NEC
ELECTRON DEVICE

THICK FILM HYBRID INTEGRATED CIRCUIT
MC-5801

6427525 N E C ELECTRONICS INC 72C 08402 D T-74-09-01

VHF BAND AMPLIFIER

DESCRIPTION AND APPLICATIONS

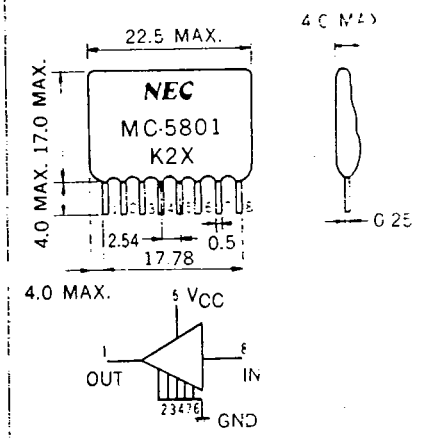
The MC-5801 is a thick film hybrid integrated circuit designed for broad-band general purpose amplifier applications in the 40 to 250 MHz band. The device is a "Pre amplifier" which features low noise, flat gain with a typical output of 90 to 110 dBμV/75 Ω. Since the MC-5801 is designed to serve as a VHF Band amplifier, the device is matched to 75 Ω. Reliability and performance uniformity are assured by gold metalized transistors and NEC's stringent quality-control procedures. The MC-5801 is a complete circuit which requires no additional adjustments or components.

FEATURES

- Operates as a flat amplifier from 40 to 250 MHz without adjustments or external components.
- Input and output matching to 75 Ω.
- Low noise figure (1.5 dB TYP.)
- Low intermodulation distortion (IM_2 = −53 dB, IM_3 = −65 dB TYP.)

PACKAGE DIMENSIONS

(Unit : mm)



ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Supply Voltage	V_{CC}	15	V
Operating Current	I_{CC}	40	mA
Input Voltage	V_I	0.5	V
Total Power Dissipation	P_T	600	mW
Operating Temperature	T_{opt}	−30 to +65	°C
Storage Temperature	T_{stg}	−30 to +85	°C

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, V_{CC} = 12 V, Z_S = Z_L = 75 Ω)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Operating Current	I_{CC}	25	30	35	mA	
Gain	G_V	27	28	30	dB	f = 40 to 250 MHz
Gain Flatness	$\pm\Delta G_V$		0.5	1.0	dB	f = 40 to 250 MHz
Input Output Return Loss	R.L	6.0			dB	f = 40 to 250 MHz
Noise Figure	NF		1.5	2.5	dB	f = 40 to 250 MHz
2nd Intermodulation Distortion	IM_2		−53	−50	dB	f_1 = 90 MHz, f_2 = 100 MHz f = f_1 + f_2, V_O = 95 dBμV 75 Ω
3rd Intermodulation Distortion	IM_3		−65	−60	dB	f_1 = 200 MHz, f_2 = 210 MHz f = $2f_1-f_2$, V_O = 95 dBμV 75 Ω