

MFC6040

CONSUMER PRODUCTS

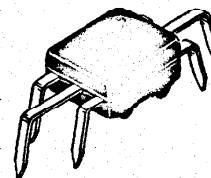
Advance Information

ELECTRONIC ATTENUATOR

- Designed for use in:
 - DC Operated Volume Control
 - Compression and Expansion Amplifier Applications
- Controlled by DC Voltage or External Variable Resistor
- Economical 6-Lead Plastic Package

ELECTRONIC ATTENUATOR

Silicon Monolithic
Functional Circuit



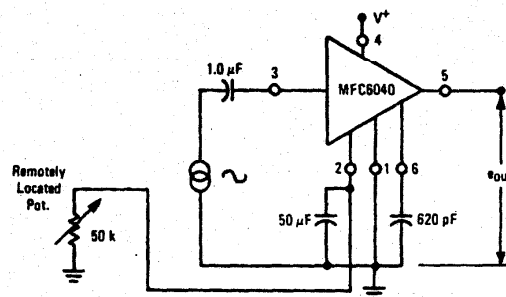
CASE 643

PLASTIC PACKAGE

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

Rating	Symbol	Value	Unit
Power Supply Voltage	V^+	21	Vdc
Power Dissipation @ $T_A = 25^\circ\text{C}$ (Package Limitation)	P_D	1.0	Watt
Derate above $T_A = 25^\circ\text{C}$	$1/\theta_{JA}$	10	mW/ $^\circ\text{C}$
Operating Temperature Range	T_A	0 to +75	$^\circ\text{C}$

FIGURE 1 - TYPICAL DC "REMOTE" VOLUME CONTROL



MFC6040 (continued)

ELECTRICAL CHARACTERISTICS ($e_{in} = 100 \text{ mV}$, $f = 1.0 \text{ kHz}$, $R_1 = 0$, $V^+ = 16 \text{ Vdc}$, $T_A = 25^\circ\text{C}$ unless otherwise noted)

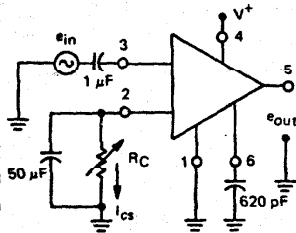
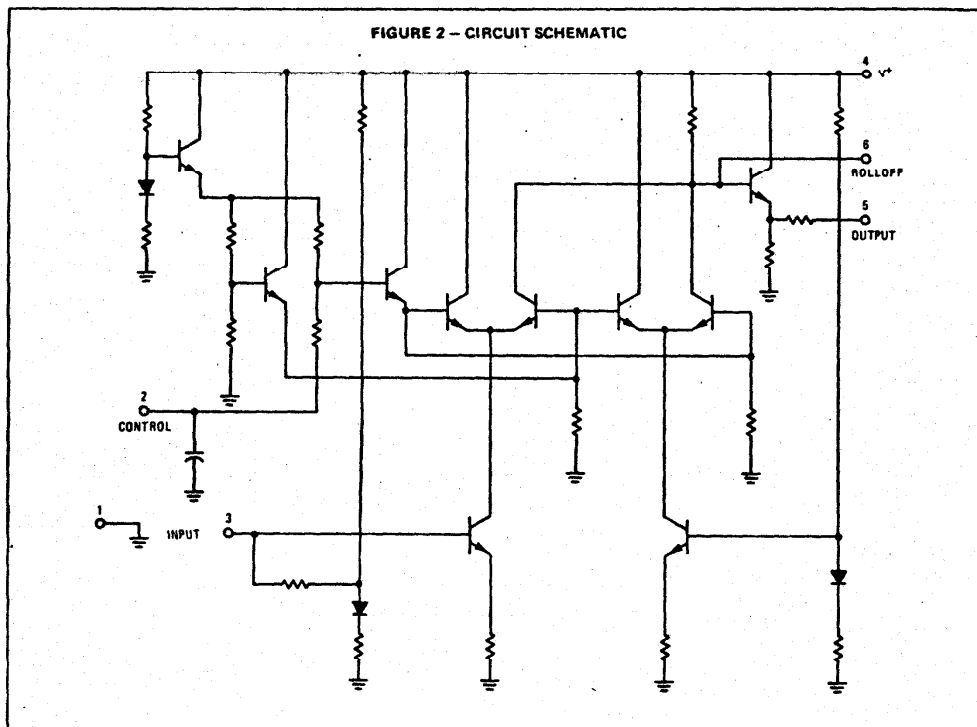
Circuit	Characteristic	Symbol	Min	Typ	Max	Unit
	Operating Power Supply Voltage	V^+	9.0	—	18	Vdc
	Control Terminal Sink Current ($e_{in} = 0$)	I_{cs}	—	—	2.0	mA _{dc}
	Maximum Input Voltage	e_{in}	—	—	0.5	V(rms)
	Voltage Gain	A_V	11	13	—	dB
	Attenuation Range ($R_C = 33 \text{ k ohms}$)		70	90	—	dB
	Total Harmonic Distortion ($e_{in} = 100 \text{ mV}$, $e_o = 100 \text{ mV}$)	THD	—	0.6	1.0	%

FIGURE 2 – CIRCUIT SCHEMATIC



MFC6040 (continued)

TYPICAL ELECTRICAL CHARACTERISTICS ($V^+ = 16\text{ Vdc}$, $T_A = 25^\circ\text{C}$ unless otherwise noted)

FIGURE 3 – ATTENUATION versus DC CONTROL VOLTAGE

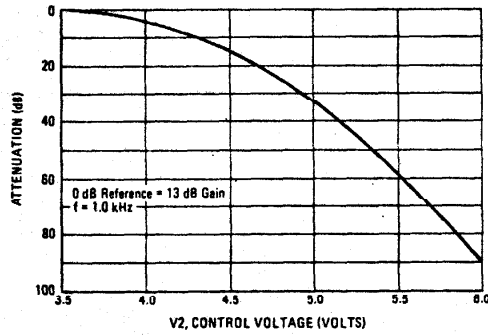


FIGURE 4 – ATTENUATION versus CONTROL RESISTOR

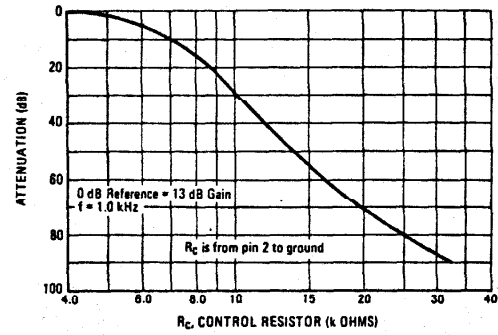


FIGURE 5 – FREQUENCY RESPONSE

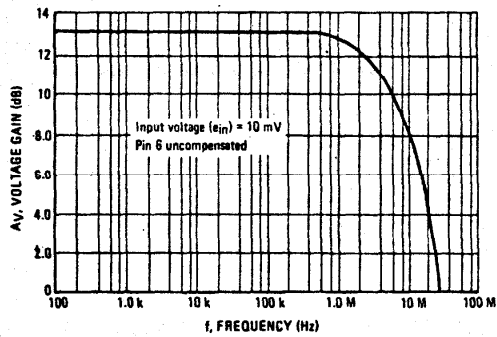


FIGURE 6 – OUTPUT VOLTAGE SWING

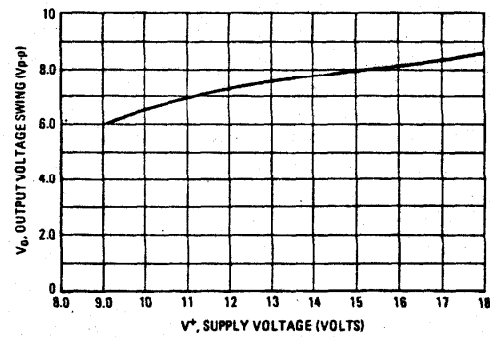
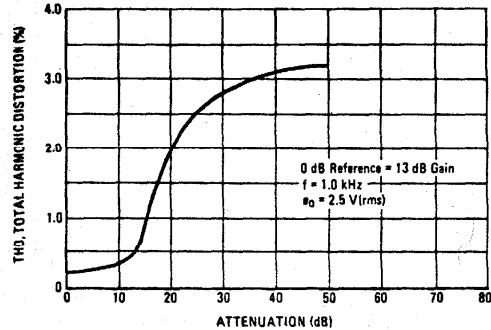
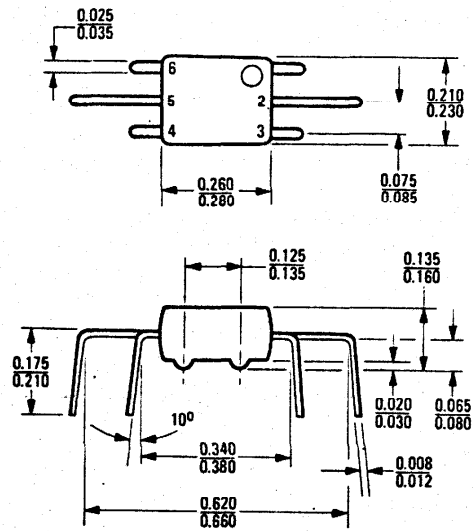


FIGURE 7 – TOTAL HARMONIC DISTORTION



MFC6040 (continued)

OUTLINE DIMENSIONS



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