

**ORDERING INFORMATION**

Device	Temperature Range	Package
MC1364P	0°C to +75°C	Plastic DIP

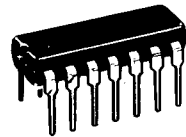
**MC1364**

**TV AUTOMATIC  
FREQUENCY CONTROL**

- High Gain Amplifier – 18 mV Input for Full Output
- Direct Replacement for the CA3064
- Also Available in the 14-Lead Dual In-Line Package

**AUTOMATIC  
FREQUENCY CONTROL**

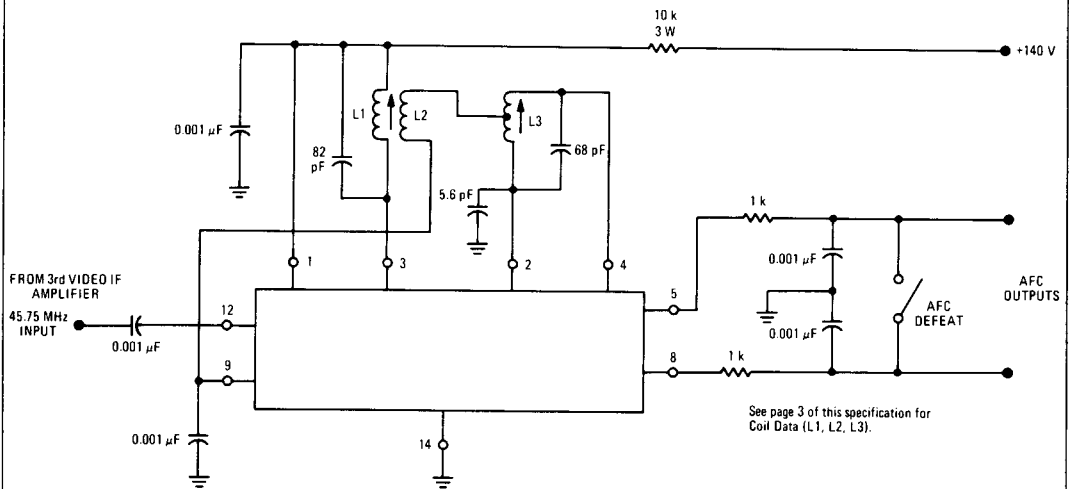
**SILICON MONOLITHIC  
INTEGRATED CIRCUIT**



P SUFFIX  
CASE 646  
PLASTIC PACKAGE

5

**FIGURE 1 – TYPICAL APPLICATION CIRCUIT**



**MAXIMUM RATINGS** ( $T_A = +25^{\circ}\text{C}$  unless otherwise noted.)

Rating	MC1364P	Unit
Input Signal Voltage (Pin 12 to 14)	+2.0, -10	Vdc
Output Collector Voltage (Pins 3 and 14)	20	Volts
Power Dissipation (Package Limitation) Derate above $T_A = +25^{\circ}\text{C}$	625 5.0	mW mW/ $^{\circ}\text{C}$
Operating Temperature Range	0 to +75	$^{\circ}\text{C}$
Storage Temperature Range	-65 to +125	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = +30\text{ Vdc}$ ,  $T_A = +25^{\circ}\text{C}$ , see Test Circuit of Figure 4 unless otherwise noted.)

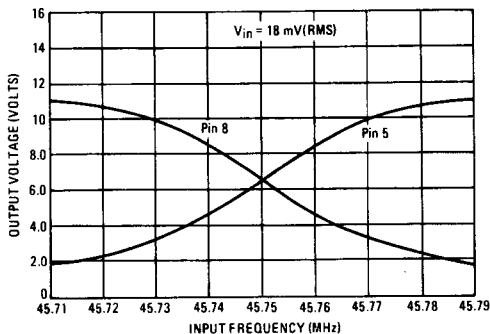
Characteristic	Min	Typ	Max	Unit
Total Device Dissipation	—	140	—	mW
Total Supply Current	—	12	—	mA
Current Drain, Total (Reduce $V_{CC}$ so that $V_{I0} = 10.5\text{ Vdc}$ )	4.0	6.5	9.5	mA
Zener Regulating Voltage	10.9	11.8	12.8	V
Quiescent Current to Pin 3	1.0	2.0	4.0	mA
Quiescent Voltage at Pin 5 or Pin 8	5.0	6.6	8.0	V
Output Offset Voltage (Pin 5 to Pin 8)	-1.0	0	+1.0	V

**DESIGN PARAMETERS, TYPICAL VALUES** ( $V_{CC} = +30\text{ Vdc}$ ,  $R_S = 1.5\text{ k}$ ,  $f = 45.75\text{ MHz}$ )

Parameter	Symbol	Typ	Unit
Input Admittance	$Y_{11}$	$0.4 + j1$	mmho
Reverse Transfer Admittance	$Y_{12}$	$0 + j3.4$	$\mu\text{mho}$
Forward Transfer Admittance	$Y_{21}$	$110 + j140$	mmhos
Output Admittance (Pin 3)	$Y_{22}$	$0.02 + j1$	mmho

**TYPICAL CHARACTERISTICS**  
(See Test Circuit of Figure 2)

**FIGURE 2 – TYPICAL NARROW BAND DYNAMIC CHARACTERISTICS**



**FIGURE 3 – TYPICAL WIDE BAND DYNAMIC CHARACTERISTICS**

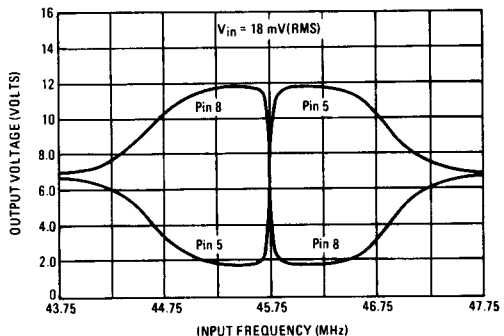
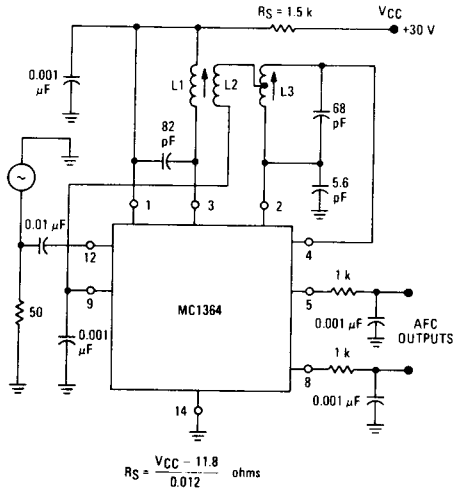


FIGURE 4 – TEST CIRCUIT



COIL DATA FOR DISCRIMINATOR WINDINGS  
FOR FIGURES 1 AND 4

- L1 – Discriminator Primary: 3-1/6 turns; AWG #20 enamel-covered wire – close-wound, at bottom of coil form. Inductance of L1 = 0.165 μH; Q<sub>0</sub> = 120 at f<sub>0</sub> = 45.75 MHz. Start winding at Terminal #6; finish at Terminal #1. See Notes below.
- L2 – Tertiary Windings: 2-1/6 turns; AWG #20 enamel-covered wire – close-wound over bottom end of L1. Start winding at Terminal #3; finish at Terminal #4. See Notes below.
- L3 – Discriminator Secondary: 3-1/2 turns; AWG #20 enamel-covered wire, center-tapped, space wound at bottom of coil form. Start winding at Terminal #2; finish at Terminal #5, connect center tap to Terminal #7. See Notes below.

- Notes:
1. Coil Forms: Cylindrical; -0.30" Dia. Max.
  2. Tuning Core: 0.250" Dia. x 0.37" Length. Material: Carbinol J or equivalent.
  3. Coil Form Base: See drawing below.
  4. End of coil nearest terminal board to be designated the winding start end.
  5. Mount the coils 3/4" apart, center to center.

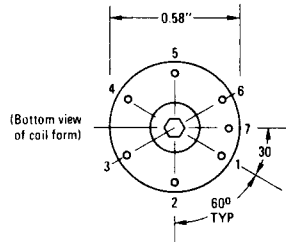


FIGURE 5 – CIRCUIT SCHEMATIC

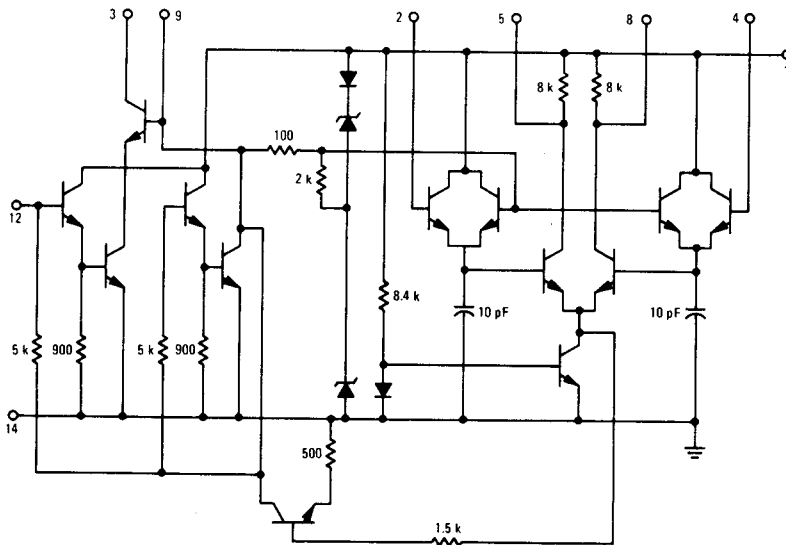


FIGURE 6 – PRINTED CIRCUIT BOARD AND PARTS ARRANGEMENT  
(Copper Side)

