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# PF0047A/PF0067A

MOS FET Power Amplifier Module for E-TACS Handy Phone

# HITACHI

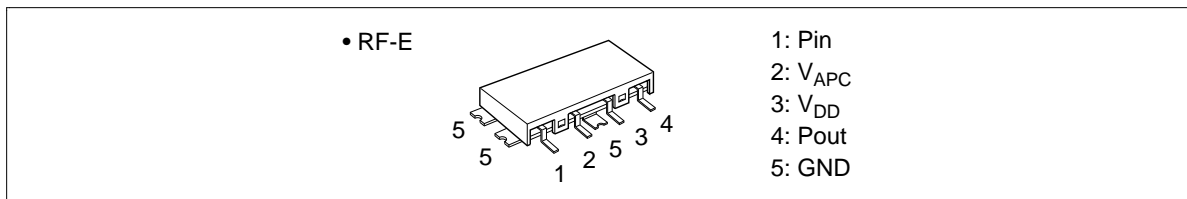
ADE-208-311B (Z)  
Preliminary 3rd. Edition  
July 1996

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## Features

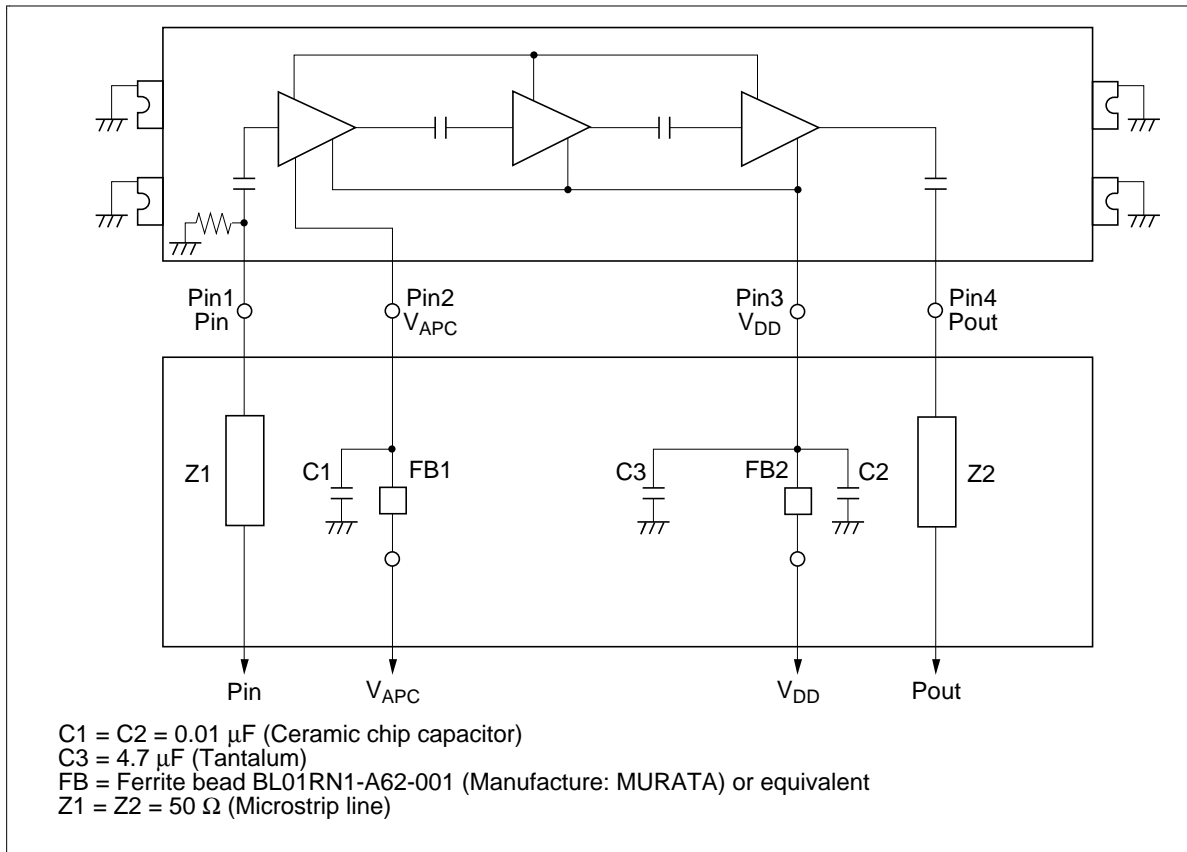
- High Efficiency
  - PF0047A: 58 % Typ at 1.2 W
  - PF0067A: 52 % Typ at 1.2 W
- Low voltage operation: 4.8 V
- High power gain: 1 mW input
- Low power control current: 500  $\mu$ A Typ
- Reflowable surface mounted small package: 1 cc, 3 g

## Pin Arrangement



# PF0047A/PF0067A

## Internal Diagram and External Circuit



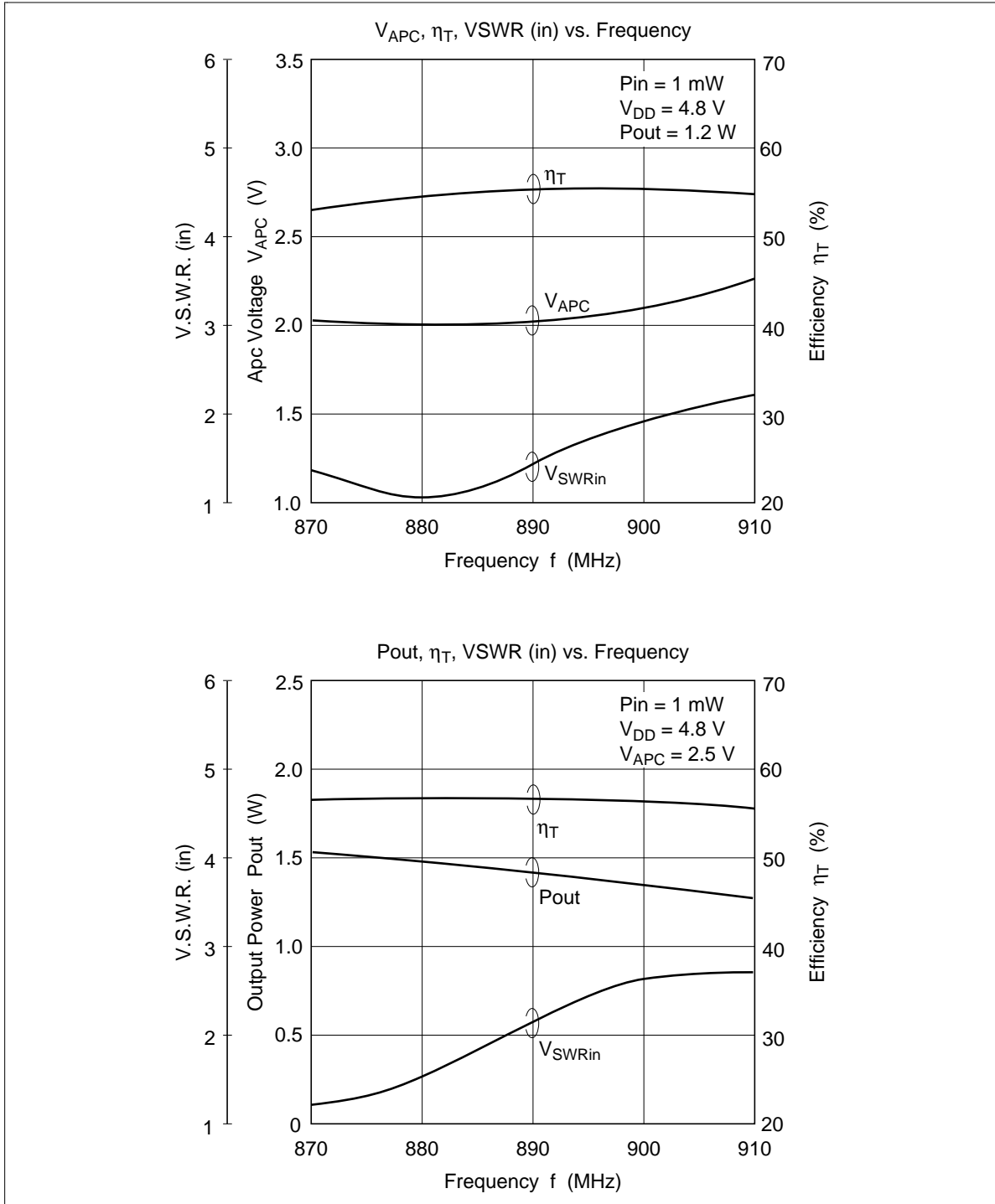
### Absolute Maximum Ratings ( $T_c = 258\text{C}$ )

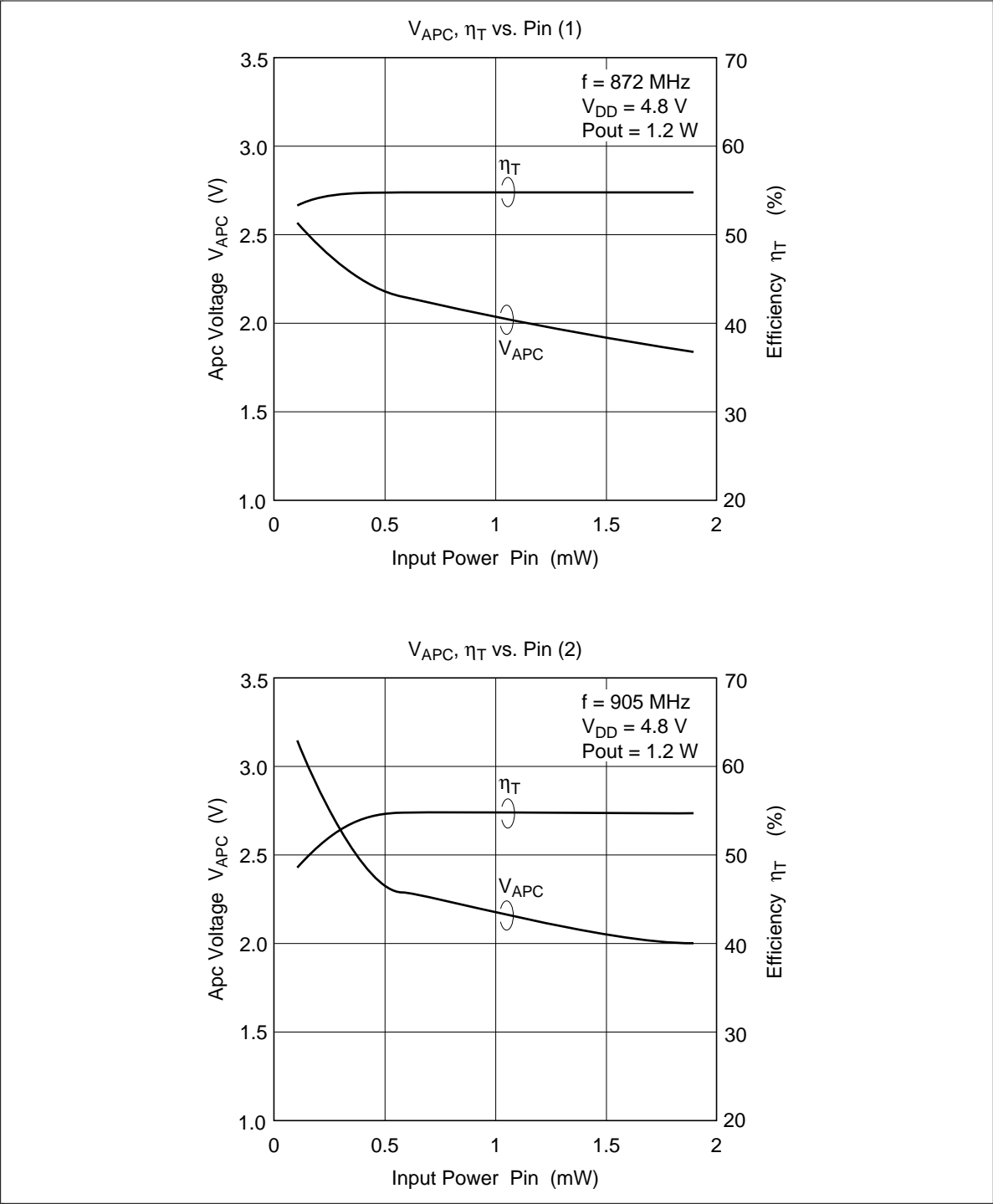
Item	Symbol	Rating	Unit
Supply voltage	$V_{DD}$	10	V
Supply current	$I_{DD}$	1.5	A
$V_{APC}$ voltage	$V_{APC}$	4.5	V
Input power	Pin	20	mW
Operating case temperature	$T_c$ (op)	-30 to +100	8C
Storage temperature	$T_{stg}$	-30 to +100	8C

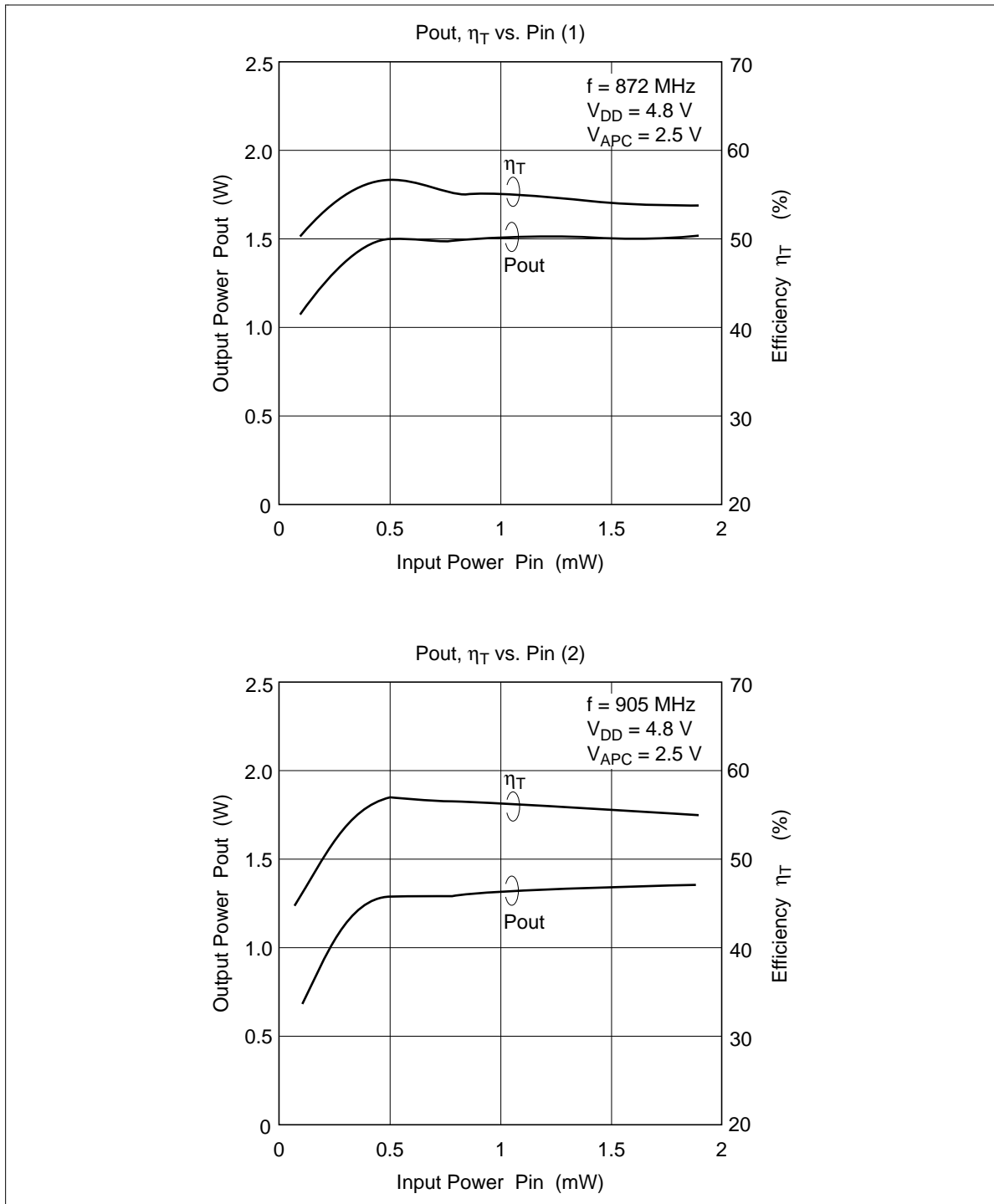
**Electrical Characteristics (Tc = 258C)**

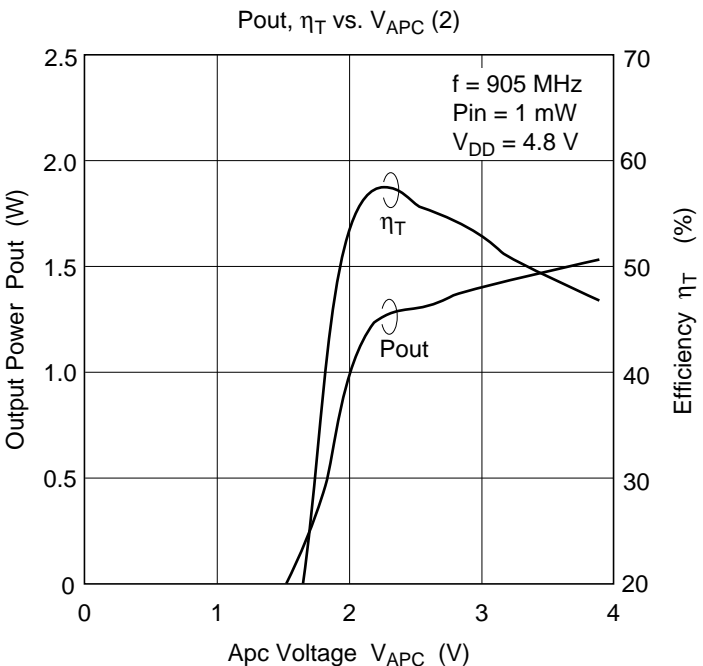
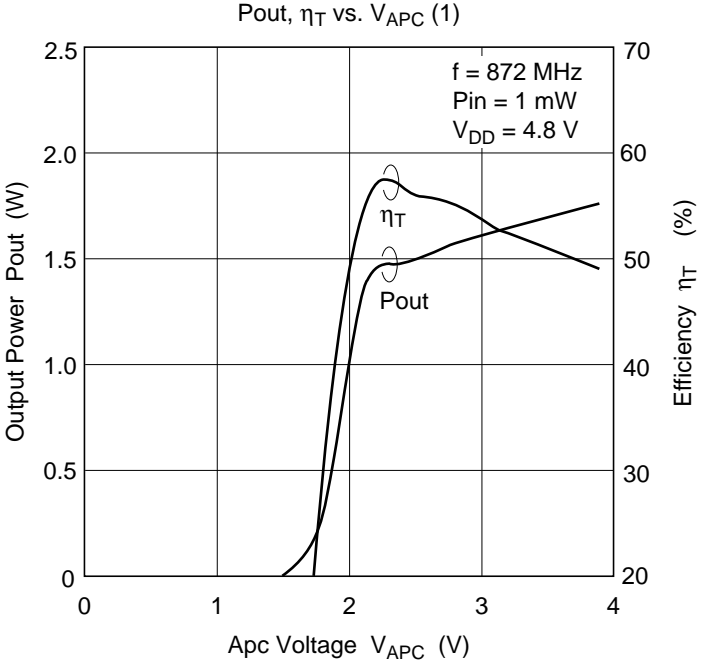
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	$I_{DS}$	—	—	100	$\mu A$	$V_{DD} = 10 V, V_{APC} = 0 V,$ $R_L = R_g = 50 \Omega$
Total efficiency (PF0047A) $\eta_T$		53	58	—	%	$f = 872, 905 MHz,$
Total efficiency (PF0067A) $\eta_T$		48	52	—	%	$P_{in} = 1 mW, V_{DD} = 4.8 V,$
2nd harmonic distortion	2nd H.D.	—	-35	-30	dBc	$P_{out} = 1.2 W$ (at $V_{APC}$ controlled),
3rd harmonic distortion	3rd H.D.	—	-40	-30	dBc	$R_L = R_g = 50 \Omega$
Input VSWR	VSWR (in)	—	2	3	—	
Output power	$P_{out}$	1.25	1.4	—	W	$f = 872, 905 MHz,$ $P_{in} = 1 mW, V_{DD} = 4.8 V,$ $V_{APC} = 4 V, R_L = R_g = 50 \Omega$
Isolation	—	—	-40	-35	dBm	$f = 872, 905 MHz,$ $P_{in} = 1 mW, V_{DD} = 4.8 V$ $V_{APC} = 0.5 V, R_L = R_g = 50 \Omega$
Stability	—	No parasitic oscillation			—	$f = 872$ to $905 MHz, P_{in} = 1 mW,$ $V_{DD} = 4.3$ to $6 V, P_{out} \leq 1.4 W,$ $R_g = 50 \Omega,$ Load VSWR = 3:1, All phases angles
Load VSWR tolerance	—	No degradation			—	$f = 872$ to $905 MHz, P_{in} = 1 mW,$ $t = 10 sec., V_{DD} = 4.3$ to $6 V,$ $P_{out} \leq 1.4 W, R_g = 50 \Omega,$ Load VSWR = 20:1, All phases angles

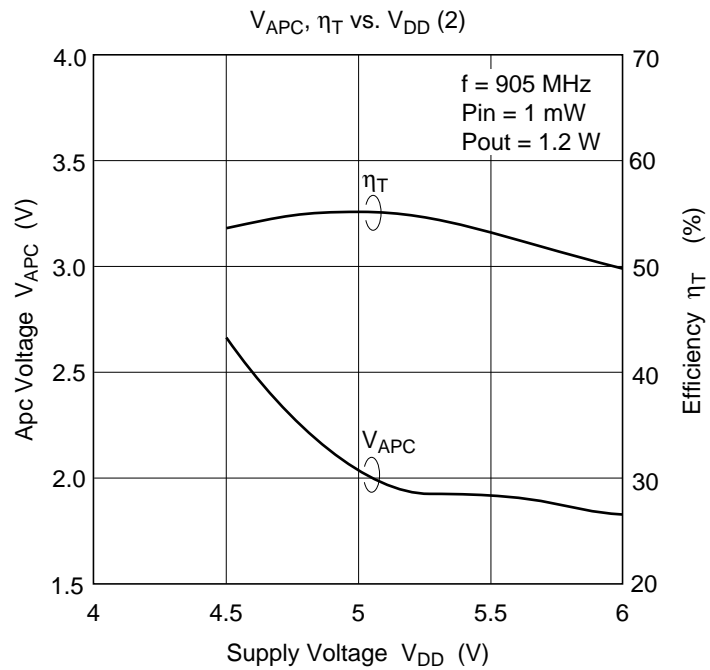
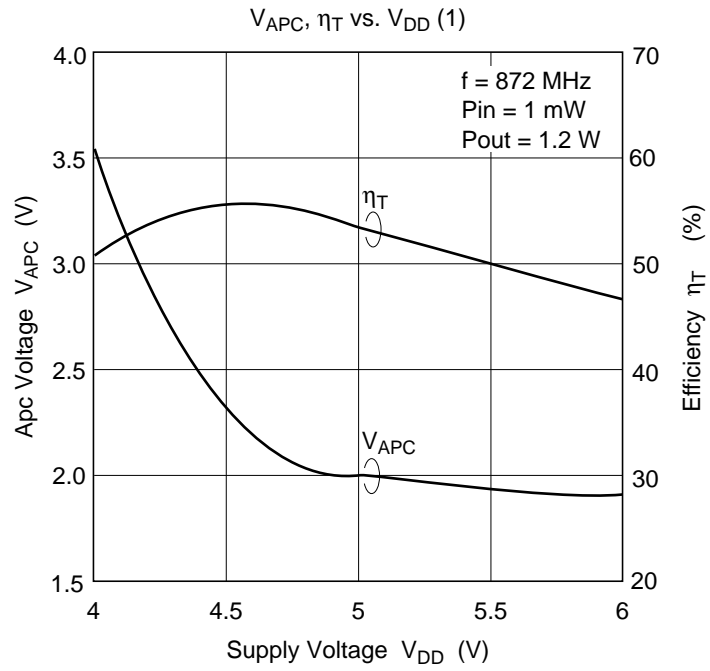
**Characteristics Curve**









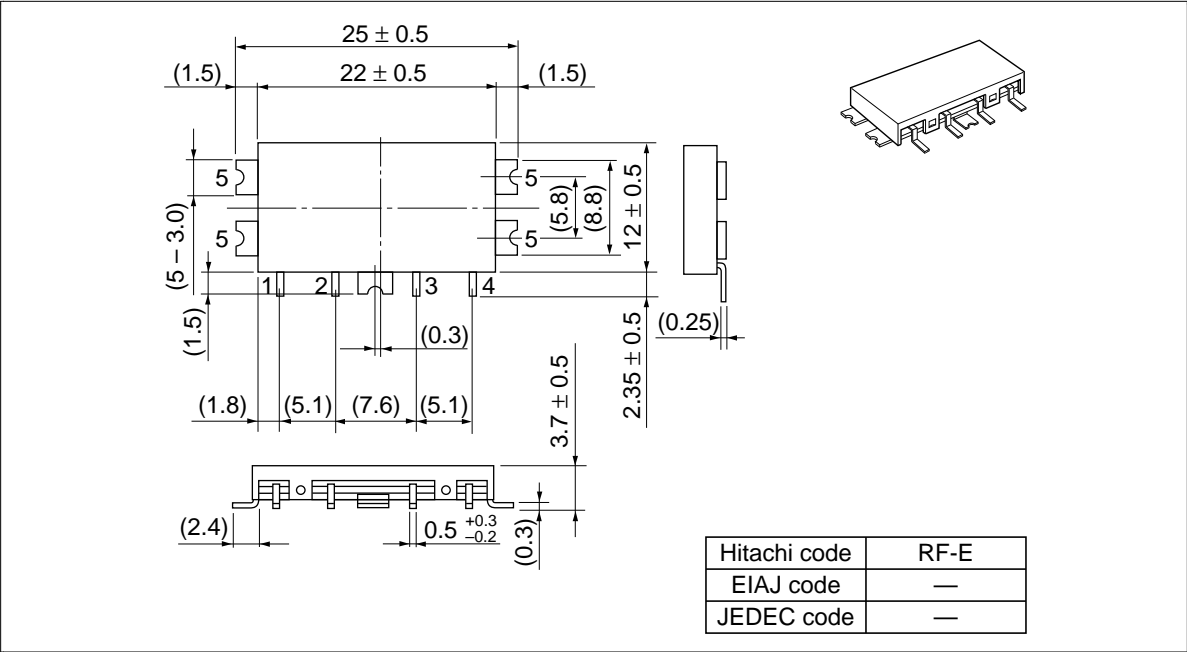




**PF0047A/PF0067A**

**Package Dimensions**

Unit: mm



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