
PF0047A/PF0067A

MOS FET Power Amplifier Module for E-TACS Handy Phone

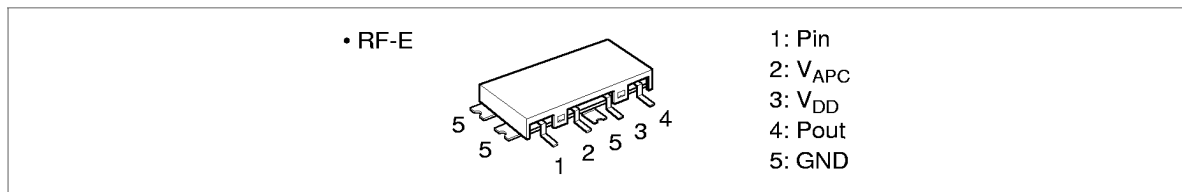
HITACHI

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

Features

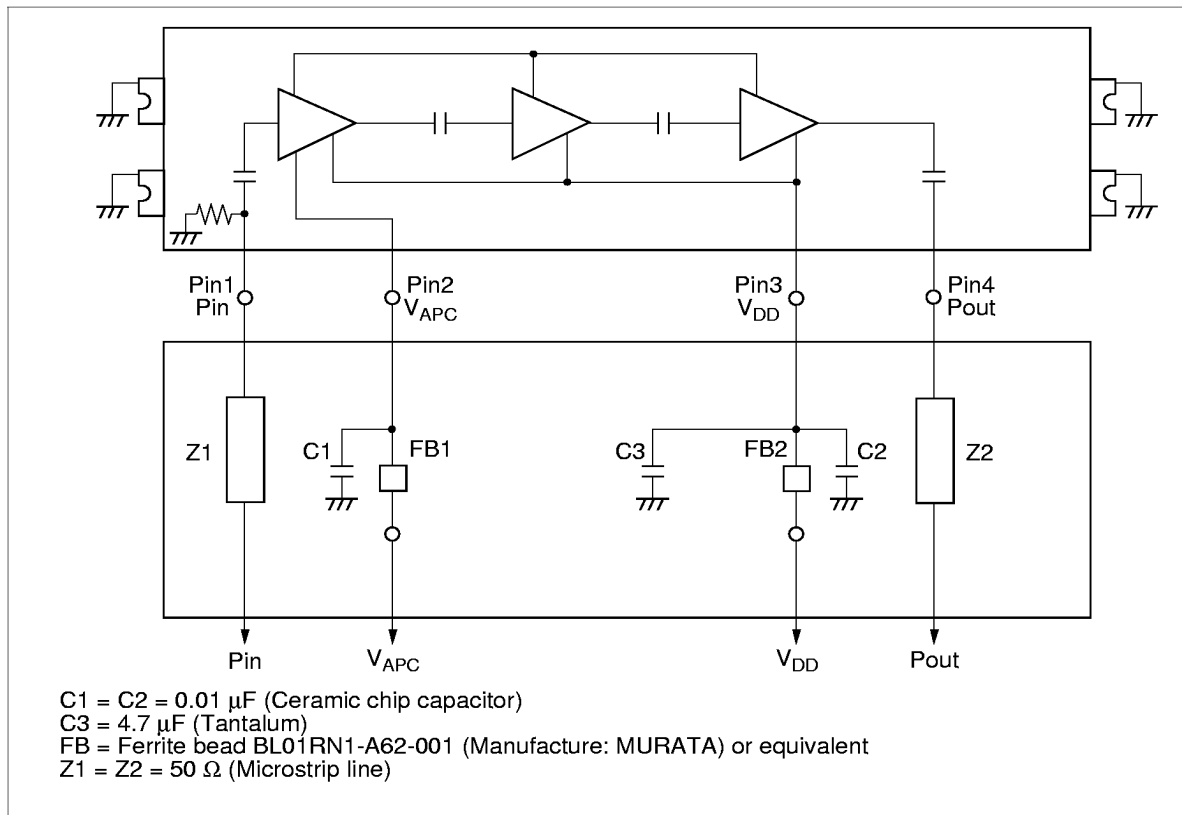
- High Efficiency
 - PF0047A: 58 % Typ at 1.2 W
 - PF0067A: 52 % Typ at 1.2 W
- Low voltage operation: 4.8 V
- High power gain: 1 mW input
- Low power control current: 500 μ A Typ
- Reflowable surface mounted small package: 1 cc, 3 g

Pin Arrangement



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Internal Diagram and External Circuit



Absolute Maximum Ratings ($T_c = 258C$)

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	$^{\circ}C$
Storage temperature	T_{stg}	-30 to +100	$^{\circ}C$

Electrical Characteristics (T_c = 258C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I _{DS}	—	—	100	μA	V _{DD} = 10 V, V _{APC} = 0 V, R _L = R _g = 50 Ω
Total efficiency (PF0047A) η _T		53	58	—	%	f = 872, 905 MHz,
Total efficiency (PF0067A) η _T		48	52	—	%	Pin = 1 mW, V _{DD} = 4.8 V,
2nd harmonic distortion	2nd H.D.	—	−35	−30	dBc	Pout = 1.2 W (at V _{APC} controlled),
3rd harmonic distortion	3rd H.D.	—	−40	−30	dBc	R _L = R _g = 50 Ω
Input VSWR	VSWR (in)	—	2	3	—	
Output power	Pout	1.25	1.4	—	W	f = 872, 905 MHz, Pin = 1 mW, V _{DD} = 4.8 V, V _{APC} = 4 V, R _L = R _g = 50 Ω
Isolation	—	—	−40	−35	dBm	f = 872, 905 MHz, Pin = 1 mW, V _{DD} = 4.8 V V _{APC} = 0.5 V, R _L = R _g = 50 Ω
Stability	—	No parasitic oscillation			—	f = 872 to 905 MHz, Pin = 1 mW, V _{DD} = 4.3 to 6 V, Pout ≤ 1.4 W, R _g = 50 Ω, Load VSWR = 3:1, All phases angles
Load VSWR tolerance	—	No degradation			—	f = 872 to 905 MHz, Pin = 1 mW, t = 10 sec., V _{DD} = 4.3 to 6 V, Pout ≤ 1.4 W, R _g = 50 Ω, Load VSWR = 20:1, All phases angles

Characteristics Curve

