

MOS FET Power Amplifier Module for GSM Mobile Phone

For GSM CLASS 2 890~915 MHz

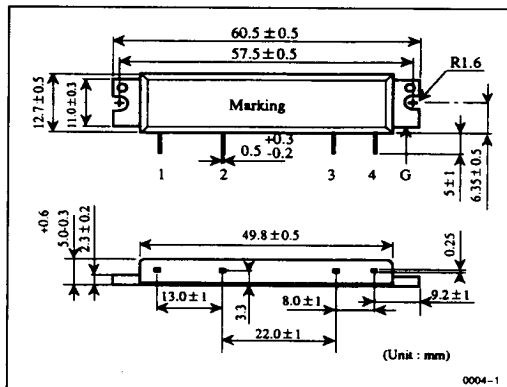
■ FEATURES

- Low Power Control Current1 mA
- High Speed Switching1 μ s
- Wide Power Control Range90 dB typ.

■ ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Supply Voltage	V_{DD}	17	V
Supply Current	I_{DD}	4	A
APC Voltage	V_{APC}	8	V
Input Power	P_{in}	20	mW
Operating Case Temperature	T_C (op)	-30 ~ +110	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^\circ\text{C}$

■ OUTLINE DRAWING



■ PIN OUT

Pin No.	Pin Name
1	P_{in}
2	V_{APC}
3	V_{DD}
4	P_{out}
G	GND

■ ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain Cutoff Current	I_{DS}	—	—	500	μA	$V_{DD} = 17\text{V}, V_{APC} = 0\text{V}$
Total Efficiency	η_T	30	38	—	%	$P_{in} = 4\text{ mW}, V_{DD} = 12.5\text{V},$ $P_{out} = 12\text{W (at APC Controlled)},$ $R_L = R_g = 50\Omega, T_C = 25^\circ\text{C}$
2nd Harmonic Distortion	2nd H.D.	—	-45	-35	dB	
3rd Harmonic Distortion	3rd H.D.	—	-55	-45	dB	
Input VSWR	VSWR (in)	—	1.5	3	—	
Output Power (1)	$P_{out} (1)$	13.5	—	—	W	$P_{in} = 4\text{ mW}, V_{DD} = 12.5\text{V}, V_{APC} = 7.5\text{V},$ $R_L = R_g = 50\Omega, T_C = 25^\circ\text{C}$
Output Power (2)	$P_{out} (2)$	7.5	—	—	W	$P_{in} = 4\text{ mW}, V_{DD} = 10.8\text{V}, V_{APC} = 7.5\text{V},$ $R_L = R_g = 50\Omega, T_C = 75^\circ\text{C}$
Isolation	—	—	-50	-40	dBm	$P_{in} = 4\text{ mW}, V_{DD} = 12.5\text{V}, V_{APC} = 0.5\text{V},$ $R_L = R_g = 50\Omega, T_C = 25^\circ\text{C}$
Switching Time	t_R, t_F	—	1.0	2	μs	$P_{in} = 4\text{ mW}, V_{DD} = 12.5\text{V}, P_{out} = 12\text{W},$ $R_L = R_g = 50\Omega, T_C = 25^\circ\text{C}$
Stability	—	No Parasitic Oscillation			—	$P_{in} = 4\text{ mW}, V_{DD} = 12.5\text{V},$ $P_{out} \leq 12\text{W (at APC Controlled)},$ $R_g = 50\Omega, t = 20\text{ sec.}, T_C = 25^\circ\text{C},$ Output VSWR = 20:1 All Phases

HITACHI

Hitachi America, Ltd. • Hitachi Plaza • 2000 Sierra Point Pkwy. • Brisbane, CA 94005-1819 • (415) 589-8300

87