37 Musical Modulator

□ Feed this circuit a sample audio tone, and it   gives you back a musical note with selectable

PARTS LIST FOR MUSICAL MODULATOR
C1—0.33-uF capacitor, 35-WVDC
C2, C3—0.1-uF mylar capacitor, 35-WVDC
C4—0.005-uF electrolytic capacitor, 16-WVDC
C5—2.2-uF electrolytic capacitor, 16-WVDC
D1, D2—1N914 diode
IC1—RCA CA3080 transconductance amp
J1, J2—phone jack
Q1—2N3904 NPN transistor
R1—9100-ohm, ½-watt 10% resistor
R2, R3, R4—1000-ohm, ½-watt 10% resistor
R5—2.2 Megohm-ohm, ½-watt 10% resistor
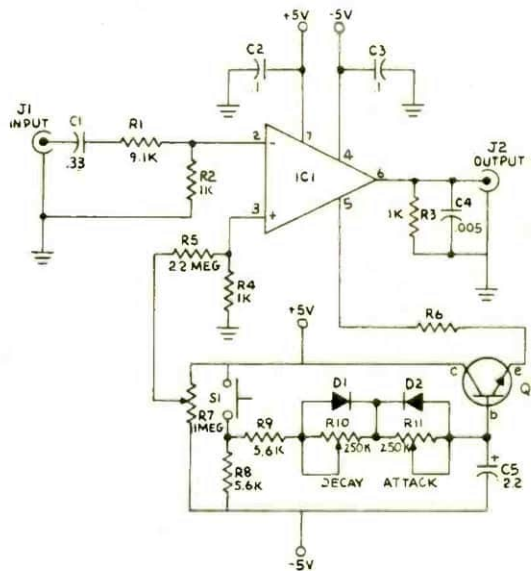**R6**—15,000-ohm, ½-watt 10% resistor
R7—1 Megohm trimmer potentiometer
R8 R9—5600-ohm, ½-watt 10% resistor
R10, R11—250,000 linear-taper potentiometer
S1—normally open SPST pushbutton switch

attack, sustain and decay. Input impedance is 10,000-ohms, output impedance is 1000-ohms, and the gain is unity. Best results will be obtained with signal imputs having amplitudes of 1-volt peak-to-peak or less. When S1 is pressed, the output volume rises at a rate determined by attack control R11. As long as S1 is pressed, the sound will be sustained. Releasing S1 causes the note to decay at a rate determined by decay control R10. Try sine, square or triangular wave inputs for musical notes. With a noise input you can imitate such things as gunshots and explosions. Trimmer R7 can be adjusted to cancel out any audible "thumping" (noticeable with very rapid attack or decay).