

PF1007

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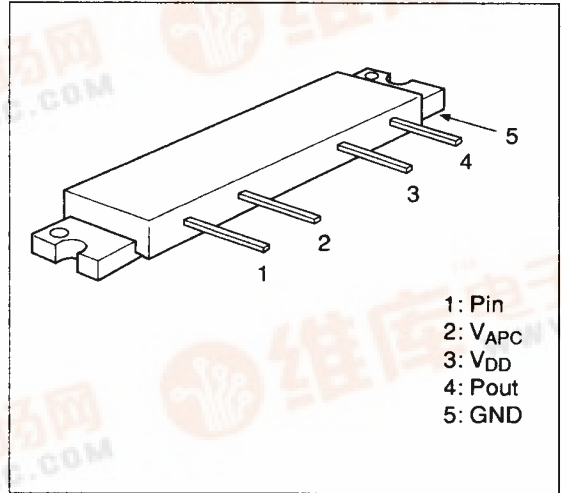
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MOS FET Power Amplifier Module for GSM Mobile Phone

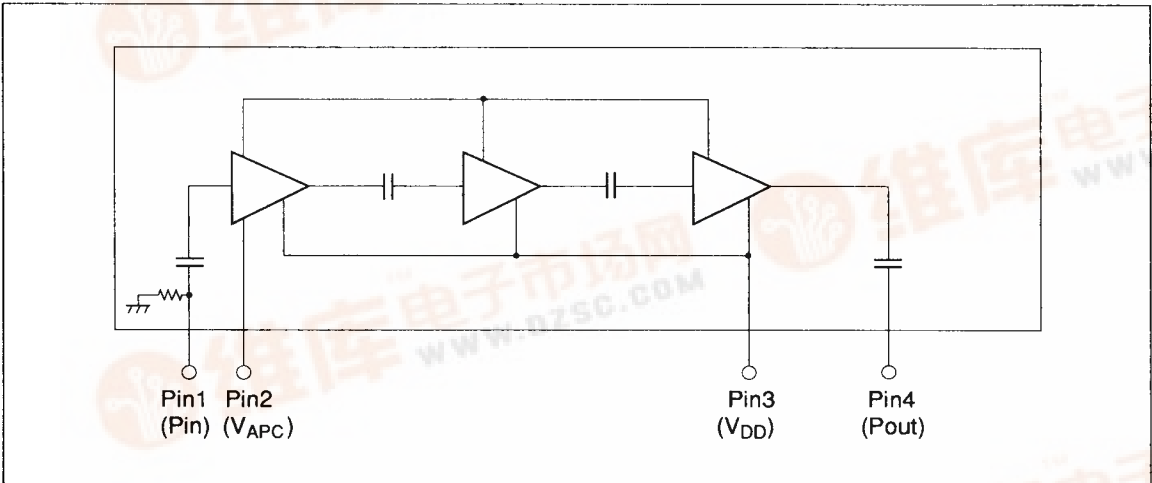
Features

- Low power control current: 400 μ A Typ
- High speed switching: 1.5 μ s Typ
- Wide power control range: 90 dB Typ

Pin Arrangement



Internal Diagram



PF1007

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

Item	Symbol	Rating	Unit
Supply voltage	V_{DD}	17	V
Supply current	I_{DD}	3	A
APC voltage	V_{APC}	± 8	V
Input power	P_{in}	20	mW
Operating case temperature	T_C (op)	-40 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	-45 to +125	$^\circ\text{C}$

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

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Drain cutoff current	I_{DS}	—	—	500	μA	$V_{DD} = 17\text{ V}$, $V_{APC} = 0\text{ V}$, $R_g = R_L = 50\ \Omega$
Total efficiency	η_T	30	35	—	%	$P_{in} = 4\text{ mW}$, $V_{DD} = 12.5\text{ V}$, $P_{out} = 12\text{ W}$ (at APC controlled), $R_g = R_L = 50\ \Omega$, $T_C = 25^\circ\text{C}$
2nd harmonic distortion	2nd H.D.	—	-45	-35	dB	
3rd harmonic distortion	3rd H.D.	—	-50	-40	dB	
Input VSWR	VSWR (in)	—	1.5	3	—	
Output power	P_{out} (1)	13.5	—	—	W	$V_{DD} = 12.5\text{ V}$, $P_{in} = 4\text{ mW}$, $V_{APC} = 6.0\text{ V}$, $T_C = 25^\circ\text{C}$, $R_g = R_L = 50\ \Omega$
Output power	P_{out} (2)	8.0	—	—	W	$V_{DD} = 10.8\text{ V}$, $P_{in} = 4\text{ mW}$, $V_{APC} = 6.0\text{ V}$, $T_C = 75^\circ\text{C}$, $R_g = R_L = 50\ \Omega$
Isolation	—	—	-50	-40	dBm	$V_{DD} = 12.5\text{ V}$, $P_{in} = 4\text{ mW}$, $V_{APC} = 0.5\text{ V}$, $T_C = 25^\circ\text{C}$, $R_g = R_L = 50\ \Omega$
Switching time	—	—	1.5	3	μs	$V_{DD} = 12.5\text{ V}$, $P_{in} = 4\text{ mW}$, $P_{out} = 12\text{ W}$, $T_C = 25^\circ\text{C}$, $R_g = R_L = 50\ \Omega$
Stability	—	No parasitic oscillation		—	—	$V_{DD} = 12.5\text{ V}$, $P_{in} = 4\text{ mW}$, $P_{out} = 12\text{ W}$ (at APC controlled) $R_g = 50\ \Omega$, $t = 20\text{ sec}$, $T_C = 25^\circ\text{C}$, Output VSWR = 20 All phases