

NEC

SILICON MONOLITHIC AMPLIFIER

MM765

PRELIMINARY DATA SHEET

Silicon Monolithic VHF-UHF Amplifier

FEATURES

- BROADBAND PERFORMANCE
10 ~ 1100MHz
- INPUT AND OUTPUT MATCHED
TO 50 OHMS
- AVAILABLE IN CHIP OR HERMETIC
PACKAGE
- HIGH RELIABILITY
- EXCELLENT LINEARITY
OVER +10dBm OUTPUT POWER
AT 1dB COMPRESSION
- CASCADABLE FOR MULTISTAGE
APPLICATIONS

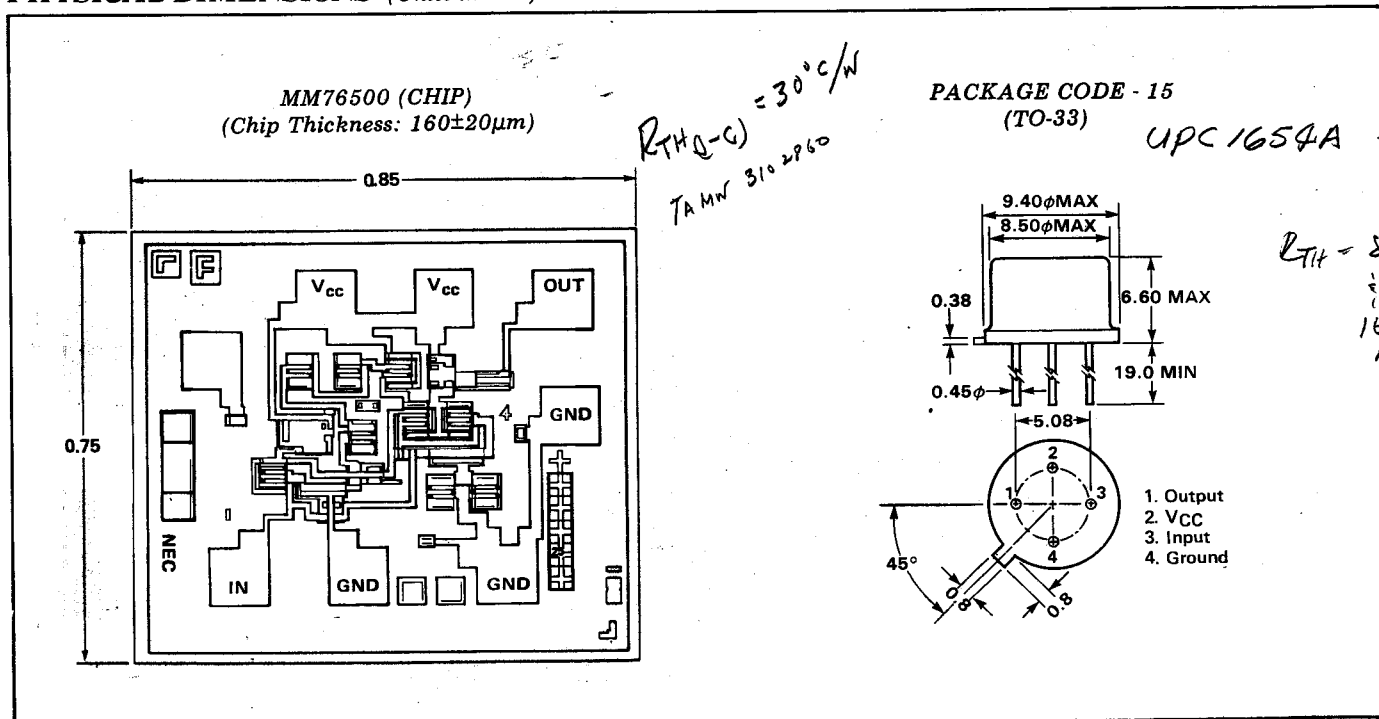
ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

SYMBOLS	PARAMETERS	UNITS	RATINGS
V_{CC}	Supply Voltage	V	12
P_T	Total Power Dissipation	mW	750
T_{opt}	Operating Temperature	$^\circ\text{C}$	$-20 \sim +75$
T_{stg}	Storage Temperature	$^\circ\text{C}$	$-40 \sim +125$

DESCRIPTION AND APPLICATIONS

The MM765 Silicon Microwave Monolithic IC is designed for general purpose and IF applications. This amplifier is matched to 50 ohms and is cascadable for multistage applications. The MM765 features excellent linearity with over +10dBm output power at 1dB compression and broadband performance up to 1200 MHz. Reliability and performance uniformity are assured by NEC's stringent quality control procedures. The MM765 is available in chip form and in a hermetically sealed 15 package (TO-33).

PHYSICAL DIMENSIONS (Units in mm)

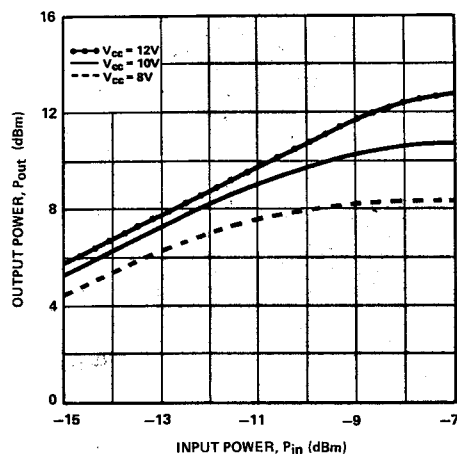


ELECTRICAL PERFORMANCE ($T_a = 25^\circ\text{C}$)

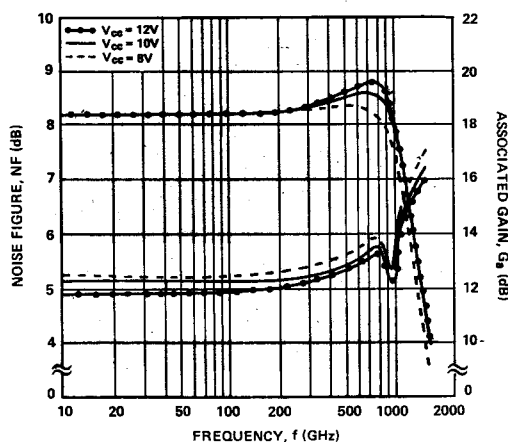
MM PART NUMBER PACKAGE CODE			MM76515 15 (TO-33)		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
I_{CC}	Operating Current at $V_{CC} = 10\text{V}$	mA	38	43	48
$ S_{21} $	Power Gain at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dB	17	19	21
NF	Noise Figure at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dB		5.5	6.5
BW	Bandwidth at $V_{CC} = 10\text{V}$, (3dB BW)	MHz	950	1100	
P_{1dB}	Output Power (1_{dBc}) at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dBm	9	10.5	
IP_3	3rd Order Intercept Point at $V_{CC} = 10\text{V}$, $f_1 = 500\text{ MHz}$, $f_2 = 510\text{ MHz}$, $f = 2f_1 - f_2$, $P_{out} = 0\text{ dBm}$	dB		-40	
$ S_{11} $	Input Return Loss at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dB	-15	-18	
$ S_{22} $	Output Return Loss at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dB	-9	-12	
$ S_{12} $	Isolation at $V_{CC} = 10\text{V}$, $f = 500\text{ MHz}$	dB	-24	-27	

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

OUTPUT VS. INPUT POWER



TYPICAL NOISE FIGURE AND ASSOCIATED GAIN VS. FREQUENCY



OPERATING CURRENT VS. SUPPLY VOLTAGE

