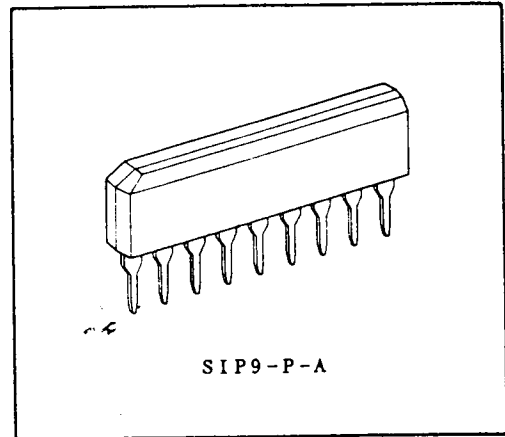


# PROTECTION CIRCUIT FOR OCL POWER AMPLIFIER AND SPEAKER

- Over current detecting circuit  
Operation at the time of over load, such as a speaker terminal short.
- DC voltage detecting circuit  
Operation at the time when positive or negative DC voltage ( $\pm 1.1V$  of detection level) has generated at output terminals.
- Muting circuit  
Transient noise protection when power is ON-OFF.
- Relay driver circuit (Drive current of 130mA at Max.)
- Operation by dual power supply.



Weight: 0.9g(Typ.)

## MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	60	V
Relay Driver Output Current	I <sub>OUT</sub>	130	mA
Power Dissipation	P <sub>D</sub>	500	mW
Operating Temperature	T <sub>opr</sub>	-20 ~ 75	°C
Storage Temperature	T <sub>stg</sub>	-55 ~ 150	°C

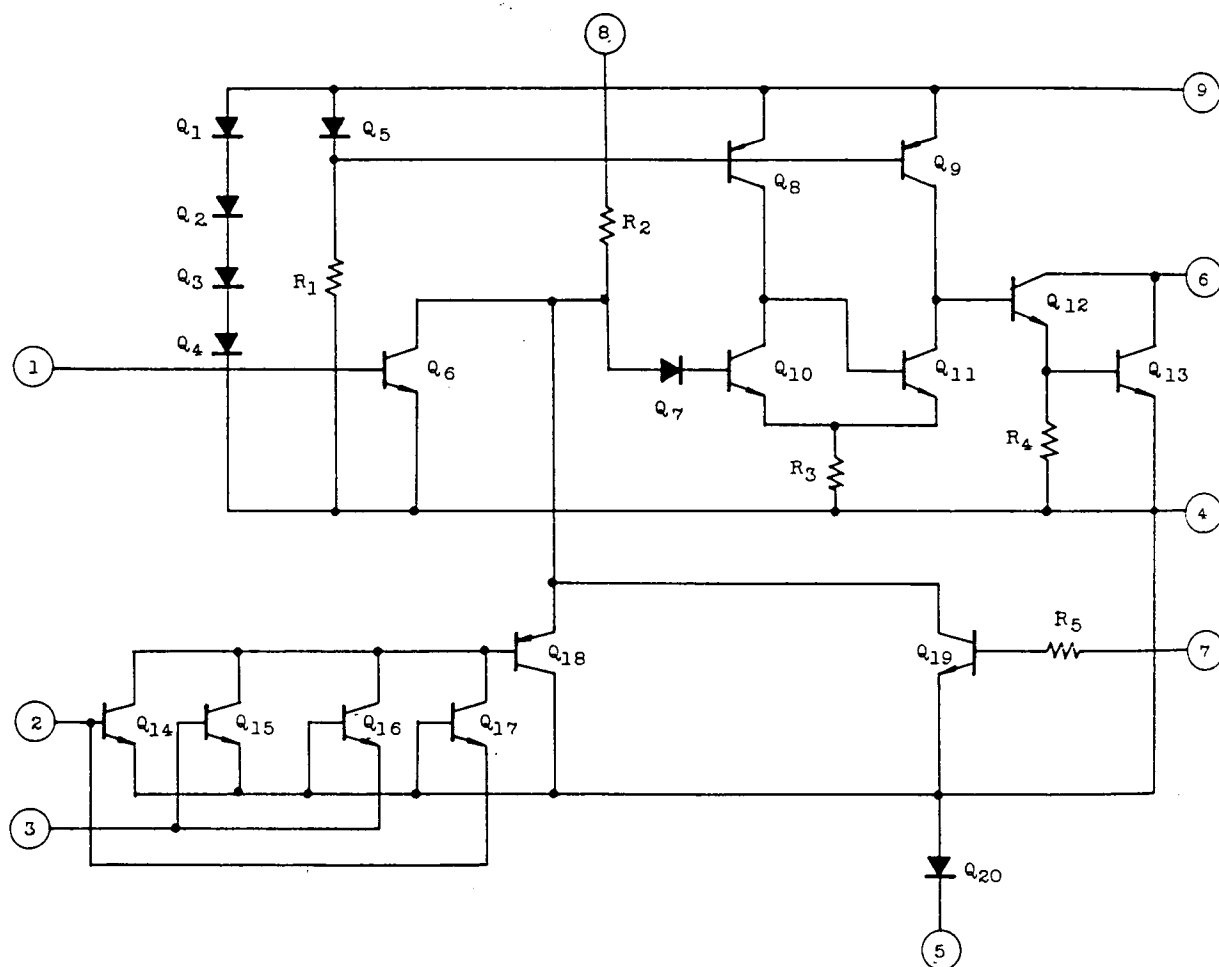
## ELECTRICAL CHARACTERISTICS (V<sub>CC</sub>=±50V, Ta=25°C)

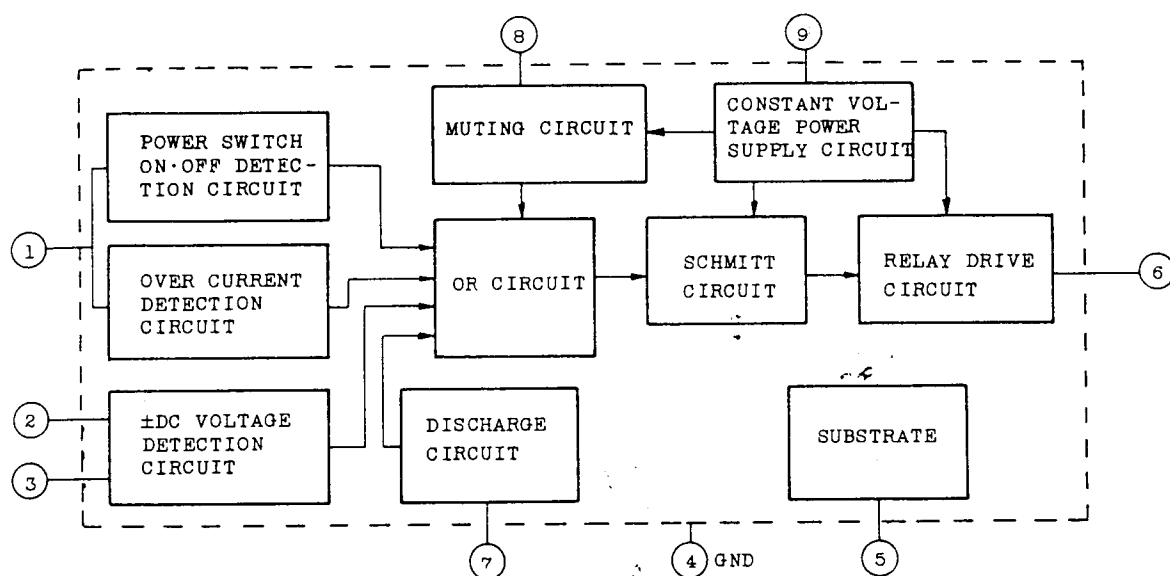
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Current	I <sub>CC ON</sub>	-	V <sub>I</sub> IN=-5V, ±V <sub>DC</sub> =0V, SW:OFF	-	54	-	mA
	I <sub>CC OFF</sub>	-	V <sub>I</sub> IN=0V, ±V <sub>DC</sub> =0V, SW:OFF	1.5	2.4	4	
DC Detector Voltage	+V <sub>DC</sub>	-	Note 1	0.9	1.1	1.3	V
	-V <sub>DC</sub>	-	Note 1	-0.9	-1.1	-1.3	
Output Voltage	V <sub>OUT(ON)</sub>	-	V <sub>I</sub> IN=-5V, ±V <sub>DC</sub> =0V, SW:OFF	-	1	2	V
	V <sub>OUT(OFF)</sub>	-	V <sub>I</sub> IN=0V, ±V <sub>DC</sub> =0V, SW:OFF	-	50	-	
Muting Time at Power ON	M.T (V <sub>CC ON</sub> )	-	Note 2	-	4	-	sec
Muting Time with Load Shorted	M.T	-	Note 3	-	3.5	-	sec
Pin 8 Entering Current	I <sub>8</sub>	-	-	2	8	-	μA
Pin 9 Terminal Voltage	V <sub>9</sub>	-	-	-	3.1	-	V
Pin 1 Terminal Voltage	V <sub>1</sub>	-	-	-	0.75	-	V
Pin 5 Terminal Voltage	V <sub>5</sub>	-	-	-	-0.75	-	V

## MAXIMUM INTO OR OUT CURRENT

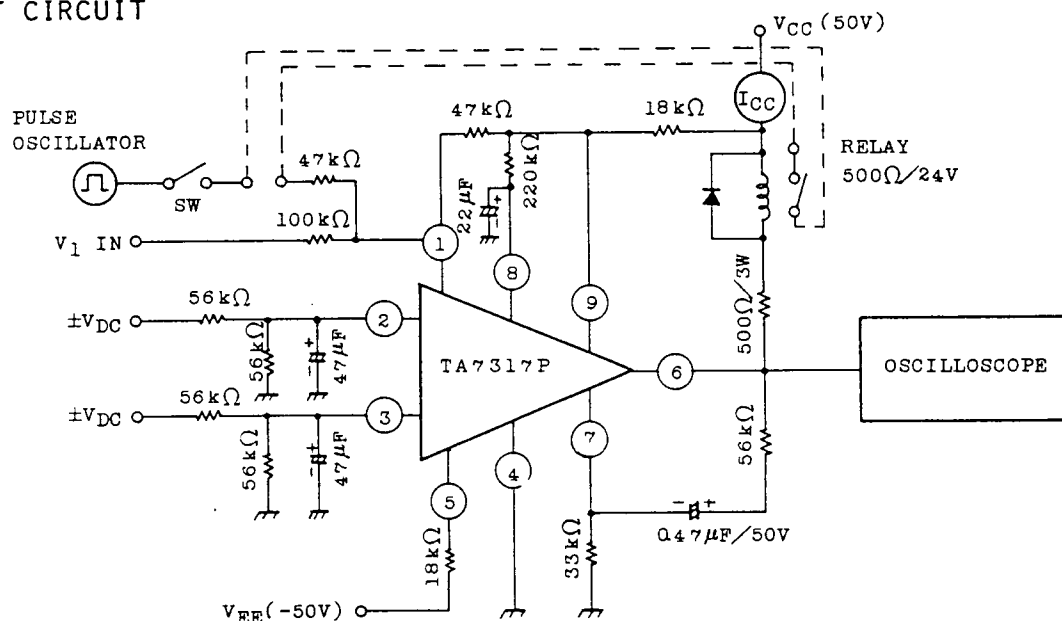
CHARACTERISTIC	SYMBOL	RATING	UNIT
Pin 1 Current	$I_1$	$\pm 1.0$	mA
Pin 2 Current	$I_2$	$\pm 1.0$	mA
Pin 3 Current	$I_3$	$\pm 1.0$	mA
Pin 5 Current	$I_5$	-6.0	mA
Pin 7 Current	$I_7$	1.0	mA
Pin 9 Current	$I_9$	5.0	mA

## EQUIVALENT CIRCUIT





## TEST CIRCUIT



- (Note) 1. The value of  $\pm V_{DC}$  at the time when the relay is turned from ON to OFF in the condition of  $V_1 \text{ IN} = -5V$  and SW-OFF.
2. The time required for the relay being turned from OFF to ON at  $+V_{CC}$  ON in the condition of  $V_1 \text{ IN} = -5V$ ,  $\pm V_{DC} = 0V$ , and SW-OFF.
3. The duration of the relay being able to keep OFF when SW is turned ON in the condition of  $V_1 \text{ IN} = -5V$  and  $\pm V_{DC} = 0V$ . At that time input pulse is 3ms, -3V.

