

MC1374

MAXIMUM RATINGS (T_A = 25°C, unless otherwise noted.)

Rating	Value	Unit
Supply Voltage	14	Vdc
Operating Ambient Temperature Range	0 to +70	°C
Storage Temperature Range	-65 to +150	°C
Junction Temperature	150	°C
Power Dissipation Package Derate above 25°C	1.25 10 mW/°C	W

ELECTRICAL CHARACTERISTICS (V_{CC} = 12 Vdc, T_A = 25°C, f_c = 67.25 MHz, Figure 4 circuit, unless otherwise noted.)

Characteristics	Min	Typ	Max	Unit
AM OSCILLATOR/MODULATOR				
Operating Supply Voltage	5.0	12	12	V
Supply Current (Figure 1)	—	13	—	mA
Video Input Dynamic Range (Sync Amplitude)	0.25	1.0	1.0	V Pk
RF Output (Pin 9, R7 = 75 Ω, No External Load)	—	170	—	mV pp
Carrier Suppression	36	40	—	dB
Linearity (75% to 12.5% Carrier, 15 kHz to 3.58 MHz)	—	—	2.0	%
Differential Gain Distortion (IRE Test Signal)	5.0	7.0	10	%
Differential Phase Distortion (3.58 MHz IRE Test Signal)	—	-1.5	2.0	Degrees
920 kHz Beat (3.58 MHz @ 30%, 4.5 MHz @ 25%)	—	-57	—	dB
Video Bandwidth (75 Ω Input Source)	30	—	—	MHz
Oscillator Frequency Range	—	105	—	MHz
Internal Resistance across Tank (Pin 6 to Pin 7)	—	1.8	—	kΩ
Internal Capacitance across Tank (Pin 6 to Pin 7)	—	4.0	—	pF

ELECTRICAL CHARACTERISTICS (T_A = 25°C, V_{CC} = 12 Vdc, 4.5 MHz, Test circuit of Figure 11, unless otherwise noted.)

Characteristics	Min	Typ	Max	Unit
FM OSCILLATOR/MODULATOR				
Frequency Range of Modulator	14	4.5	14	MHz
Frequency Shift versus Temperature (Pin 14 open)	—	0.2	0.3	kHz/°C
Frequency Shift versus V _{CC} (Pin 14 open)	—	—	4.0	kHz/V
Output Amplitude (Pin 3 not loaded)	—	900	—	mVpp
Output Harmonics, Unmodulated	—	—	-40	dB
Modulation Sensitivity	1.7 MHz	0.20	—	MHz/V
4.5 MHz	—	0.24	—	
10.7 MHz	—	0.80	—	
Audio Distortion (±25 kHz Deviation, Optimized Bias Pin 14)	—	0.6	1.0	%
Audio Distortion (±25 kHz Deviation, Pin 14 self biased)	—	1.4	—	
Incidental AM (±25 kHz FM)	—	2.0	—	
Audio Input Resistance (Pin 14 to ground)	—	6.0	—	kΩ
Audio Input Capacitance (Pin 14 to ground)	—	5.0	—	pF
Stray Tuning Capacitance (Pin 3 to ground)	—	5.0	—	pF
Effective Oscillator Source Impedance (Pin 3 to load)	—	2.0	—	kΩ