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# PF0045A/PF0065A

MOS FET Power Amplifier Module for AMPS Handy Phone

## HITACHI

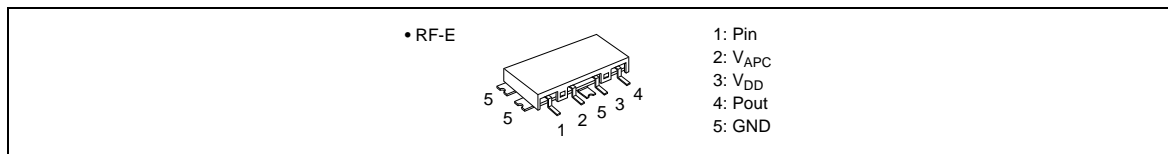
ADE-208-309B (Z)  
Preliminary 3rd. Edition  
July 1996

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### Features

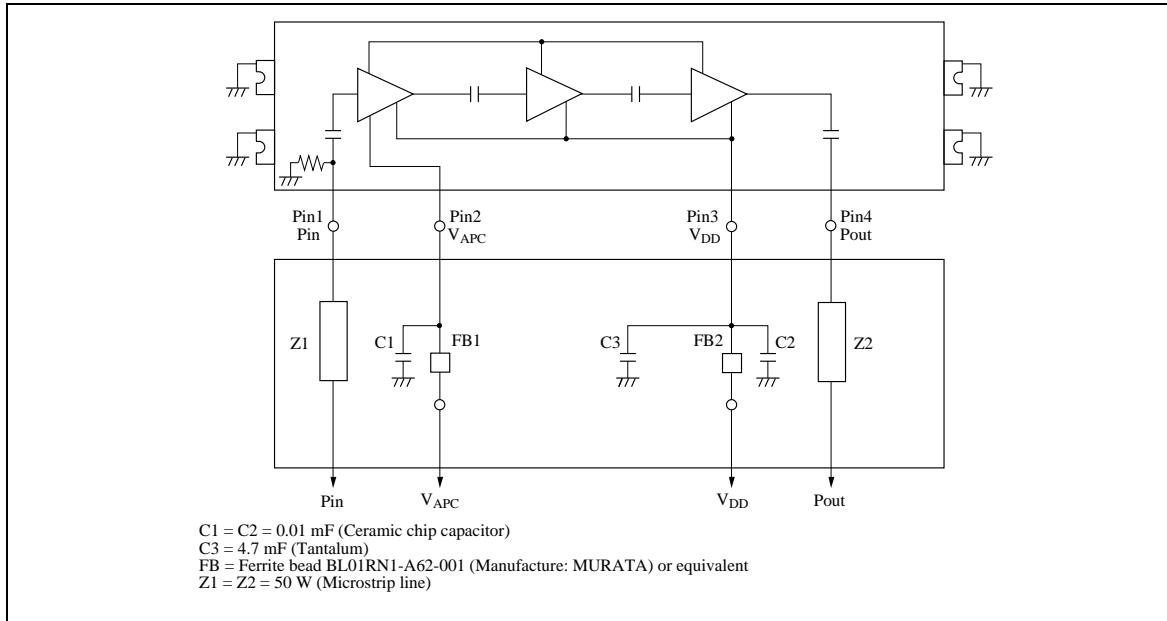
- High efficiency  
PF0045A: 58 % Typ at 1.2 W  
PF0065A: 52 % Typ at 1.2 W
- Low voltage operation: 4.8 V
- High power gain: 1 mW input
- Low power control current: 500  $\mu$ A Typ
- Reflowable surface mounted small package: 1 cc, 3 g

### Pin Arrangement



# PF0045A/PF0065A

## Internal Diagram and External Circuit



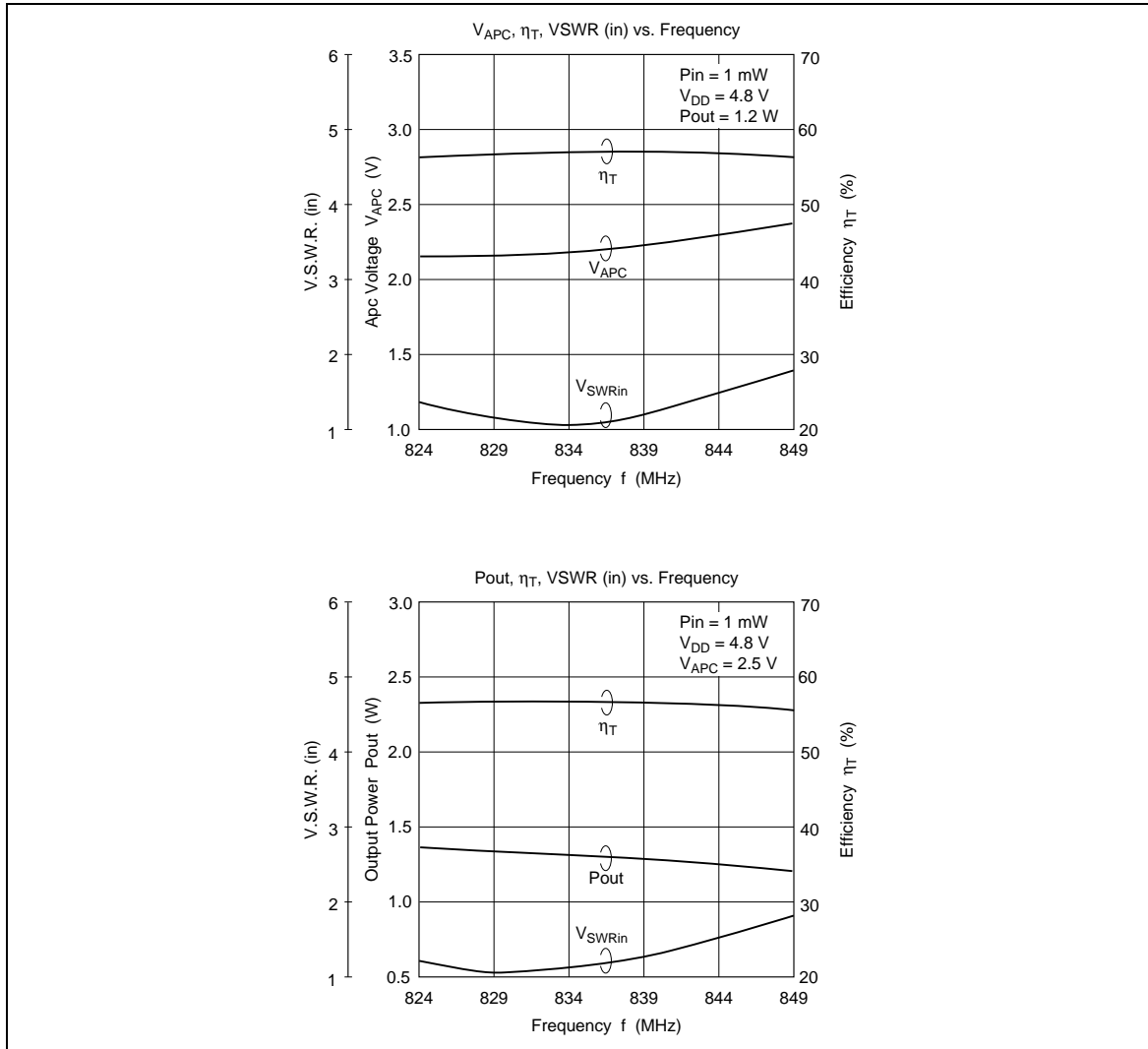
## Absolute Maximum Ratings ( $T_c = 25^\circ\text{C}$ )

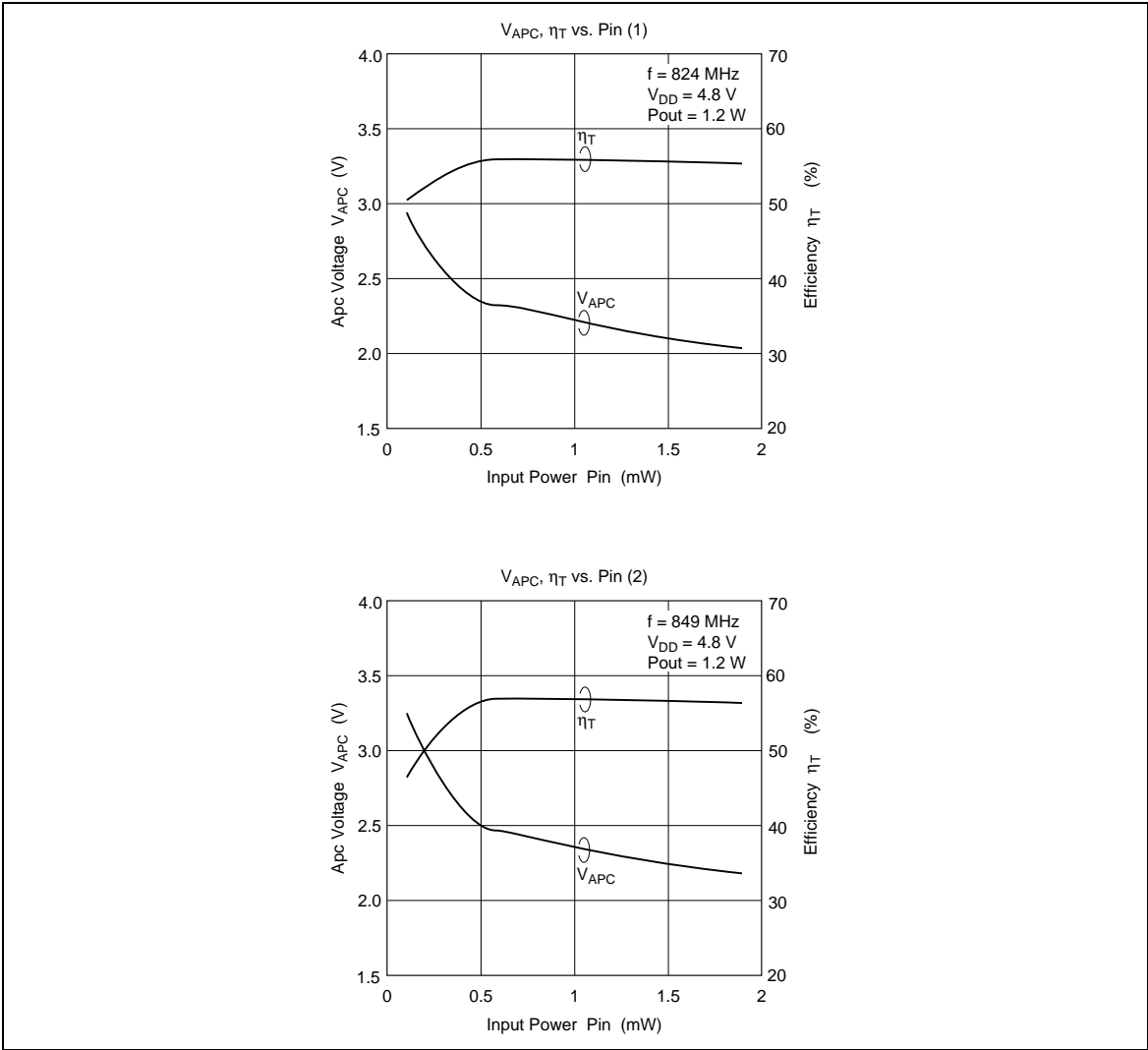
Item	Symbol	Rating	Unit
Supply voltage	$V_{DD}$	10	V
Supply current	$I_{DD}$	1.5	A
$V_{APC}$ voltage	$V_{APC}$	4.5	V
Input power	Pin	20	mW
Operating case temperature	$T_c$ (op)	-30 to +100	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$

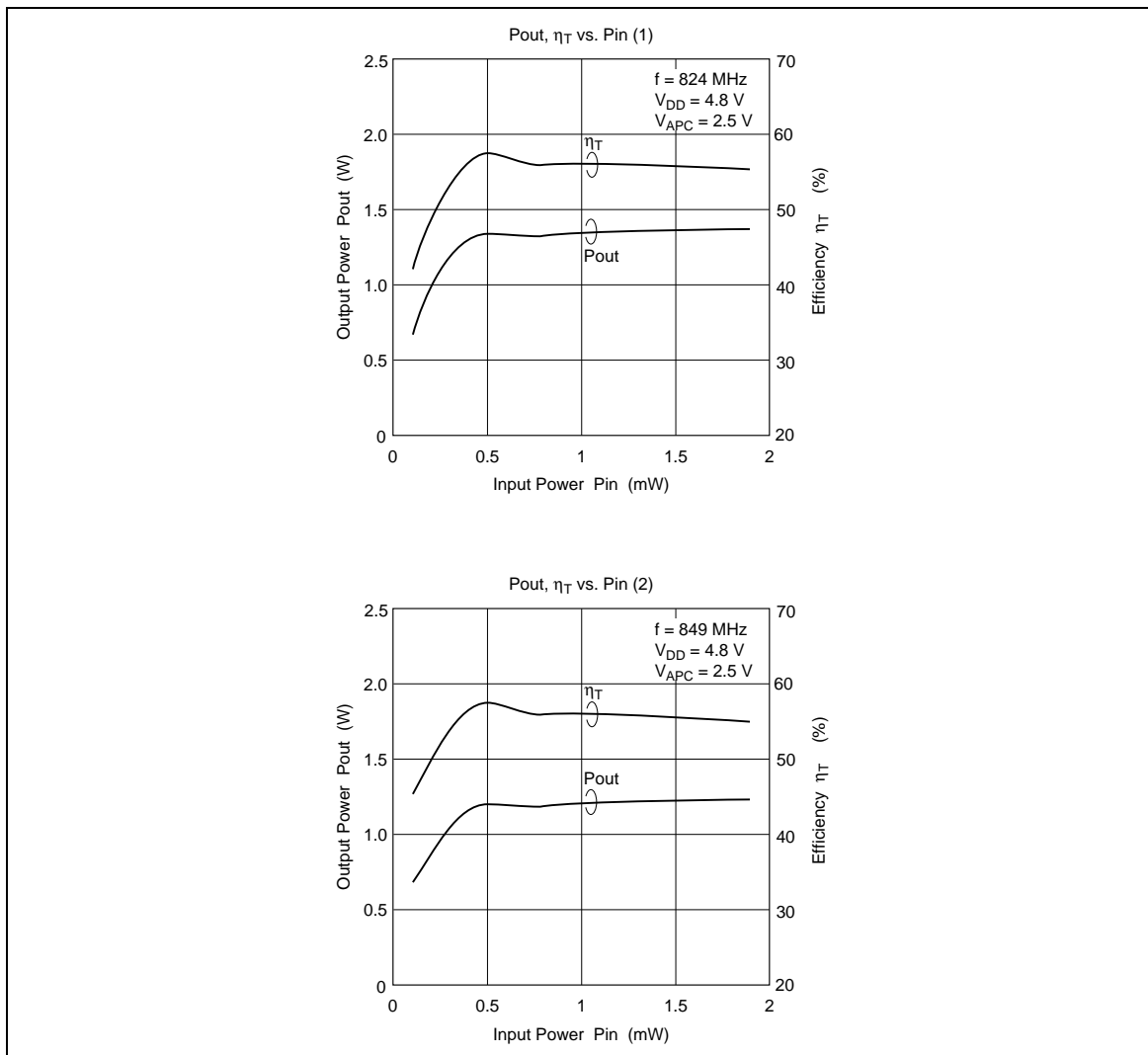
**Electrical Characteristics (T<sub>c</sub> = 25°C)**

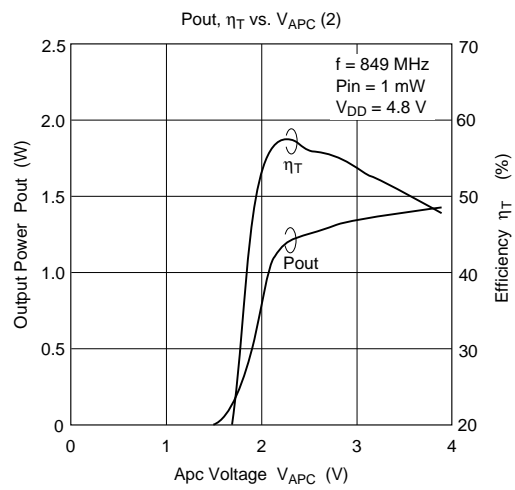
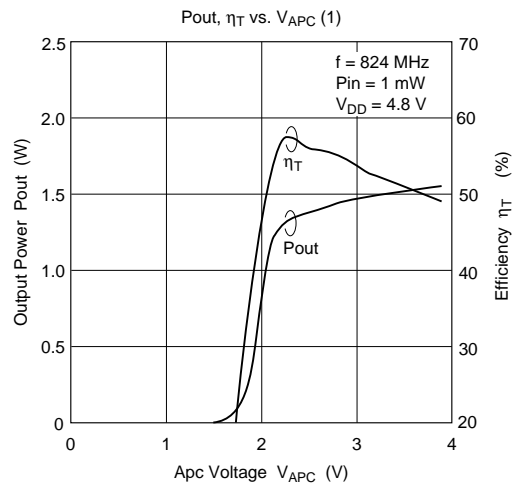
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I <sub>DS</sub>	—	—	100	μA	V <sub>DD</sub> = 10 V, V <sub>APC</sub> = 0 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω
Total efficiency (PF0045A)	η <sub>r</sub>	53	58	—	%	f = 824, 849 MHz,
Total efficiency (PF0065A)	η <sub>r</sub>	48	52	—	%	P <sub>in</sub> = 1 mW, V <sub>DD</sub> = 4.8 V,
2nd harmonic distortion	2nd H.D.	—	-35	-30	dBc	P <sub>out</sub> = 1.2 W (at V <sub>APC</sub> controlled), R <sub>L</sub> = R <sub>g</sub> = 50 Ω
3rd harmonic distortion	3rd H.D.	—	-40	-30	dBc	
Input VSWR	VSWR (in)	—	2	3	—	
Output power	P <sub>out</sub>	1.25	1.4	—	W	f = 824, 849 MHz, P <sub>in</sub> = 1 mW, V <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 4 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω
Isolation	—	—	-40	-35	dBm	f = 824, 849 MHz, P <sub>in</sub> = 1 mW, V <sub>DD</sub> = 4.8 V, V <sub>APC</sub> = 0.5 V, R <sub>L</sub> = R <sub>g</sub> = 50 Ω
Stability	—	No parasitic oscillation			—	f = 824 to 849 MHz, P <sub>in</sub> = 1 mW, V <sub>DD</sub> = 4.3 to 6 V, P <sub>out</sub> ≤ 1.4 W, R <sub>g</sub> = 50 Ω, Load VSWR = 3:1 All phases angles
Load VSWR tolerance	—	No degradation			—	f = 824 to 849 MHz, P <sub>in</sub> = 1 mW, t = 10 sec., V <sub>DD</sub> = 4.3 to 6 V, P <sub>out</sub> ≤ 1.4 W, R <sub>g</sub> = 50 Ω, Load VSWR = 20:1 All phases angles

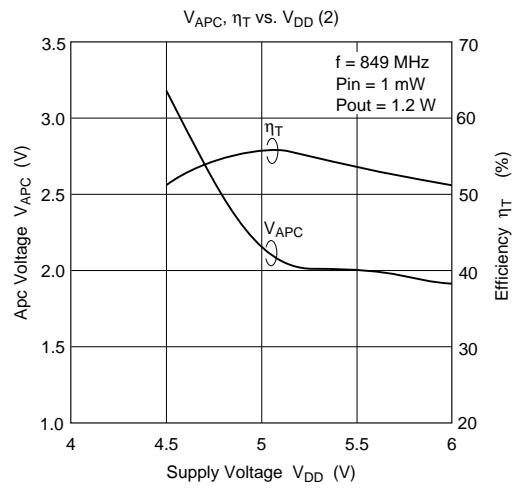
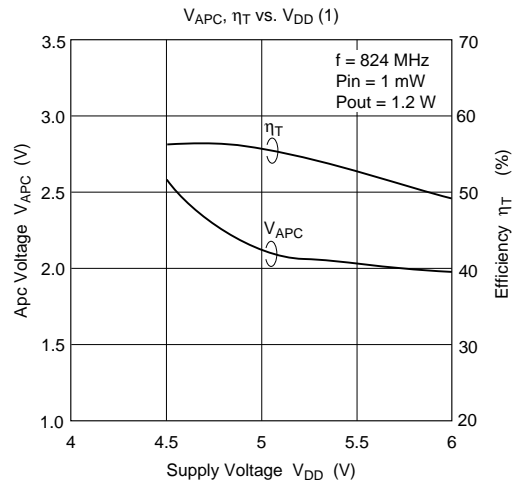
Characteristics Curve







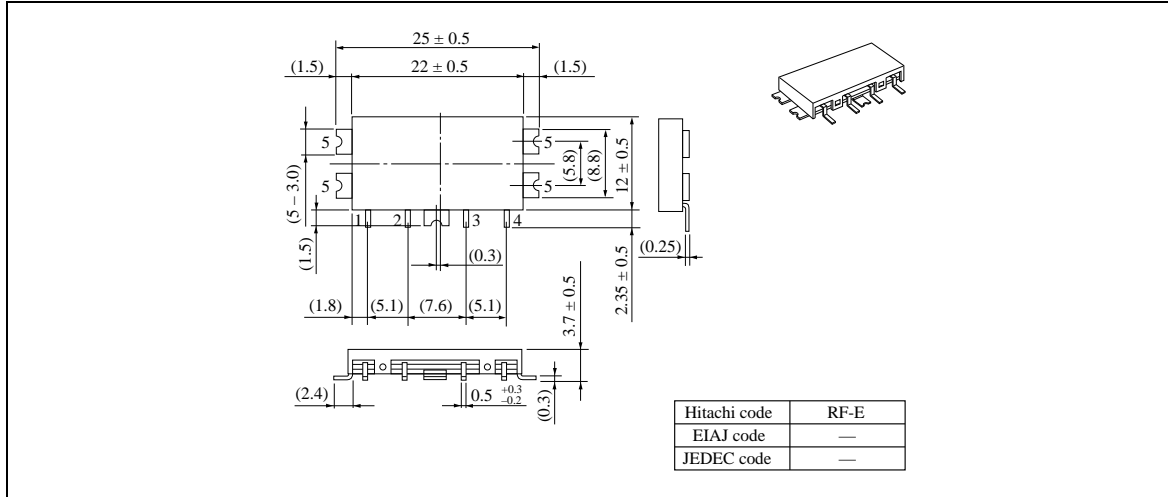






Package Dimensions

Unit: mm



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