

**ORDERING INFORMATION**

Device	Temperature Range	Package
MC1355P	0°C to +75°C	Plastic DIP

**MC1355**

**LIMITING FM  
IF AMPLIFIER**

**SILICON MONOLITHIC  
INTEGRATED CIRCUIT**

**BALANCED FOUR-STAGE  
HIGH-GAIN FM/IF AMPLIFIER**

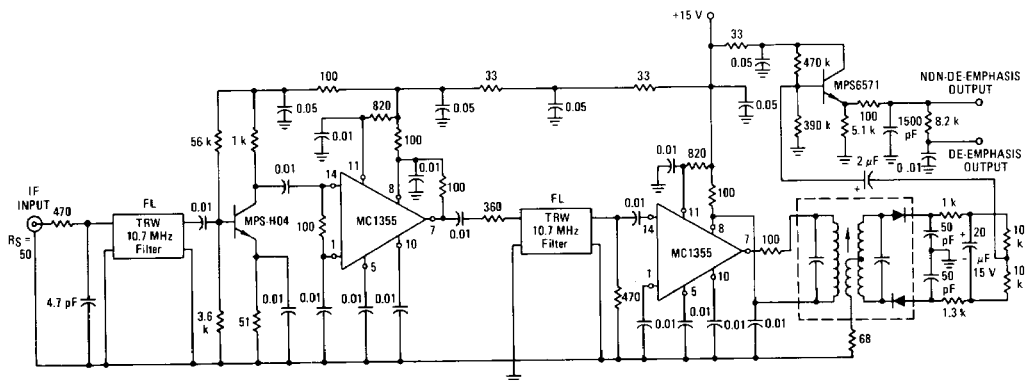
... designed for use with Foster-Seeley discriminator or ratio detector in high quality FM systems.

- High AM Rejection (60 dB typ)
- Wide Range of Supply Voltages (8 to 18 Vdc)
- Low Distortion (0.5% typ)



**P SUFFIX  
PLASTIC PACKAGE  
CASE 646-05**

**FIGURE 1 - DUAL MC1355 FM IF APPLICATION**



\*All other pins grounded  
 T-Ratio Detector (input impedance  $\cong 1.5$  k) G.1. #36231 or equivalent

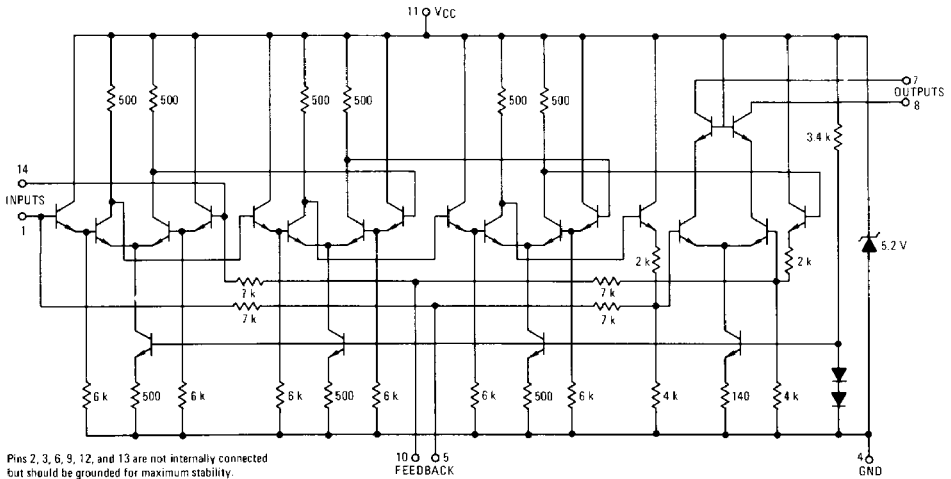
**MAXIMUM RATINGS** ( $T_A = +25^{\circ}\text{C}$  unless otherwise noted.)

Rating	Value	Unit
Output Voltage (Pins 7 & 8)	40	Vdc
Supply Current to Pin 11	20	mA
Input Signal Voltage (single-ended)	5.0	Vp-p
Input Signal Voltage (differential)	10	Vp-p
Power Dissipation (package limitation)	625	mW
Derate above $T_A = +25^{\circ}\text{C}$	5.0	mW/ $^{\circ}\text{C}$
Operating Temperature Range (Ambient)	0 to +75	$^{\circ}\text{C}$
Storage Temperature Range	-65 to +150	$^{\circ}\text{C}$

**ELECTRICAL CHARACTERISTICS** ( $V_{CC} = 15\text{ Vdc}$ ,  $f = 10.7\text{ MHz}$ ,  $T_A = +25^{\circ}\text{C}$ )

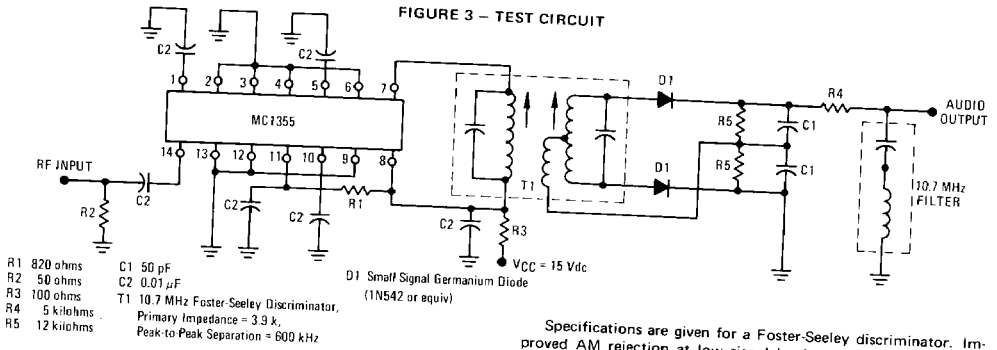
Characteristic	Min	Typ	Max	Units
Power Supply Voltage Range	8.0	15	18	Vdc
Total Circuit Current	—	16	—	mA
Total Output Stage Current	—	4.2	—	mA
Device Dissipation	—	125	—	mW
Internal Zener Voltage	—	5.2	—	Vdc
Input Signal for 3 dB Limiting	—	175	250	$\mu\text{V(rms)}$
Output Current Swing	3.1	4.2	5.4	mA p-p
AM Rejection (10 mv to 1.0 v (rms) input, FM @ 100%, AM @ 80%, Foster Seeley detector)	—	60	—	dB
Admittance Parameters				
Y11	—	120 + j320	—	$\mu\text{mhos}$
Y12	—	j0.6	—	$\mu\text{mho}$
Y21	—	8 + j5.9	—	mhos
Y22	—	15 + j230	—	$\mu\text{mhos}$

FIGURE 2 — CIRCUIT SCHEMATIC



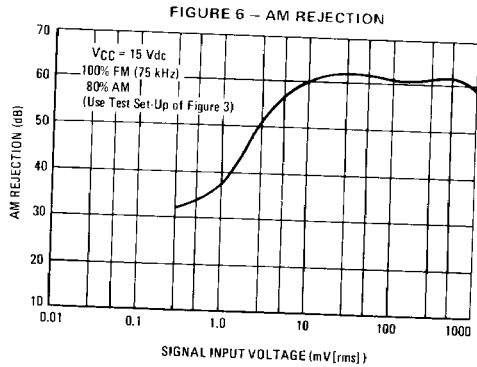
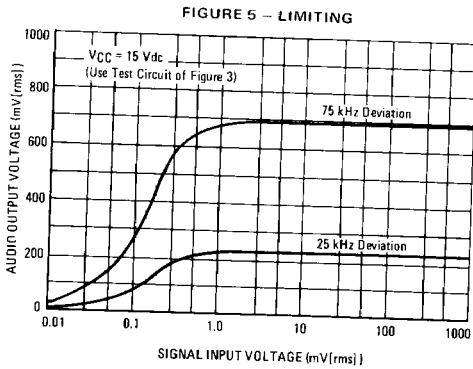
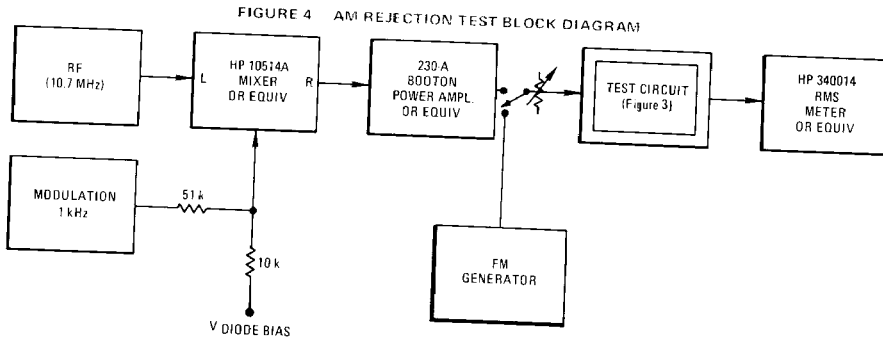
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TYPICAL CHARACTERISTICS



Specifications are given for a Foster-Seeley discriminator. Improved AM rejection at low signal levels can be obtained with a ratio detector.

For optimum circuit stability it is important to ground pins 2, 3, 4, 6, 9, 12, and 13.



TYPICAL CHARACTERISTICS (continued)

FIGURE 7 – OUTPUT DISTORTION

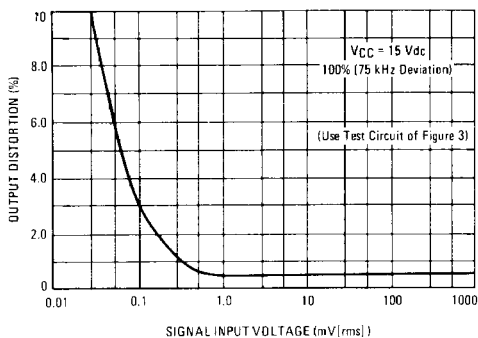


FIGURE 8 – SIGNAL-TO-NOISE RATIO SIGNAL

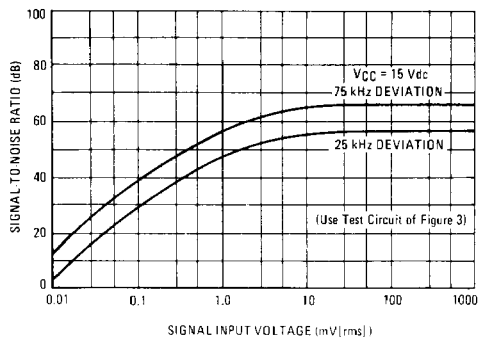
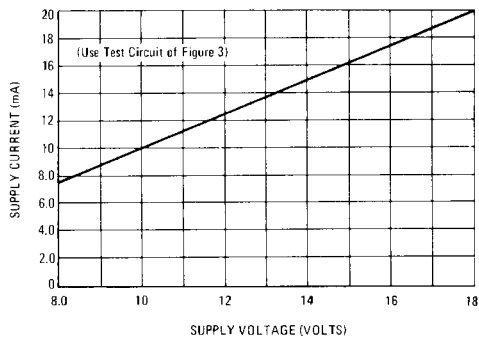


FIGURE 9 – TOTAL SUPPLY CURRENT



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