GENERAL INSTRUMENT

AY-5-1317A

Chord Generator

FEATURES

- ROOT, 3rd, 5th, 7th Chord Elements
- Additional output for special effects
- Sustain capability
- Top key priority
- Self-contained oscillator circuit
- Operated with single pole, single throw switch matrix

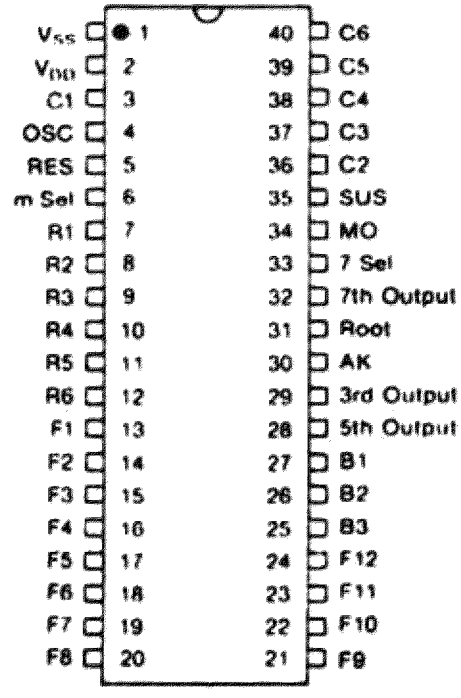
DESCRIPTION

The AY-5-1317A is a P-Channel MOS IC which accepts twelve basic frequencies (one full octave) and outputs the notes necessary to form Major, Minor and Seventh chords. This is the only known standard chord generator IC that performs these functions. The chord elements (ROOT, 3rd, 4th, 5th, 6th, and 7th) can be multiplexed internally to perform special effects such as walking bass, rhythm arpegio, alternating bass, etc. The AY-5-1317A will operate in conjunction with and, through the KEY DOWN output, synchronize a rhythm generator such as the General Instrument AY-5-1315. The AY-5-1317A has a keyboard priority system with the C Major chord having the highest priority.

PIN CONFIGURATION

40 LEAD DUAL IN LINE

Top View



ELECTRICAL CHARACTERISTICS

Maximum Ratings*

V_{DD} with respect to V_{SS}	−20V to +0.3V
Logic Input Voltages with respect to V_{SS}	−20V to +0.3V
Storage Temperature	−65°C to +150°C
Operating Temperature (T_A)	0°C to +70°C

*Exceeding these ratings could cause permanent damage. Functional operation of this device at these conditions is not implied —operating ranges are specified below.

Standard Conditions (unless otherwise noted)

V_{DD} = −15V ±3V
V_{SS} = 0V (substrate voltage)
Operating Temperature (T_A) = +25°C

Characteristic	Sym	Min	Typ**	Max	Conditions
Input Logic Levels					
Logic 0	VIL	V_{DD}	—	−8.5V	
Logic 1	VIH	−1.0V	—	+0.3V	
Input Capacitance	CIN	—	—	10 pF	
Note Outputs					
Logic 0	R_{OFF}	160kΩ	—	—	
Logic 1	R_{ON}	—	—	500Ω	
Row Drivers Output Impedance		—	750Ω	—	V_{DD} = −15V
Control Input		10kΩ	—	1000kΩ	
Keyboard Row Input Impedance		24kΩ	—	100kΩ	
Keyboard Scan Frequency		—	25kHz	—	500 pF, 750K, V_{DD} = −15V

**Typical values are at +25°C and nominal voltages.

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