
PF0210

MOS FET Power Amplifier Module for ADC Mobile Phone

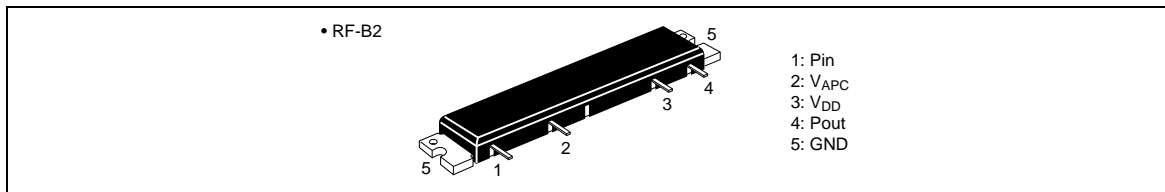
HITACHI

ADE-208-102E (Z)
Preliminary 6th. Edition
July 1996

Features

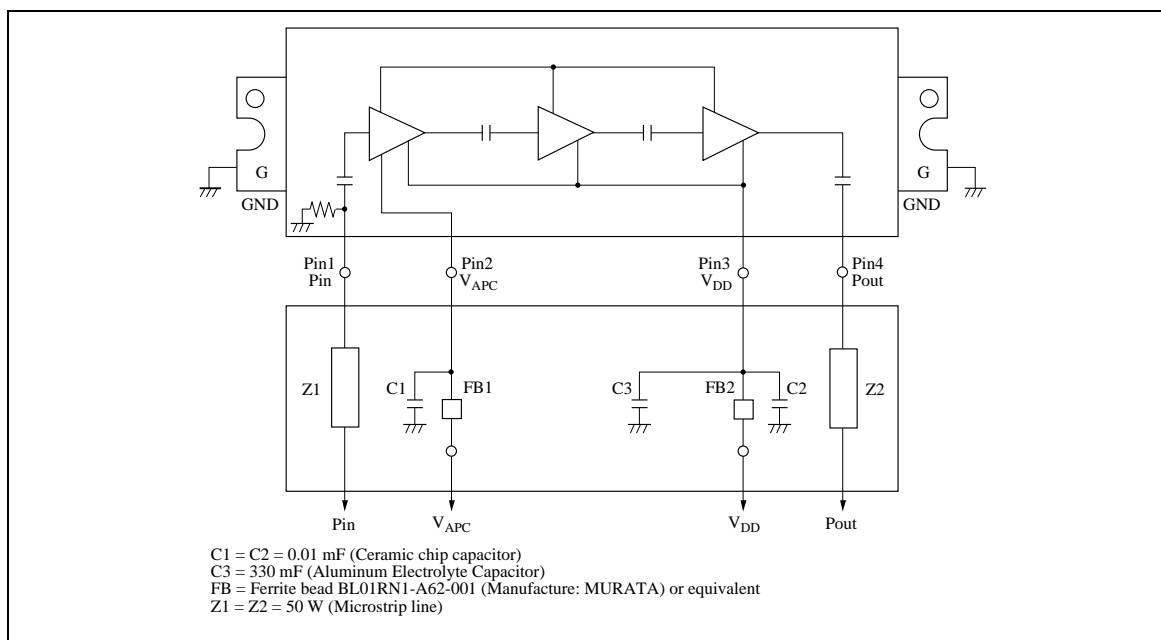
- High efficiency: 34% Typ for CW
30% Typ for $\pi/4$ -DQPSK
- Low input power: 0 dBm ave. Typ for $\pi/4$ -DQPSK
- Simple bias circuit
- High speed switching: 8 μ s Typ

Pin Arrangement



PF0210

Internal Diagram and External Circuit



Absolute Maximum Ratings ($T_c = 258C$)

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	17	V
Supply current	I_{DD}	4	A
V_{APC} voltage	V_{APC}	5.5	V
Input power	Pin	20	mW
Operating case temperature	T_c (op)	-30 to +100	8C
Storage temperature	T_{stg}	-40 to +110	8C

Electrical Characteristics (Tc = 258C)

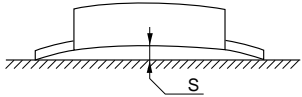
Analog Transmission

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency	f	824	—	849	MHz	—
Drain cutoff current	I _{DS}	—	—	500	μA	V _{DD} = 17 V, V _{APC} = 0 V
Total efficiency(1)	η _T (1)	30	34	—	%	Pin = 3 dBm, V _{DD} = 12.5 V, Pout = 6 W (V _{APC} controlled),
2 nd harmonic distortion	2nd H.D.	—	-50	-30	dBc	
3rd harmonic distortion	3rd H.D.	—	-60	-40	dBc	
Input VSWR	VSWR (in)	—	2	3	—	
Output power	Pout	6	12	—	W	Pin = 3 dBm, V _{DD} = 12.5 V, V _{APC} = 4 V
Isolation	—	—	-50	-40	dBm	Pin = 3dBm, V _{DD} = 12.5 V, V _{APC} = 0.5 V
Stability	—	No parasitic oscillation			—	Pin = 3 dBm, V _{DD} = 12.5 V, Pout ≤ 6 W, Output VSWR = 20:1 All phases

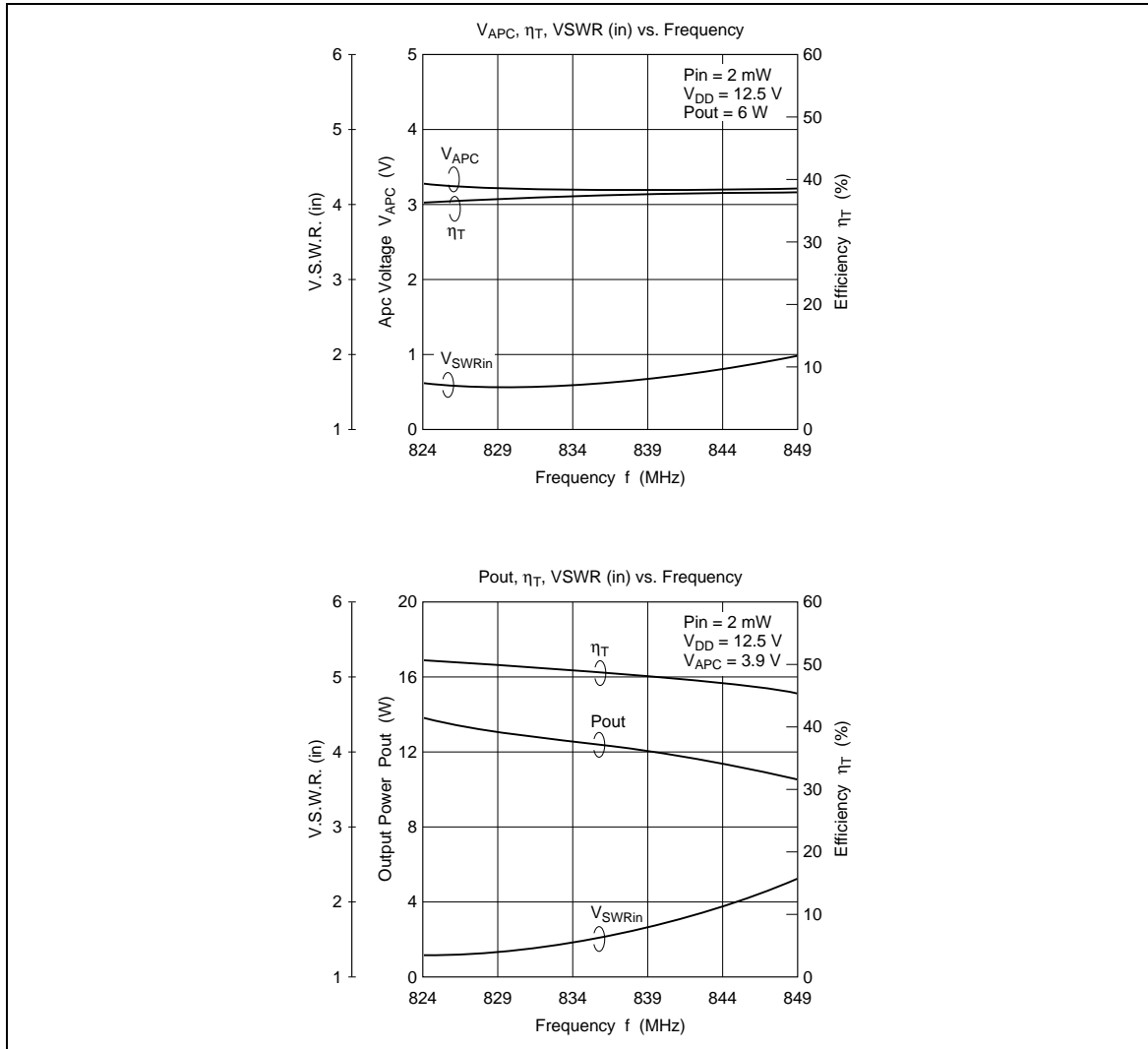
Digital Transmission

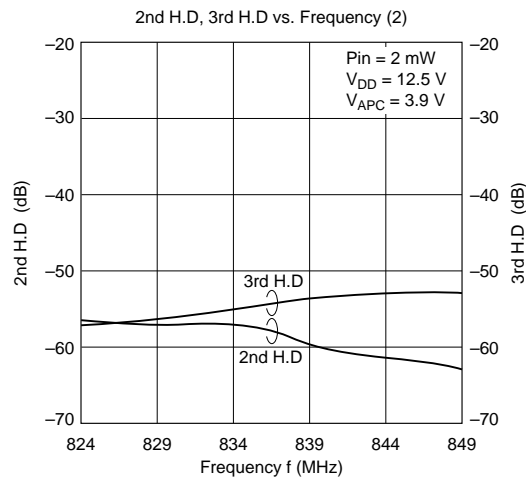
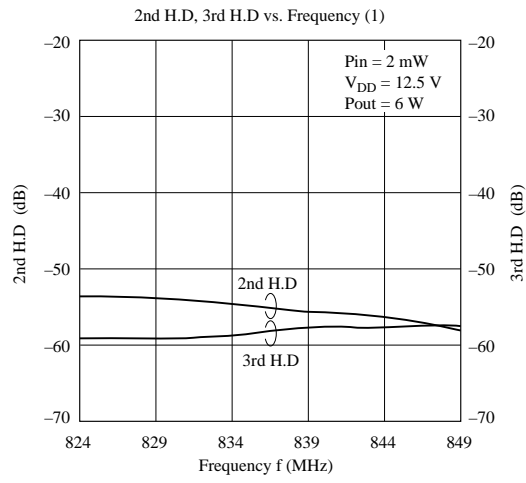
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Frequency	f	824	—	849	MHz	—
Total efficiency(2)	η _T (2)	25	30	—	%	Pin controlled (π/4-DQPSK, β = 0.35, 48.6 kbps), BW =24.3 kHz with Root Nyquist Filter, Pout = 5.5 W ave., V _{DD} = 12.5 V V _{APC} = 3.9 V
Adjacent channel leakage power	P _{ADJ} (30k)	—	-30	-28	dBc	
	P _{ADJ} (60k)	—	-50	-46	dBc	
Input power	Pin	—	—	5	dBm ave.	

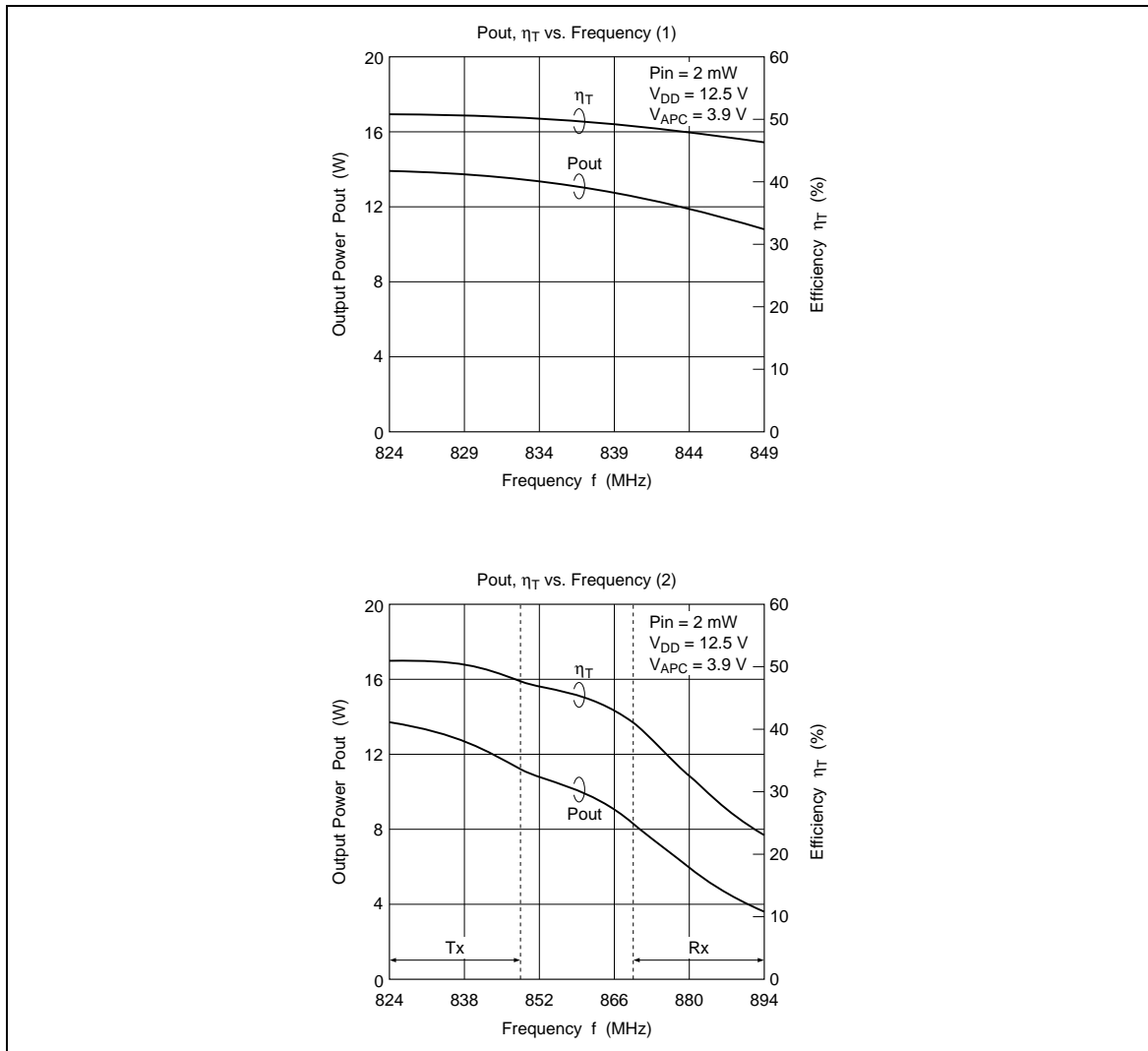
Mechanical Characteristics

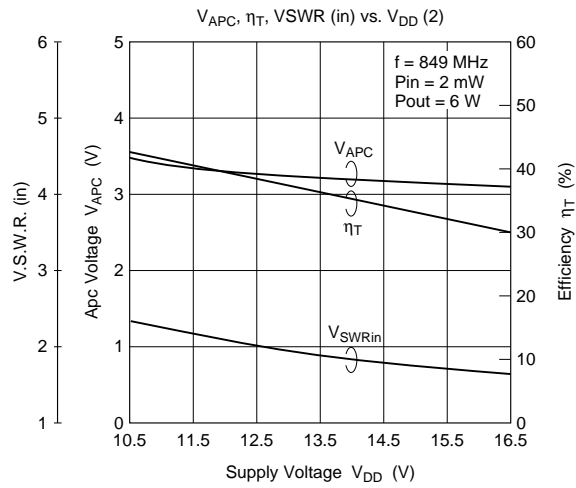
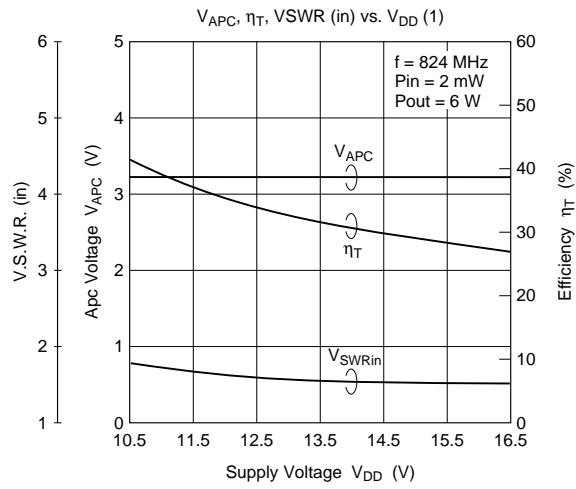
Item	Conditions	Spec
Torque for screw up the heatsink flange	M3 Screw Bolts	4 to 6 kg•cm
Warp size of the heatsink flange: S		S = 0
		+0.3/- 0 mm

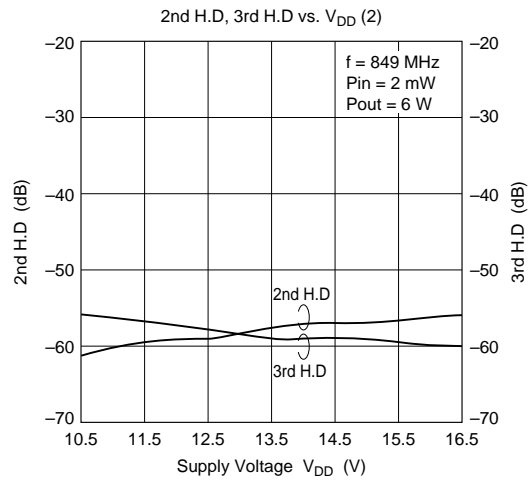
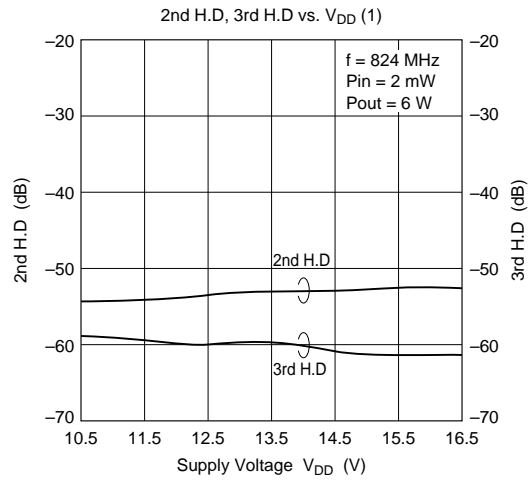
Characteristics Curve

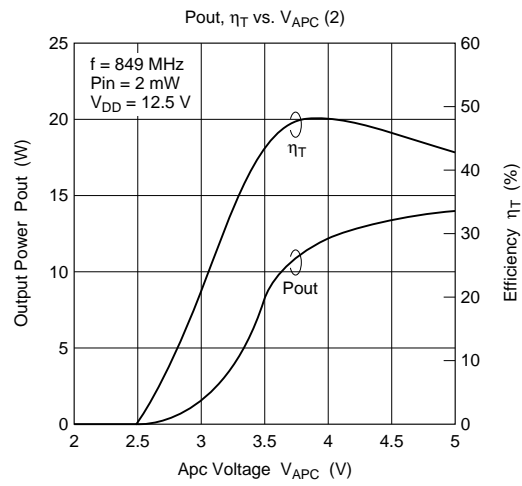
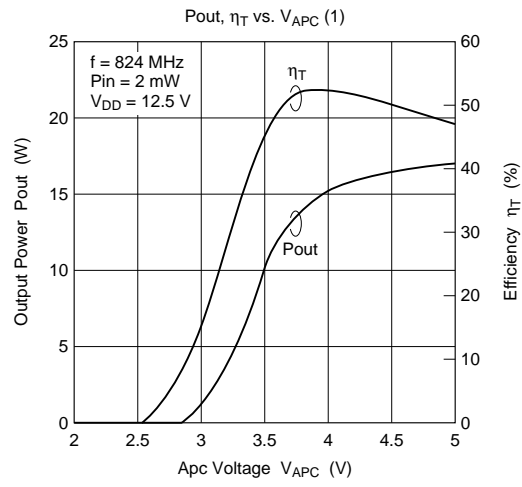


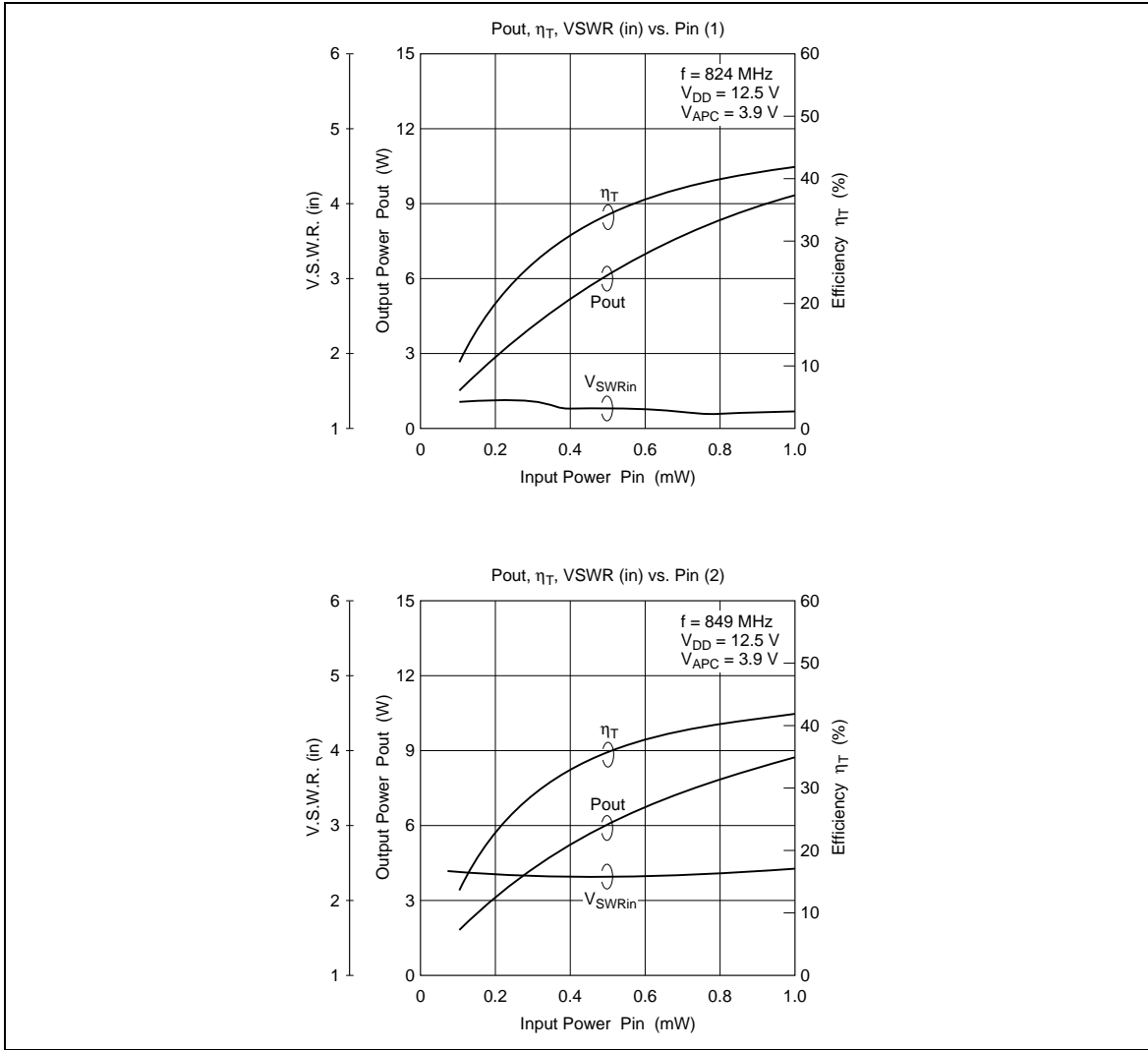






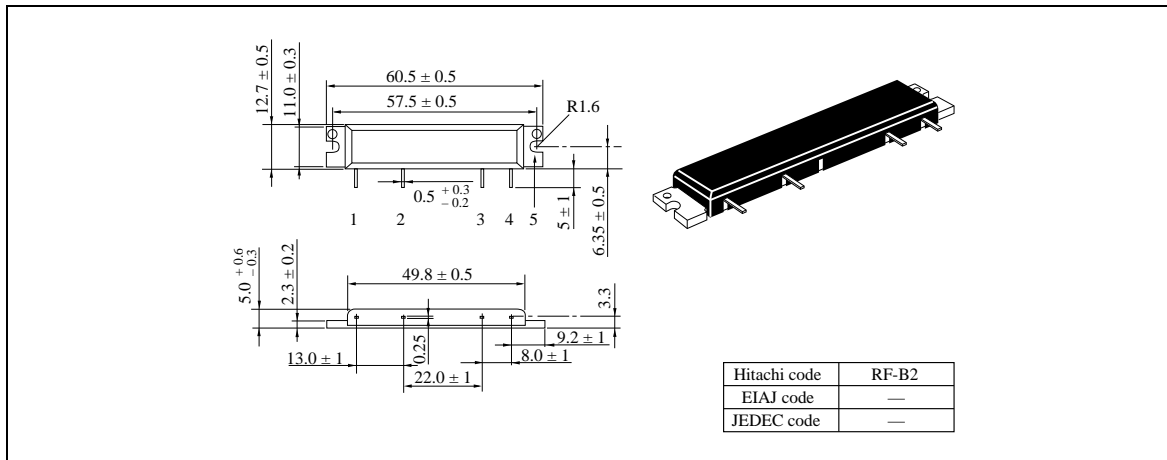






Package Dimensions

Unit: mm



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