

μPC1290C

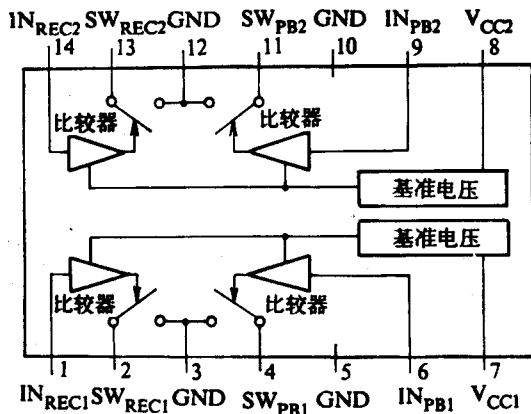
录/放音转换开关

简要说明

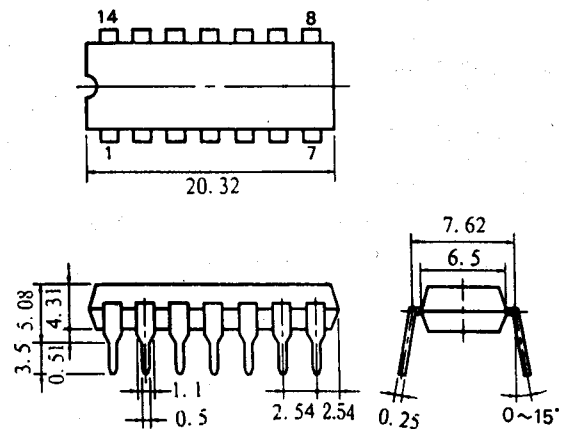
μPC1290C 是录/放音频磁头转换开关电路,由两个基准电压源和四个比较器和录/放开关组成。该电路的特点是:有较高的绝缘电压(最小值 100V_{p-p}),开关导通电阻小,开关的寿命长,可靠性高。

该电路适用于磁带录音座中作录/放磁头转换开关。

电路框图 [V_{CC(max)} = 16V, P_{D(max)} = 400mW]



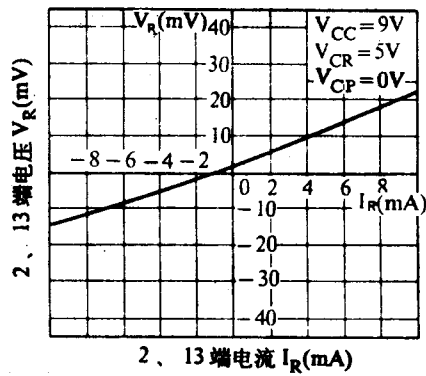
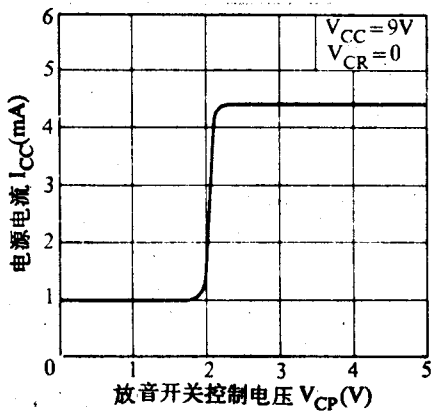
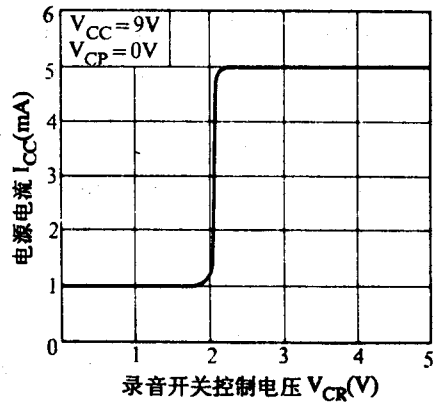
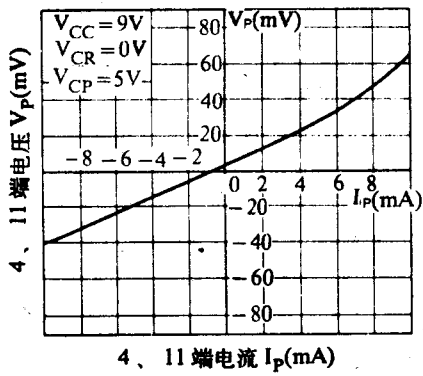
外形图



电参数 (V_{CC} = 9.0V)

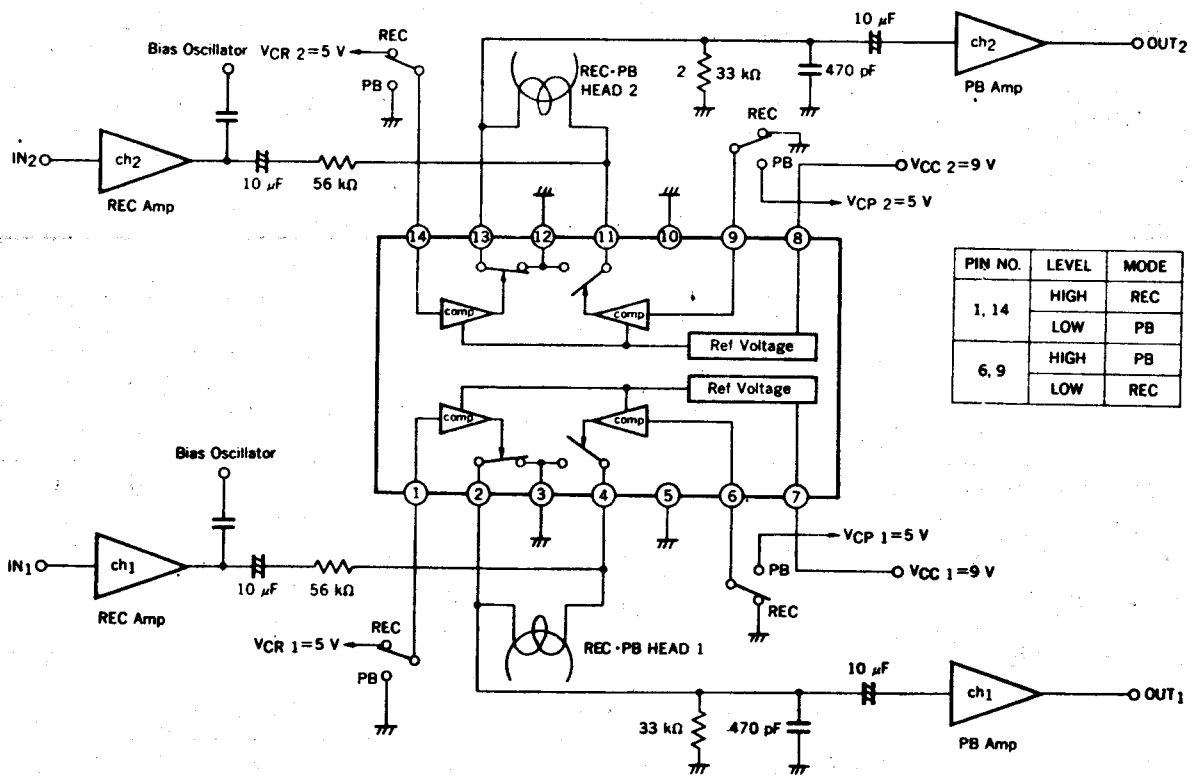
静态电源电流 1	I _{CC1}	V _{CR(录音)} = 0V, V _{CP(放音)} = 0V	≤ 2mA
静态电源电流 2	I _{CC2}	V _{CR} = 5V, V _{CP} = 5V	≤ 15mA
低电平输入电压(录音)	V _{CRL}		0 ~ 1.5V
高电平输入电压(录音)	V _{CRH}		2.5 ~ 8V
2 端、13 端导通电阻	R _R	V _{CR} = 5V, I _R = ± 1mA	≤ 10Ω
4 端、11 端导通电阻	R _P	V _{CR} = 5V, I _P = ± 1mA	≤ 20Ω
2 端、13 端漏泄电流	I _{LR}	V _B = ± 0.1V	≤ ± 2μA
4 端、11 端漏泄电流	I _{LP}	V _B = ± 50V	≤ ± 10μA
2 端、13 端剩余电压	V _{RO}	V _{CR} = 5V	≤ 6mV
4 端、11 端剩余电压	V _{PO}	V _{CP} = 5V	≤ 15mV

特点与性能



典型应用

磁带录音座中作磁头录/放音转换开关





BIPOLAR ANALOG INTEGRATED CIRCUIT

μ PC1290C

REC/PB AUDIO HEAD SWITCH

DESCRIPTION

The μ PC1290C is a monolithic integrated circuit designed for the recording/playback head turnover switch of a tape deck.

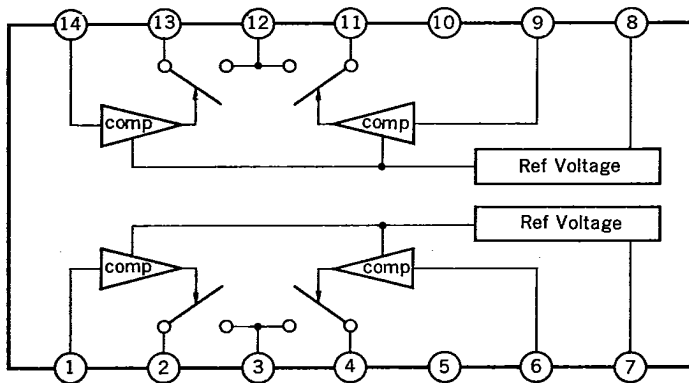
It is composed of two reference voltage source, four comparators and REC/PB switches.

The IC is encapsulated in 14 pin dual-in-line plastic package.

FEATURES

- High Isolation Voltage: 100 V_{p-p} MIN. (100 kHz)
- Low On Resistance.
- TTL Level Operation.
- High Reliability by Electric Switch.
- 2 Switch Circuits are Built-In.

BLOCK DIAGRAM



CONNECTION DIAGRAM

PIN NO.	SYMBOL	CONNECTION
1	IN _{R1}	REC SW ₁ Control Terminal
2	SW _{R1}	REC SW ₁ Terminal
3	GND	GND Terminal
4	SW _{P1}	PB SW ₁ Terminal
5	GND	GND Terminal
6	IN _{P1}	PB SW ₁ Control Terminal
7	V _{CC1}	V _{CC1} Terminal
8	V _{CC2}	V _{CC2} Terminal
9	IN _{P2}	PB SW ₂ Control Terminal
10	GND	GND Terminal
11	SW _{P2}	PB SW ₂ Terminal
12	GND	GND Terminal
13	SW _{R2}	REC SW ₂ Terminal
14	IN _{R2}	REC SW ₂ Control Terminal

NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

Supply Voltage	V _{CC}	16	V
Power Dissipation	P _D	400*	mW
Operating Temperature Range	T _{opt}	-20 to +70	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C
Pin 4, 11 Input Voltage (DC)	V _{in 4} , V _{in 11}	±65	V _{p-p}
Pin 4, 11 Input Current	I _{in 4} , I _{in 11}	±1.5	mA
Pin 2, 13 Input Voltage	V _{in 2} , V _{in 13}	±0.2	V
Pin 2, 13 Input Current	I _{in 2} , I _{in 13}	±10	mA

*Value at T_a = 70 °C

RECOMMENDED OPERATING CONDITION (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V _{CC}	4.5	9	14.4	V
Input Voltage (4, 11 pin)	V _{i4} , V _{i11}	-	-	100*	V _{p-p}
High Level Input Voltage R, P	V _{CRH} , V _{CPH}	2.5	-	8.0**	V

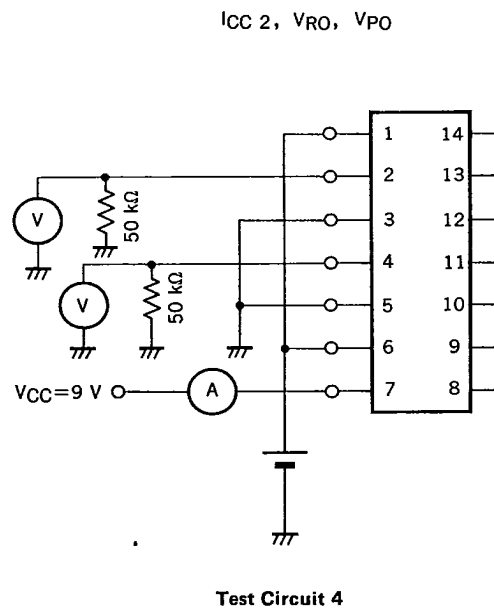
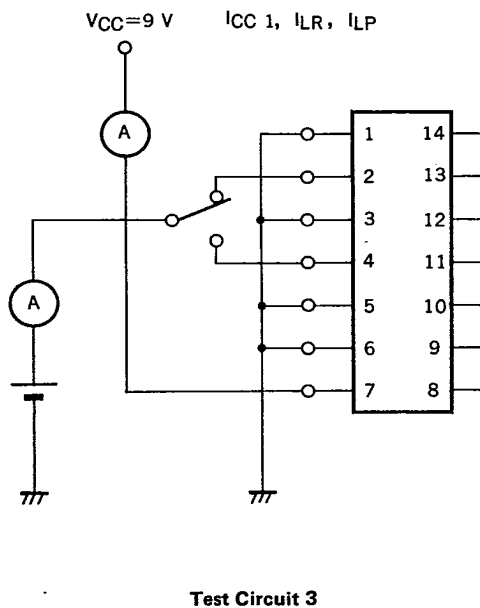
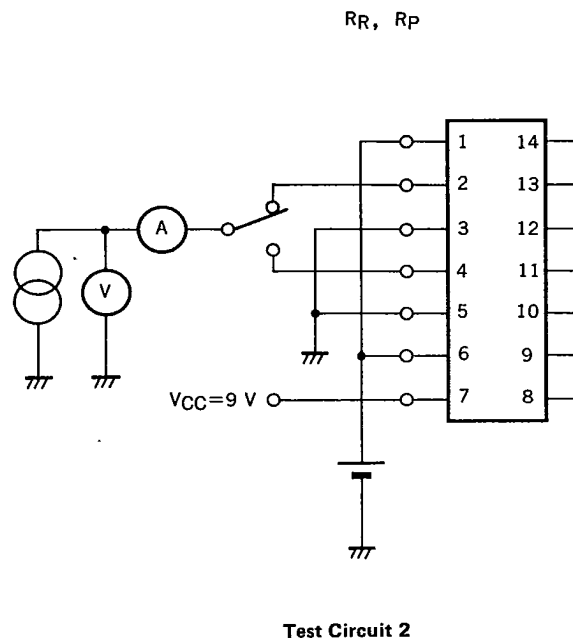
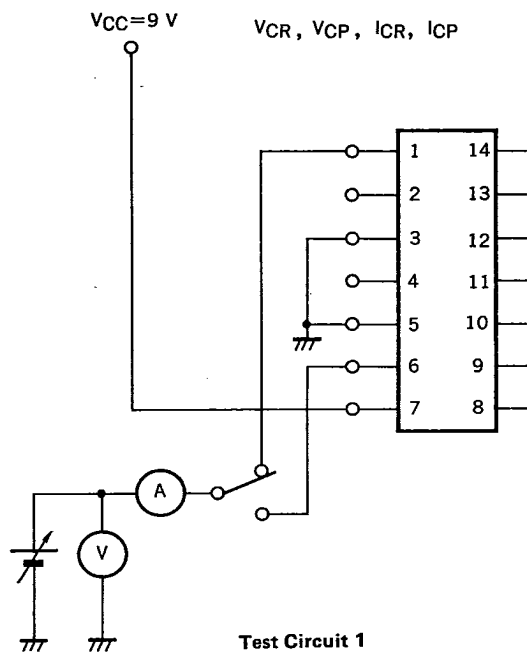
* f = 100 kHz, when Input Voltage (4, 11 pin) is more than 100 V_{p-p} AC, input voltage waveform has large distortion.

** When the V_{CC} is less than 8 V, V_{CRH}, V_{CPH} MAX. are V_{CC}.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C, V_{CC} = 9.0 V)

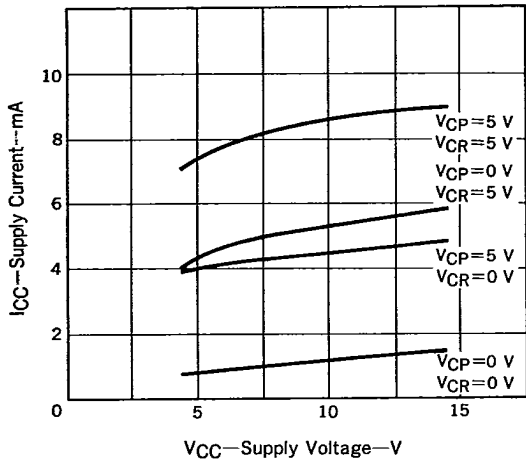
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Supply Current 1	I _{CC 1}			2	mA	V _{CR} = 0 V, V _{CP} = 0 V
Supply Current 2	I _{CC 2}			15	mA	V _{CR} = 5 V, V _{CP} = 5 V
Low Level Input Voltage R	V _{CRL}	0		1.5	V	
High Level Input Voltage R	V _{CRH}	2.5		8	V	
Low Level Input Voltage P	V _{CPL}	0		1.5	V	
High Level Input Voltage P	V _{CPH}	2.5		8	V	
High Level Input Current R	I _{CR}		50	100	μA	V _{CR} = 5 V
High Level Input Current P	I _{CP}		50	100	μA	V _{CP} = 5 V
Pin 2, 13 ON Resistance	R _R		5	10	Ω	V _{CR} = 5 V, I _R = ±1 mA
Pin 4, 11 ON Resistance	R _P		10	20	Ω	V _{CP} = 5 V, I _P = ±1 mA
Pin 2, 13 Leak Current	I _{LR}			±2	μA	V _B = ±0.1 V
Pin 4, 11 Leak Current	I _{LP}			±10	μA	V _B = ±50 V
Pin 2, 13 Offset Voltage	V _{RO}		3	6	mV	V _{CR} = 5 V
Pin 4, 11 Offset Voltage	V _{PO}		4	15	mV	V _{CP} = 5 V

TEST CIRCUIT (CH1 ONLY)

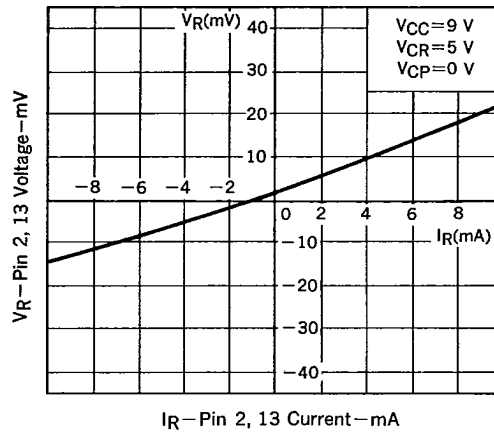


TYPICAL CHARACTERISTICS (T_a = 25 °C)

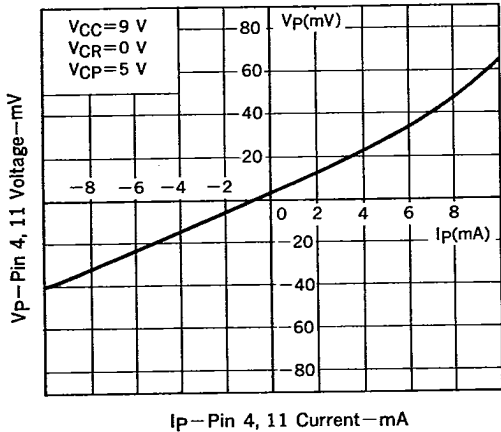
SUPPLY CURRENT vs. SUPPLY VOLTAGE



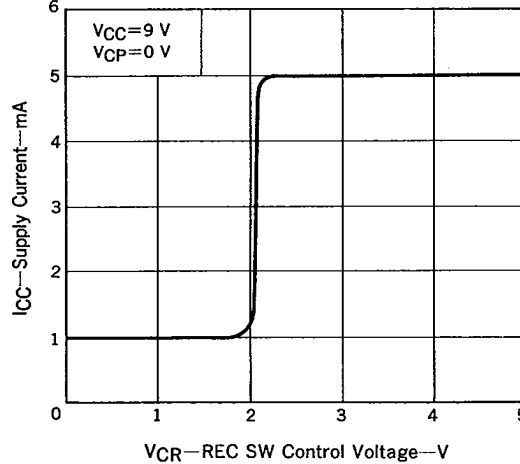
REC SW ON RESISTANCE CHARACTERISTICS



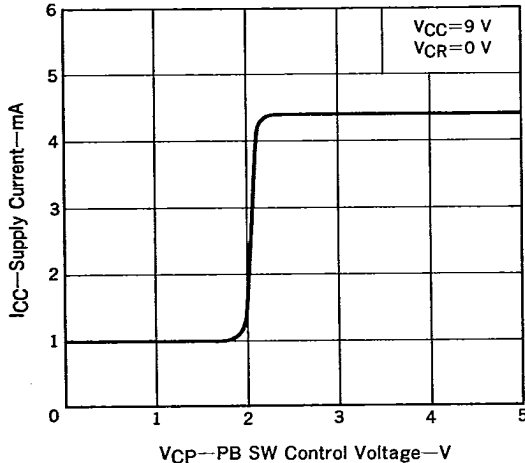
PB SW ON RESISTANCE CHARACTERISTICS



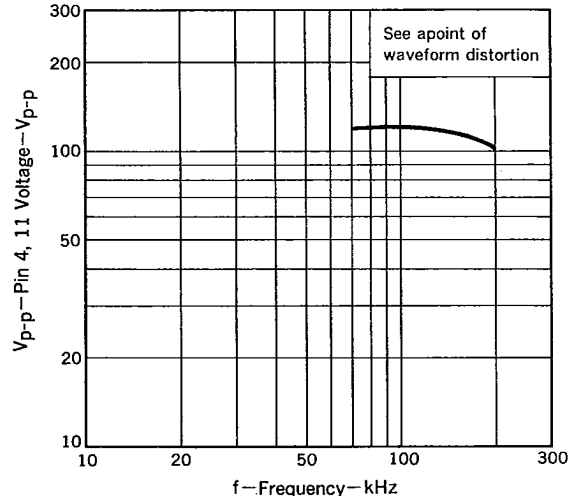
SUPPLY CURRENT vs. REC SW CONTROL VOLTAGE



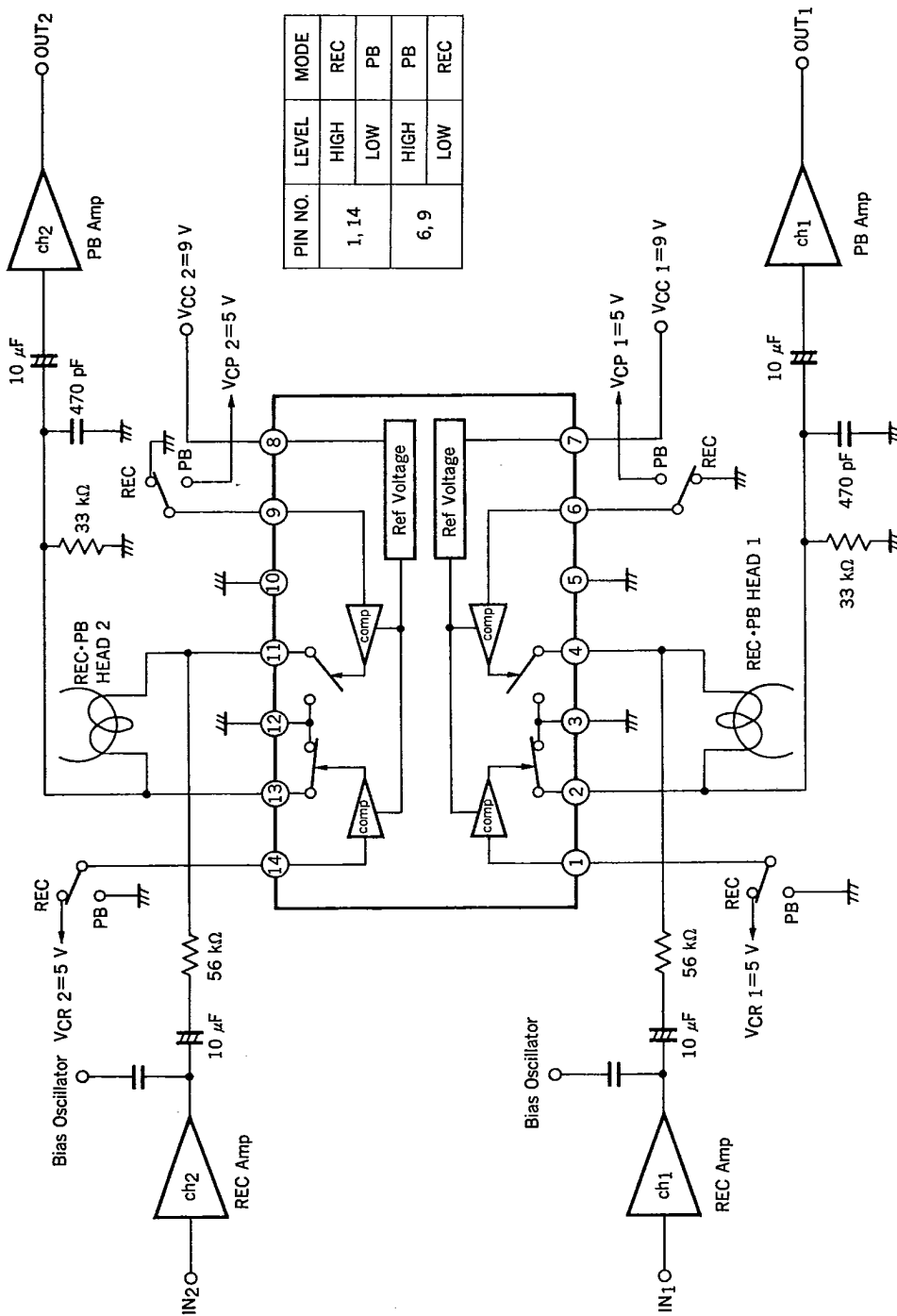
SUPPLY CURRENT vs. PB SW CONTROL VOLTAGE



PIN 4, 11 VOLTAGE vs. FREQUENCY

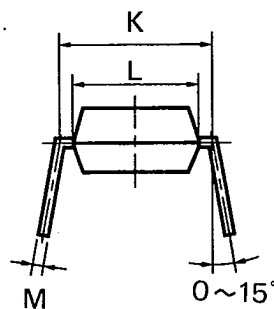
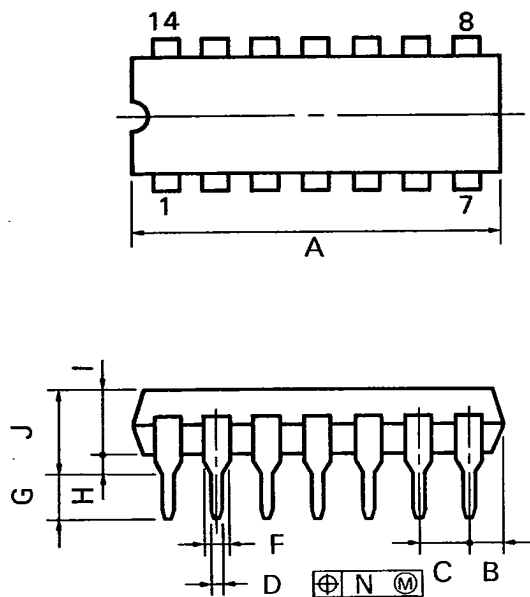


APPLICATION CIRCUIT



PIN NO.	LEVEL	MODE
1, 14	HIGH	REC
	LOW	PB
6, 9	HIGH	PB
	LOW	REC

14PIN PLASTIC DIP (300 mil)



P14C-100-300B2

NOTES

- 1) Each lead centerline is located within 0.25 mm (0.01 inch) of its true position (T.P.) at maximum material condition.
- 2) Item "K" to center of leads when formed parallel.

ITEM	MILLIMETERS	INCHES
A	20.32 MAX.	0.800 MAX.
B	2.54 MAX.	0.100 MAX.
C	2.54 (T.P.)	0.100 (T.P.)
D	0.50 ^{+0.10}	0.020 ^{+0.004} / _{-0.005}
F	1.1 MIN.	0.043 MIN.
G	3.5 ^{+0.3}	0.138 ^{+0.012}
H	0.51 MIN.	0.020 MIN.
I	4.31 MAX.	0.170 MAX.
J	5.08 MAX.	0.200 MAX.
K	7.62 (T.P.)	0.300 (T.P.)
L	6.5	0.256
M	0.25 ^{+0.10} / _{-0.05}	0.010 ^{+0.004} / _{-0.003}
N	0.25	0.01