MFC8030

HIGH FREQUENCY CIRCUIT

Advance Information

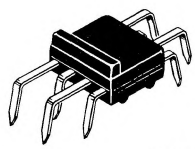
DIFFERENTIAL/CASCODE AMPLIFIER

. . . designed for applications requiring differential or cascode amplifiers.

- Extremely Flexible Amplifier
- Diode Available for Biasing
- Economical 8-Staggered Lead Package

DIFFERENTIAL/CASCODE AMPLIFIER

Silicon Monolithic
Functional Circuit

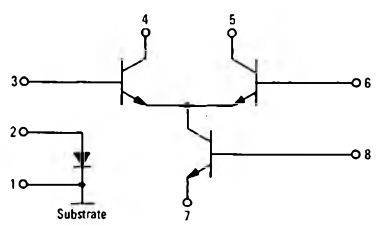


CASE 644A
PLASTIC PACKAGE

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

Rating	Symbol	Value	Unit
Power Supply Voltage	V^+	20	Vdc
Differential Input Voltage	V_{in}	±5.0	Vdc
Power Dissipation @ T_A = 25°C (Package Limitation)	P_D	1.0	Watt
Derate above 25°C	$1/\theta_{JA}$	10	mW/°C
Operating Temperature Range	T_A	-10 to +75	°C

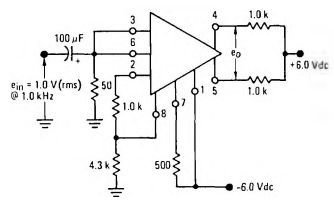
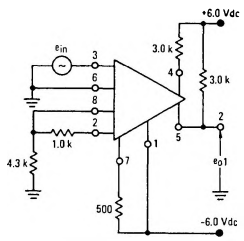
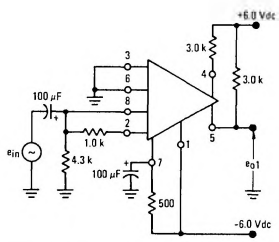
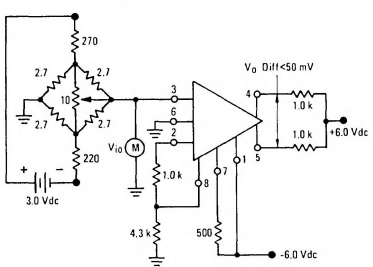
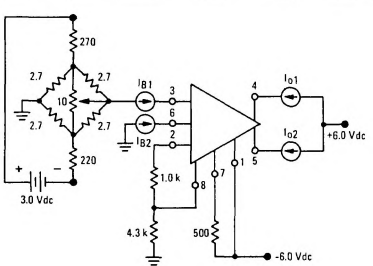
FIGURE 1 – CIRCUIT SCHEMATIC



See Packaging Information Section for outline dimensions.

MFC8030 (continued)

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Circuit	Characteristic	Symbol	Min	Typ	Max	Unit
	AC Common-Mode Rejection $e_{4,5} = e_o$ $CMR = 20 \log \frac{(e_{in})}{(e_o)}$	CMR_{AC}	–	35	–	dB
	Differential-Mode Voltage Gain A_V Diff = $20 \log \frac{(e_{o1})}{(e_{in})}$ (e_{in} = 1.0 kHz, 1.0 mV[rms]) (e_{in} = 10 MHz, 1.0 mV[rms]) (e_{in} = 50 MHz, 1.0 mV[rms])	$A_{V(dif)}$	 – – –	 32 26 10	 – – –	dB
	Cascode-Mode Voltage Gain A_V Cascode = $20 \log \frac{(e_{o1})}{(e_{in})}$ (e_{in} = 1.0 kHz, 1.0 mV[rms]) (e_{in} = 10 MHz, 1.0 mV[rms]) (e_{in} = 50 MHz, 1.0 mV[rms])	$A_{V(cscd)}$	 – – –	 36 31.5 15	 – – –	dB
	Input Offset Voltage	V_{io}	–	5.0	10	mV
	DC Current Gain Match (I_{o1} = I_{o2})	$\frac{h_{FE1}}{h_{FE2}}$	0.8	–	1.1	–