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MOTOROLA

MC3340

Electronic Attenuator

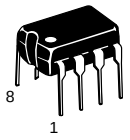
The MC3340 is a simple but very effective electronic attenuator. This device offers up to 80 dB of attenuation control for frequencies to 1.0 MHz. THD (distortion) is less than 1% – up to 15 dB attenuation and less than 3% – up to 40 dB.

Typical uses include instrumentation control, remote control audio amplifiers, electronic games, and CATV (cable TV) set–top converter audio control.

- Designed for use in:
  - DC Operated Volume Control
  - Compression and Expansion Amplifier Applications
- Controlled by DC Voltage or External Variable Resistor
- Economical 8–Pin Dual–In–Line Package

ELECTRONIC ATTENUATOR

SEMICONDUCTOR TECHNICAL DATA



P SUFFIX
PLASTIC PACKAGE
CASE 626

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

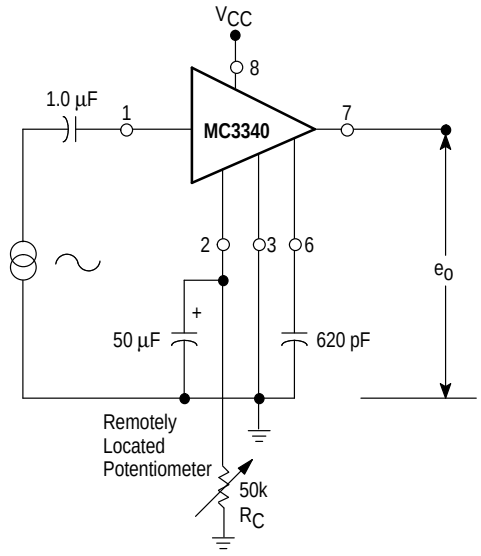
Rating	Symbol	Value	Unit
Power Supply Voltage	V_{CC}	20	Vdc
Power Dissipation @ T_A = 25°C Derate above T_A = 25°C	P_D	1.2 10	W mW/°C
Operating Ambient Temperature Range	T_A	0 to 75	°C

NOTE: ESD data available upon request.

ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC3340P	T_A = 0 to 75°C	Plastic DIP

Figure 1. Typical DC Remote Volume Control



ELECTRICAL CHARACTERISTICS (e_{in} = 100 mVrms, f = 1.0 kHz, V_{CC} = 16 Vdc, T_A = +25°C, unless otherwise noted.)

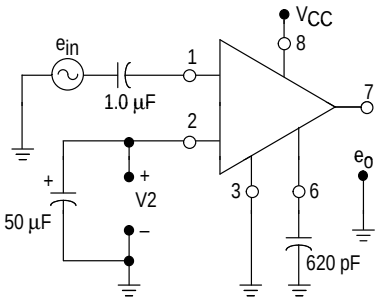
Circuit	Characteristics	Min	Typ	Max	Unit
	Operating Power Supply Voltage	9.0	–	18	Vdc
	Control Terminal Sink Current, Pin 2 (e_{in} = 0)	–	–	2.0	mAdc
	Maximum Input Voltage	–	–	0.5	Vrms
	Voltage Gain	11	13	–	dB
	Attenuation Range from Maximum Gain (V2 = 6.5 Vdc)	70	80	–	dB
	Total Harmonic Distortion (Pin 2 Gnd) (e_{in} = 100 mVrms, $e_o = A_v \bullet e_{in}$)	–	0.6	1.0	%

Figure 2. Representative Schematic Diagram

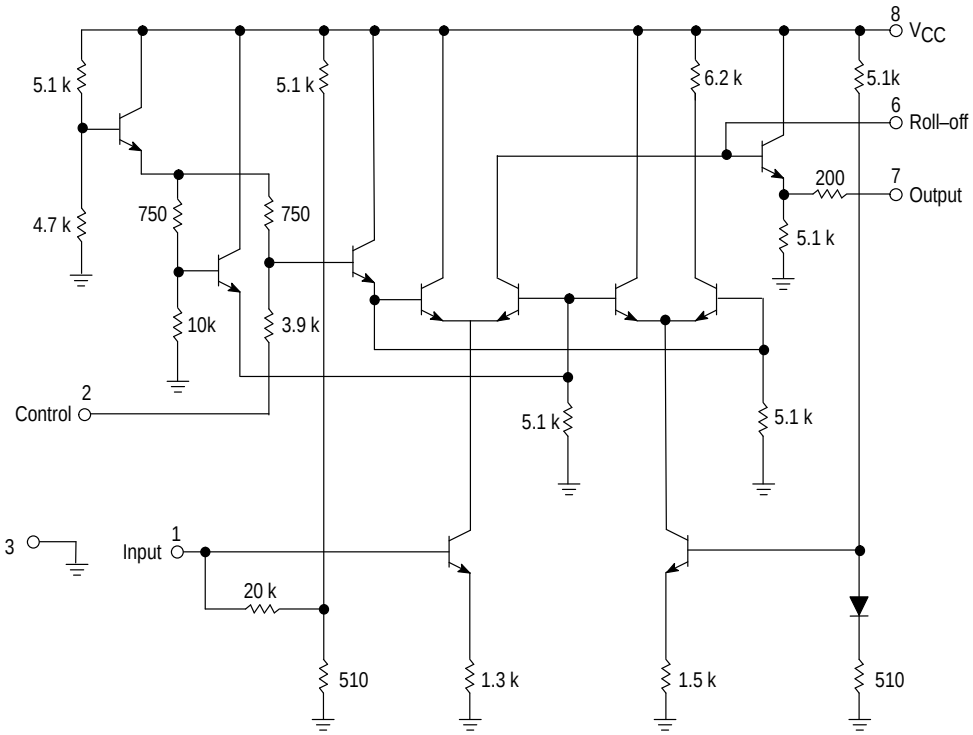


Figure 3. Attenuation versus DC Control Voltage

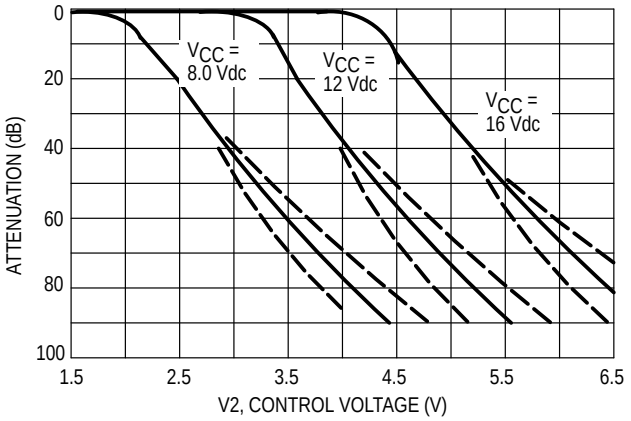


Figure 4. Attenuation versus Control Resistor

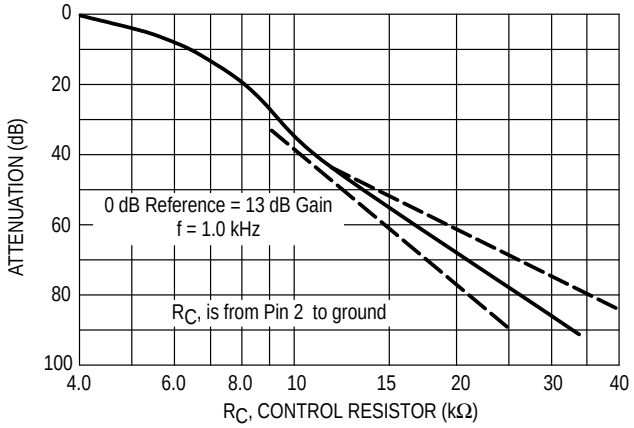


Figure 5. Frequency Response

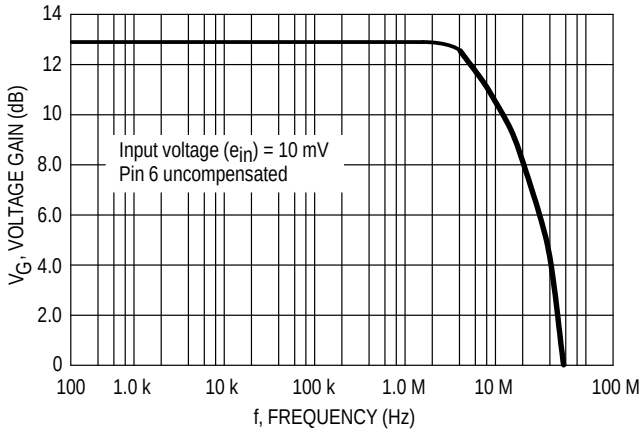


Figure 6. Output Voltage Swing

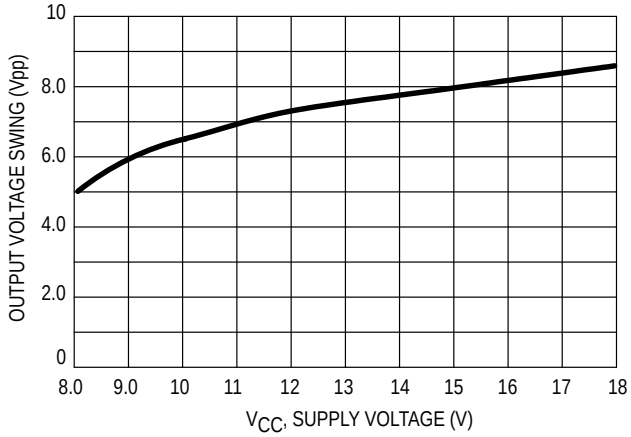
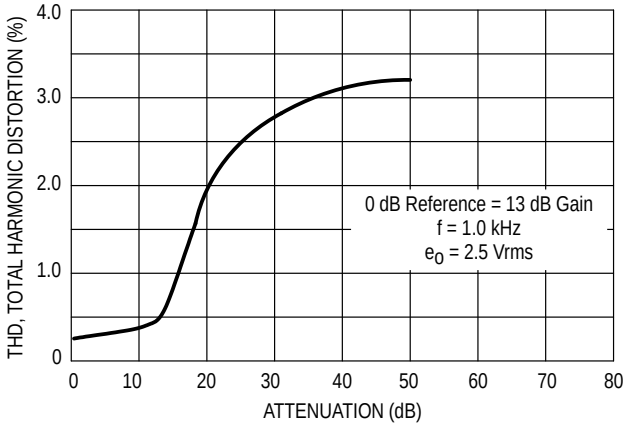
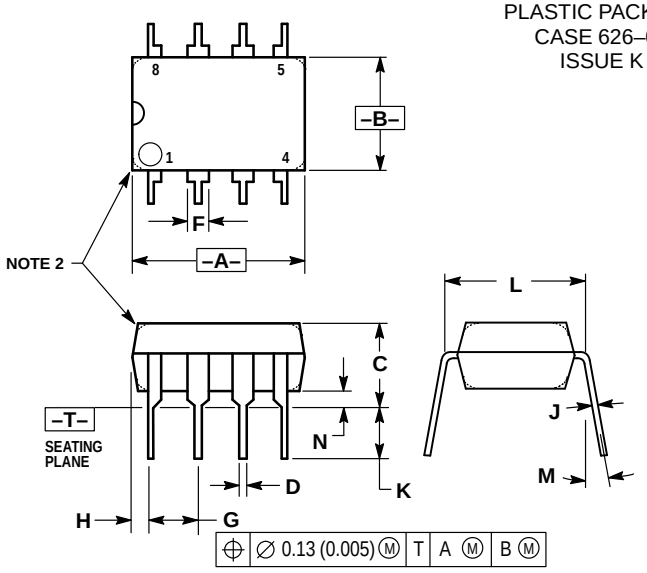


Figure 7. Total Harmonic Distortion



OUTLINE DIMENSIONS

P SUFFIX
PLASTIC PACKAGE
CASE 626–05
ISSUE K



NOTES:
1. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
2. PACKAGE CONTOUR OPTIONAL (ROUND OR SQUARE CORNERS).
3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	9.40	10.16	0.370	0.400
B	6.10	6.60	0.240	0.260
C	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.020
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	0.76	1.27	0.030	0.050
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300 BSC	
M	—	10°	—	10°
N	0.76	1.01	0.030	0.040

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