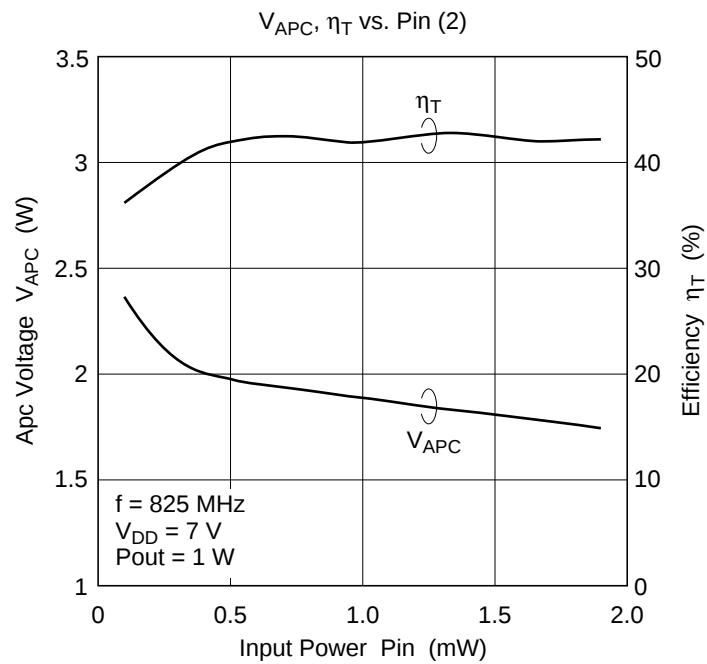
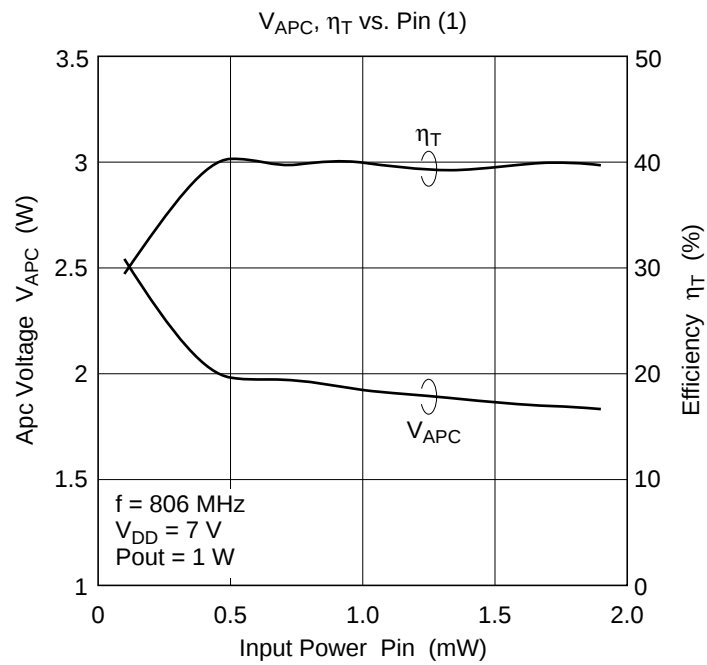
Item	Symbol	Rating	Unit
Supply voltage	V _{DD}	12	V
Supply current	I _{DD}	2	A
APC voltage	V _{APC}	3	V
Input power	P _{in}	20	mW
Operating case temperature	T _c (op)	−30 to +100	°C
Storage temperature	T _{stg}	−30 to +100	°C

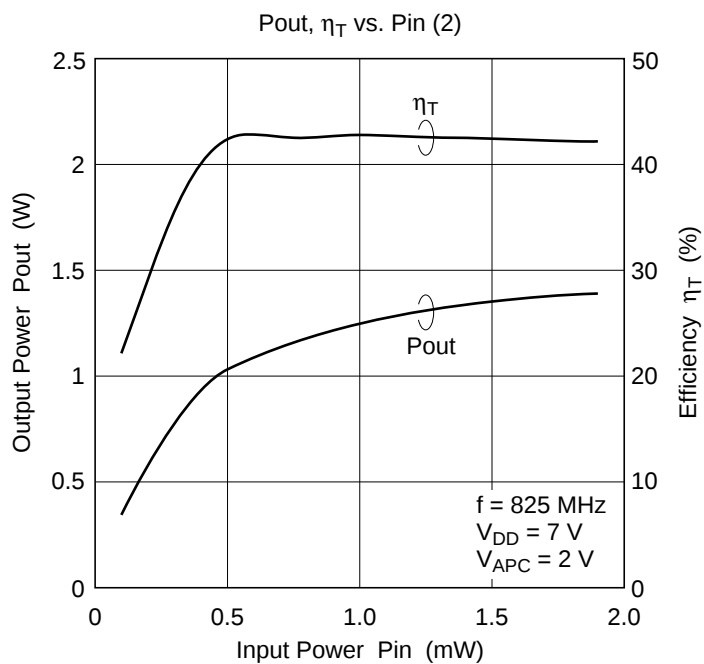
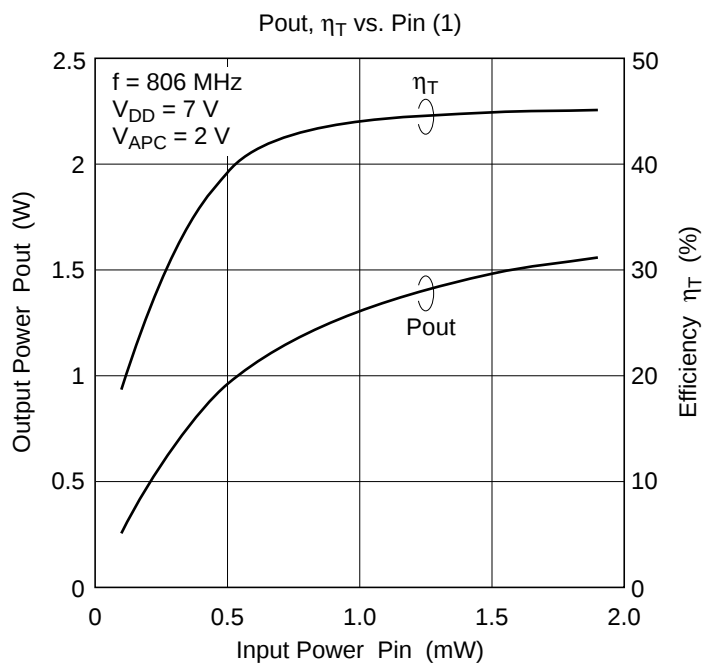
Electrical Characteristics ($T_c = 25^\circ\text{C}$)

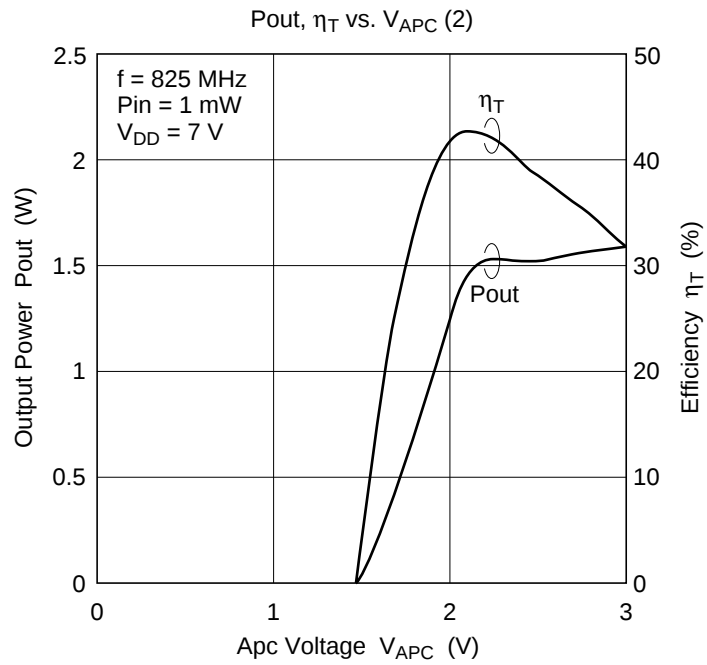
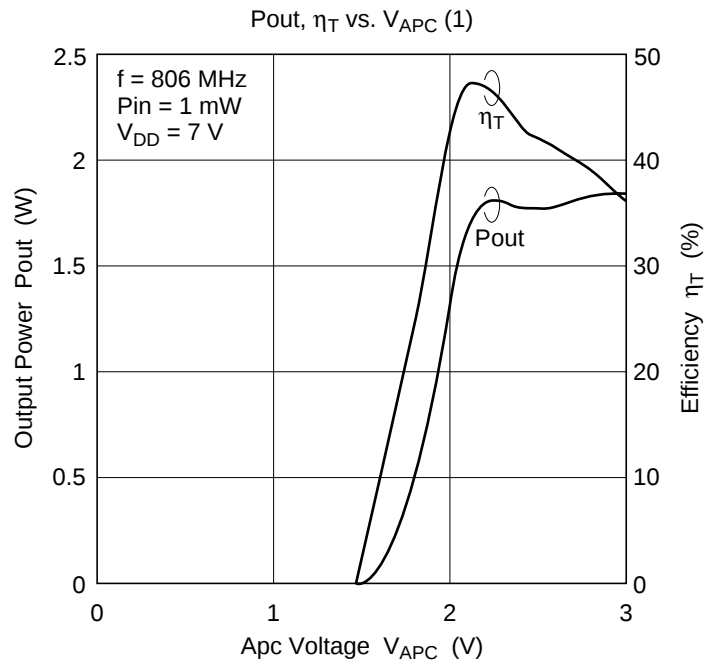
Item	Symbol	Min	Max	Unit	Test Condition
Drain cutoff current	I_{DS}	—	100	μA	$V_{DD} = 12\text{ V}$, $V_{APC} = 0\text{ V}$, $R_g = R_L = 50\ \Omega$
Total efficiency	η_T	35	—	%	$f = 806, 825\text{ MHz}$, $P_{in} = 1\text{ mW}$,
2nd harmonic distortion	2nd H.D.	—	−30	dBc	$V_{DD} = 7\text{ V}$, $R_g = R_L = 50\ \Omega$,
3rd harmonic distortion	3rd H.D.	—	−30	dBc	$P_{out} = 1.0\text{ W}$ (at APC controlled)
Input VSWR	VSWR (in)	—	3	—	
Output power	P_{out} (1)	1.4	—	W	$f = 806, 825\text{ MHz}$, $P_{in} = 1\text{ mW}$, $V_{DD} = 7\text{ V}$, $V_{APC} = 3\text{ V}$, $R_g = R_L = 50\ \Omega$
Isolation	—	—	−35	dBm	$f = 806, 825\text{ MHz}$, $P_{in} = 1\text{ mW}$, $V_{DD} = 7\text{ V}$, $V_{APC} = 0.5\text{ V}$, $R_g = R_L = 50\ \Omega$
Stability	—	No parasitic oscillation		—	$f = 806\text{ to }825\text{ MHz}$, $P_{in} = 1\text{ mW}$, $V_{DD} = 5\text{ to }7\text{ V}$, $P_{out} \leq 1.4\text{ W}$, $R_g = 50\ \Omega$, Load VSWR = 3:1 All phase angles

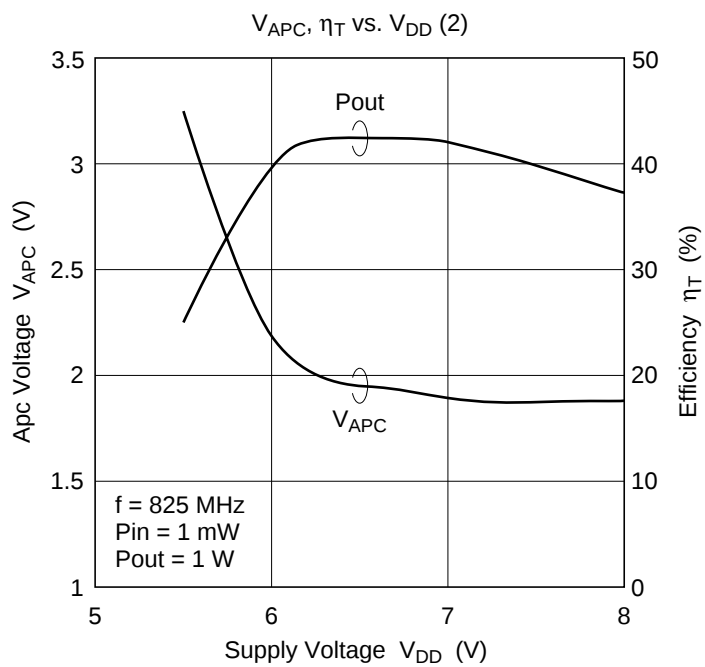
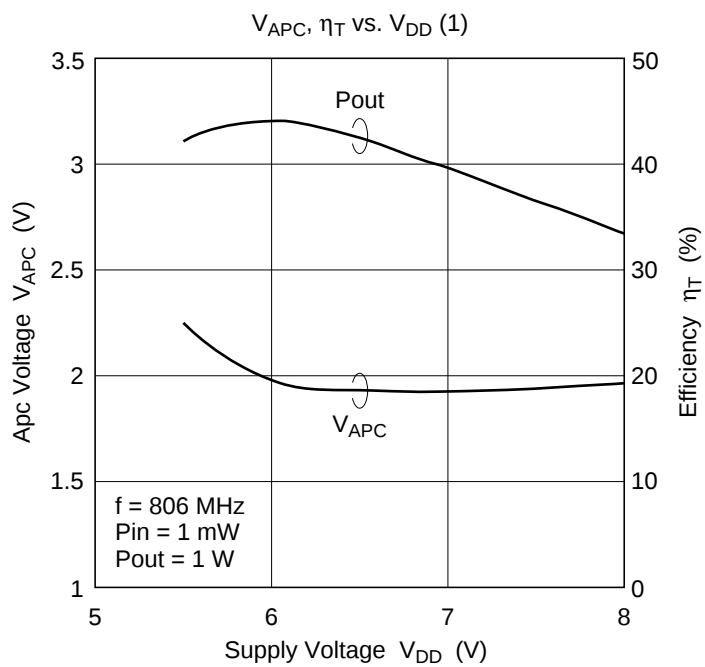
Characteristics Curve

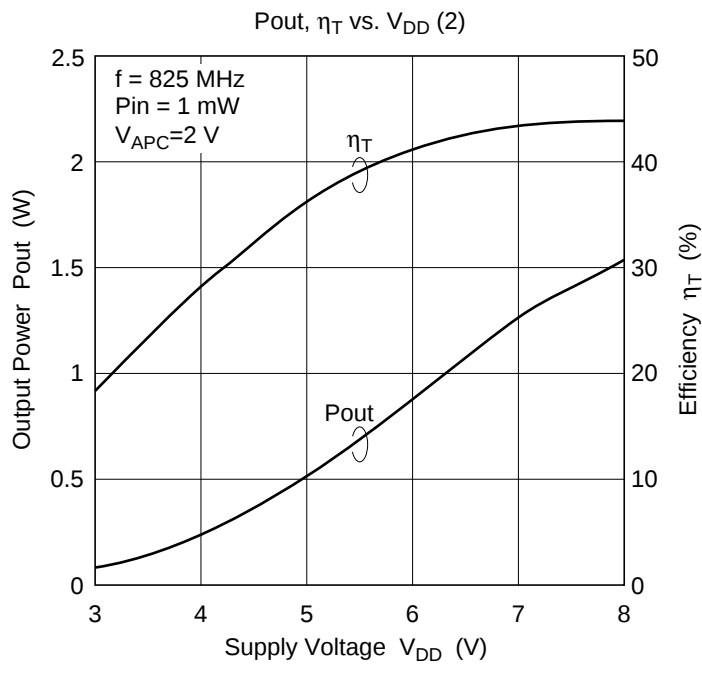
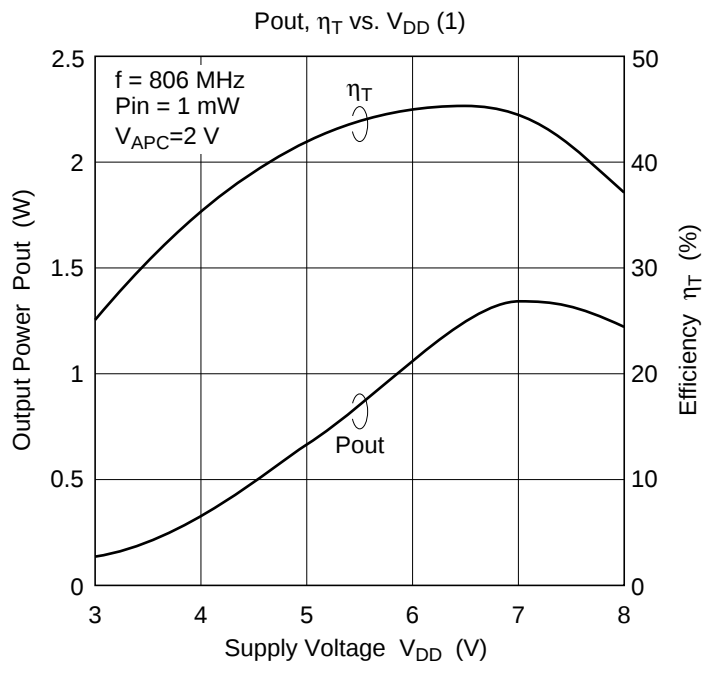




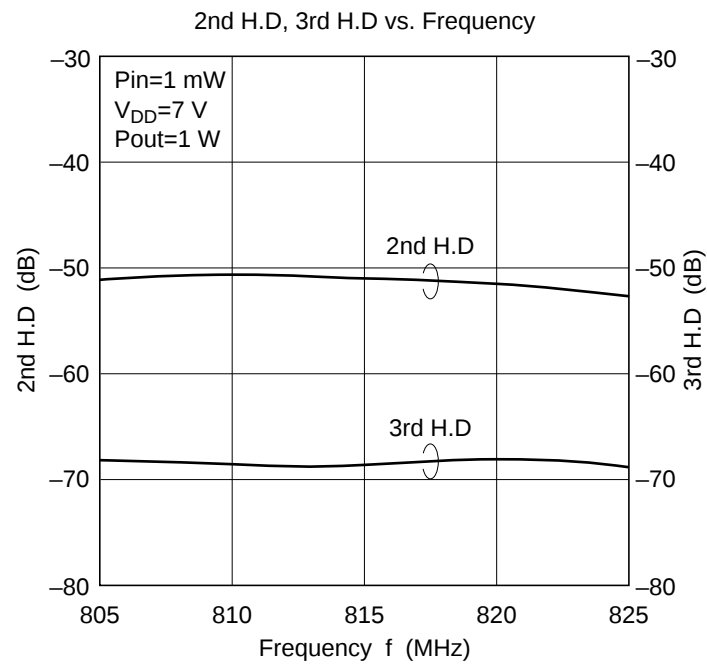








PF1016



The drawing shows the RF-E package with the following dimensions (in mm):

- Top view: Overall width 25 ± 0.5 , mounting hole spacing 22 ± 0.5 , mounting hole diameter $\phi 5$, lead spacing 12 ± 0.5 , lead width 5 , lead thickness 0.3 , lead length 2.35 ± 0.5 , lead pitch 0.25 , lead angle 5° .
- Side view: Overall height 3.7 ± 0.5 , mounting hole diameter $\phi 5$, lead thickness 0.3 , lead length 2.35 ± 0.5 .
- End view: Lead pitch 1.8 , lead width 5.1 , lead thickness 0.3 , lead length 7.6 , lead pitch 5.1 .

Hitachi code	RF-E
EIAJ code	—
JEDEC code	—

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