

MC3370P

ORDERING INFORMATION

Device	Temperature Range	Package
MC3370P	-10°C to +75°C	Plastic DIP

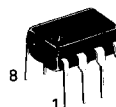
ZERO VOLTAGE SWITCH

... designed for use in ac power switching applications with output drive capable of triggering triacs. Other operational features include; (1) a built-in voltage regulator that allows direct ac line operation, (2) a differential input with dual sensor inputs capable of testing the condition of two external sensors and controlling the gate pulse to a triac accordingly; (hysteresis or proportional control to this section may be added if desired) (3) sensor input "open and short" protection; this insures that the triac will never be turned "on" if either of the inputs are shorted or opened (4) a zero crossing detector that synchronizes the triac gate pulses with the zero crossing of the ac line voltage. This eliminates radio frequency interference (RFI) when used with resistive loads.

- Heater Controls
- Photo Controls
- Threshold Detector
- Lamp Driver
- Formerly MFC8070 in Case 644A Package
- Valve Control
- On-Off Power Controls
- Relay Driver
- Flasher Control

ZERO VOLTAGE SWITCH

SILICON MONOLITHIC FUNCTIONAL CIRCUIT



P SUFFIX
PLASTIC PACKAGE
CASE 626-04

FIGURE 1 - CIRCUIT SCHEMATIC

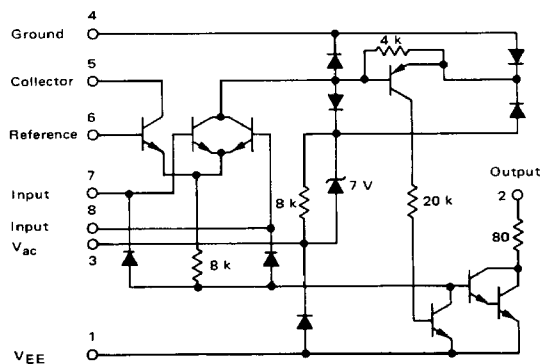
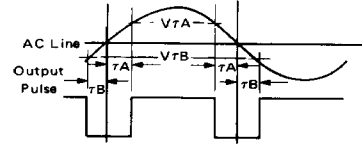


FIGURE 2 – OUTPUT PULSE DEFINITION

MAXIMUM RATINGS (T_A = +25°C unless otherwise noted.)

Rating	Symbol	Value	Unit
DC Voltage	V ₅₋₈	15	V _{dc}
DC Voltage	V ₄₋₈	15	V _{dc}
DC Voltage	V ₇₋₈	15	V _{dc}
Peak Supply Current	I ₆	35	mA
Power Dissipation Derate above T _A = +25°C	P _D 1/R _{θJA}	1.2 10	Watts mW/°C
Operating Ambient Temperature Range	T _A	-10 to +75	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C



ELECTRICAL CHARACTERISTICS (T_A = +25°C unless otherwise noted.)

Characteristic Definitions	Characteristic	Symbol	Min	Typ	Max	Unit	
	V _S with Inhibit Output (Sw 1: A or B)	V _{SIO}	-	9.0	11	V _{dc}	
	Output Leakage Current (Sw 1: A or B)	I _{O L}	-	5.0	100	μA	
	Input Current 1 (Sw 1: A)	I ₁	-	5.0	15	μA	
	Input Current 2 (Sw 1: B)	I ₂	-	5.0	15	μA	
	Inhibit Threshold Voltage (Sw 1: A or B)	V _{THI}	V _{ref} +100 mV	V _{ref} +10 mV	-	-	V _{dc}
	V _S with Pulse Output (Sw 1: A or B)	V _{SPO}	6.0	8.5	-	V _{dc}	
	Peak Output Current (Sw 1: A or B)	I _{O pk}	50	80	-	mA	
	Pulse Threshold Voltage (Sw 1: A or B)	V _{THP}	-	V _{ref} -10 mV	V _{ref} -100 mV	-	V _{dc}
	Output Pulse Width (Sw 1: A or B, See Figure 2)	τ _A , τ _B V _{rA} , V _{rB}	-	70 ±4.5	-	-	μs V
	Output Current With Input Short (Sw 1: B; Sw 2: A) (Sw 1: A; Sw 2: B)	I _{SC}	-	5.0	100	μA	
			-	5.0	100	μA	

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MC3370P

FIGURE 3 — CIRCUIT WITH INCREASED PULSE WIDTH AND TRIAC DRIVER TO CONTROL HIGH-CURRENT SCR's

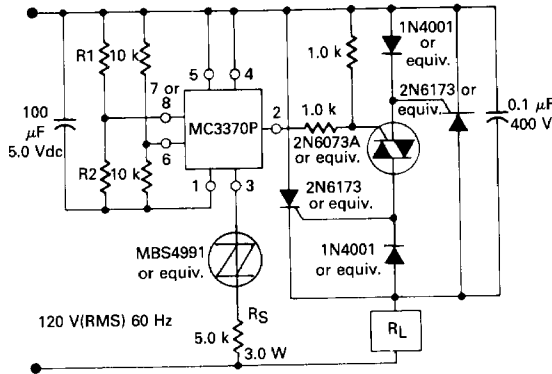


FIGURE 4 — OUTPUT PULSE WIDTH versus SOURCE RESISTANCE

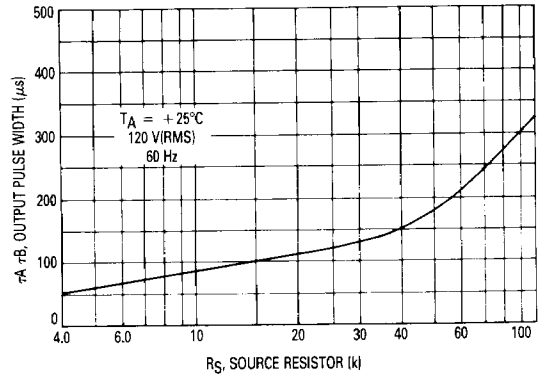
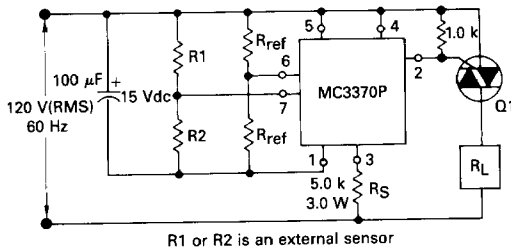
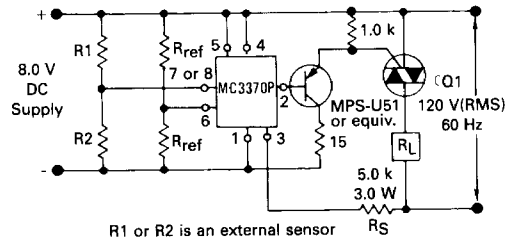


FIGURE 5 — TRIAC CONTROL CIRCUIT FOR GATE CURRENT 50 mA



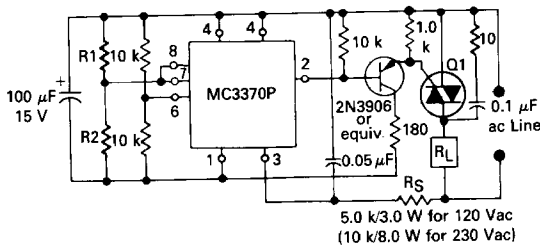
R1 or R2 is an external sensor

FIGURE 6 — TRIAC CONTROL CIRCUIT WITH CURRENT BOOST UTILIZING DC SUPPLY GATE CURRENT 0.5 A



R1 or R2 is an external sensor

FIGURE 7 — TRIAC CONTROL CIRCUIT GATE CURRENT 0.1 A



Recommended Motorola traics (Q1)

Maximum Continuous Current (A (RMS))	Triac Family	Case No.
12	2N6346A Series	Case 221 (TO-220AB)
25	MAC223 Series	Case 221 (TO-220AB)
40	2N5441 Series	Case 310 (TO-203)