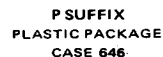


Device	Temperature Range	Package
MC1351P	0°C to +75°C	Plastic DIP

MC1351

- Excellent Limiting with 80 $\mu\text{V(rms)}$ Input Signal typ
- Large Output-Voltage Swing – to 3.5 V(rms) typ
- High IF Voltage Gain – 65 dB typ
- Zener Power-Supply Regulation Built-In
- Short-Circuit Protection
- A Coincidence Discriminator that Requires Only One RLC Phase Shift Network
- Preamplifier to Drive a Single External-Transistor Class-A Audio-Output Stage

**TV SOUND CIRCUIT
MONOLITHIC SILICON
INTEGRATED CIRCUIT**

[illegible]

MAXIMUM RATINGS (T_A = +25° unless otherwise noted)

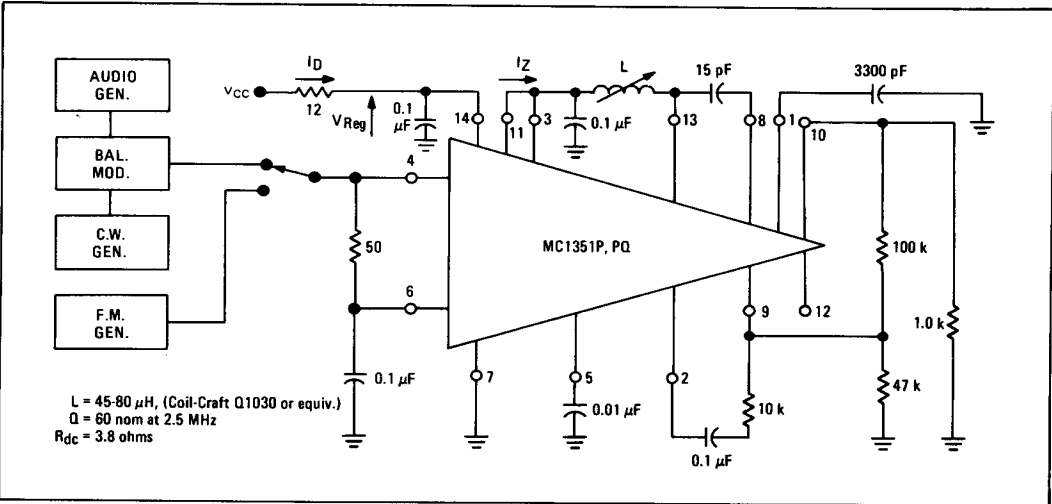
Rating	Symbol	Value	Unit
Power Supply Voltage	V _{CC}	+16	Vdc
Input Voltage	V _{in}	0.7	V(rms)
Power Dissipation (Package Limitation) Plastic Packages Derate above +25°C	P _D 1/θ _{JA}	625 5.0	mW mW/°C
Operating Temperature Range	T _A	0 to +75	°C
Storage Temperature Range	T _{stg}	-65 to +150	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 12 Vdc, T_A = +25°C, f = 4.5 MHz, Deviation = ±25 kHz unless otherwise noted.)

Characteristic	Min	Typ	Max	Unit
Input Voltage (-3.0 dB Limiting)	—	80	160	μV(rms)
AM Rejection (V _{in} = 20 mV(rms), AM = 30%) (See Note 1)	—	—	—	dB
AMR = 20 log $\frac{V_{O\text{FM}}}{V_{O\text{AM}}}$ { f = 4.5 MHz, Deviation = ±25 kHz, Q _L = 24 f = 5.5 MHz, Deviation = ±50 kHz, Q _L = 30	—	45 45	— —	
Total Harmonic Distortion (Q _L = 24) (See Note 1) (7.5 kHz Deviation)	—	1.0	—	%
Maximum Undistorted Audio Output Voltage (Pin 10) (See Note 1) (Audio Gain Adjusted Externally) (Q = 24)	—	3.5	—	V(rms)
Recovered Audio (Pin 2) (See Note 1) (f = 4.5 MHz, Deviation = ±25 kHz, Q _L = 24) (f = 5.5 MHz, Deviation = ±50 kHz, Q _L = 30)	0.35 —	0.50 0.80	— —	V(rms)
Audio Preamplifier Open Loop Gain	—	25	—	dB
IF Voltage Gain	—	65	—	dB
Parallel Input Resistance	—	9.0	—	kΩ
Parallel Input Capacitance	—	6.0	—	pF
Nominal Zener Voltage (I _Z = 5.0 mAdc)	—	11.6	—	Vdc
Power Supply Current (I _Z = 5.0 mAdc)	—	31	—	mAdc
Power Dissipation (I _Z = 5.0 mAdc)	—	300	375	mW

Note 1: Q_L is loaded circuit Q.

FIGURE 1 – TEST CIRCUIT (V_{CC} = +12 Vdc, T_A = +25°C)



TYPICAL CHARACTERISTICS

FIGURE 2 – DETECTED AUDIO OUTPUT versus INPUT LEVEL @ $f = 4.5 \text{ MHz}$, $\pm 25 \text{ kHz}$ DEVIATION

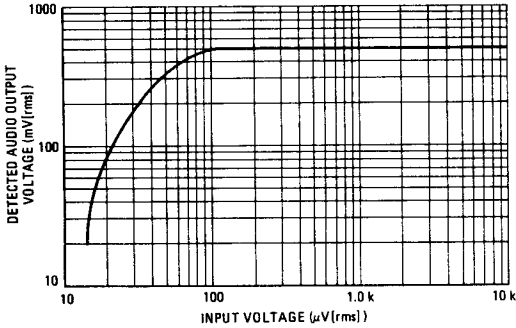


FIGURE 3 – DETECTED AUDIO OUTPUT versus INPUT LEVEL @ $f = 5.5 \text{ MHz}$, $\pm 50 \text{ kHz}$ DEVIATION

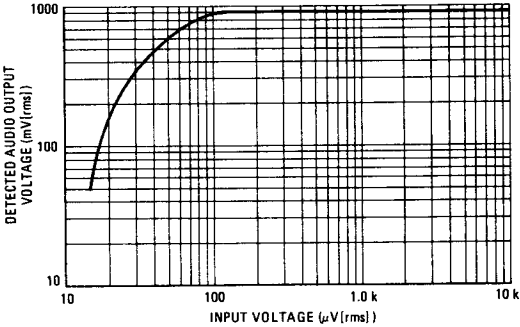


FIGURE 4 – DETECTOR "S" CURVE @ $f = 4.5 \text{ MHz}$, $\text{BW} = 200 \text{ kHz}$, $Q = 24$

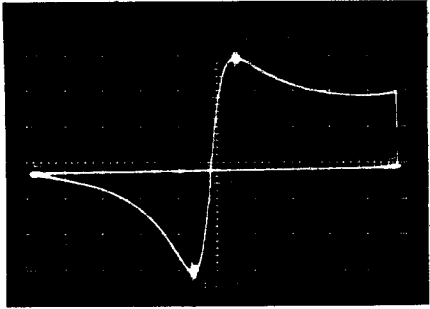


FIGURE 5 – DETECTOR "S" CURVE @ $f = 5.5 \text{ MHz}$, $\text{BW} = 220 \text{ kHz}$, $Q = 30$

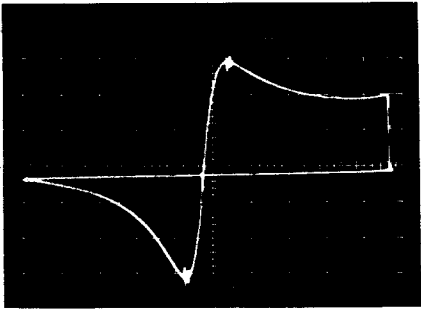


FIGURE 6 – IF VOLTAGE GAIN versus FREQUENCY

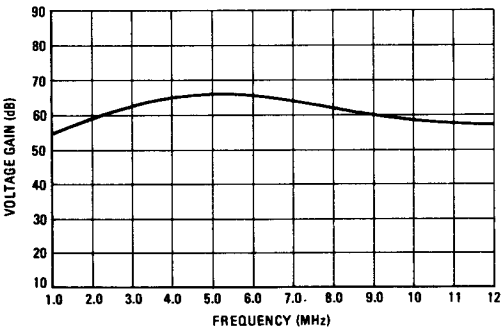


FIGURE 7 – AM REJECTION

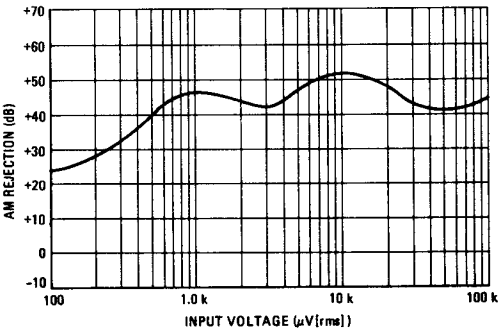


FIGURE 8 — 4.5 MHz TYPICAL APPLICATION

