

DESCRIPTION

The M5172L is a semiconductor integrated circuit designed for use in zero-point ignition temperature control circuits. It consists of a rectifier circuit, zero-point synchronous pulse generator circuit, temperature adjustment circuit using a differential amplifier, and a pulse generator circuit that is used in safety circuit.

The built-in zero-point ignition circuit and differential amplifier can operate directly from commercial power supply voltage through a resistor of 10k (at 100Vrms AC), permitting the M5172L to be widely applied in temperature control circuits using thyristors.

FEATURES

- Can be driven directly from commercial power supply voltage (100Vrms AC).
- Built-in zero-point ignition control circuit
- Can compensate for line voltage and line frequency fluctuations
- Includes a pulse generator circuit for a safety circuit

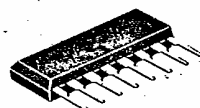
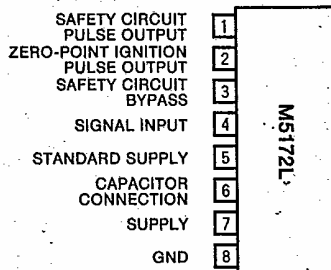
APPLICATION

Temperature control circuit for electric blankets, zero-point ignition circuit for thyristors, and all kinds of temperature control circuits.

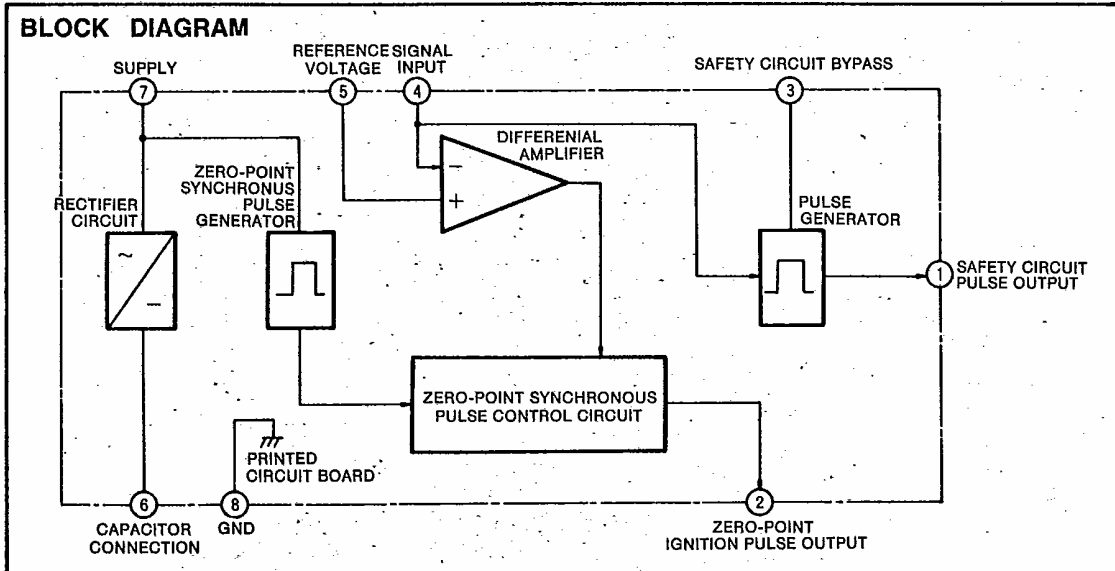
RECOMMENDED OPERATING CONDITIONS

AC supply voltage range.....90~110Vrms(50~60Hz)
 Rated AC supply voltage.....100Vrms(50~60Hz)
 (Note that a resistor of 10k or greater ($\geq 2W$) should be connected between pin ⑦ and the AC supply voltage.)

PIN CONFIGURATION (TOP VIEW)



8-pin molded plastic DIP



ZERO-POINT IGNITION TEMPERATURE CONTROL CIRCUIT

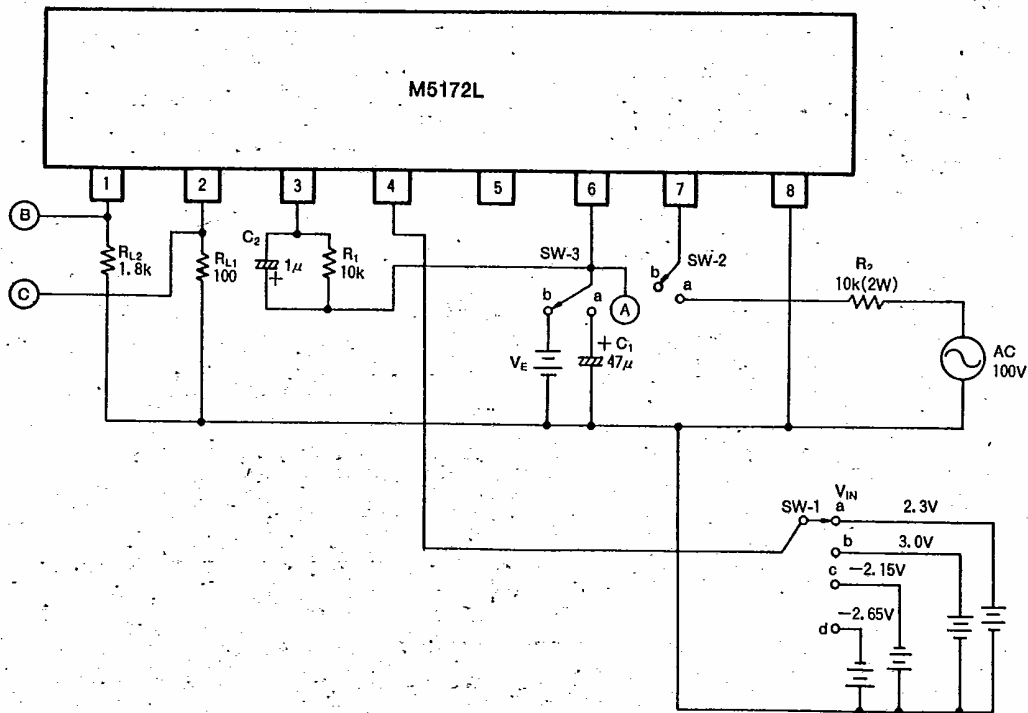
ABSOLUTE MAXIMUM RATINGS (T_a=25°C, unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
V _{CC}	Supply voltage (between pins ① and ⑧)		10	V
I _Q	Pin ① sink current		10	mA
P _d	Power dissipation		360	mW
K _e	Thermal derating	T _a ≥ 25°C	3.5	mW/°C
Topg	Operating temperature range		-20~+60	°C
Tstg	Storage temperature range		-20~+125	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
V _{DC}	Rectification current (between pins ⑥ and ⑧)	C ₁ =47μF, R ₂ =10kΩ	5.85		6.9	V
V _{TH-T}	Differential amplifier ON level	V _E =5.9V	2.3	2.7	3.0	V
V _{TH-S}	Safety circuit ON level	V _E =5.9V	-2.65	-2.4	-2.15	V
V _{OH(T)}	Zero-point synchronous pulse peak value	R _{L1} =100Ω, V _E =5.9V	0.65			V
V _{OH(S)}	Safety circuit output pin "H" level	R _{L2} =1.8kΩ, V _E =5.9V	0.59			V

TEST CIRCUIT



Unit

Resistance : Ω

Capacitance : F

