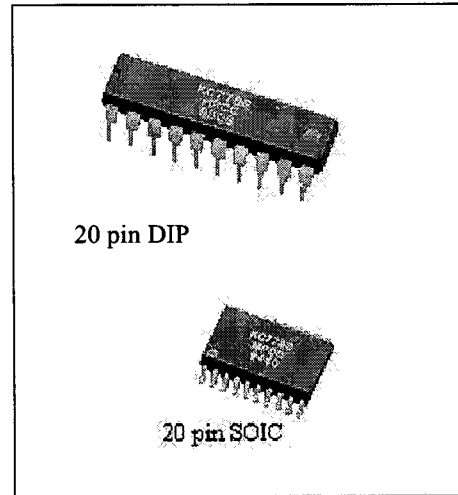


KC778B (MPCC) Specification

General :

The MPCC has been designed for easy implementation of AC control functions that use a Passive Infra-Red (PIR) motion detector. Due to its high sensitivity and reliability, it is also widely used in security product.

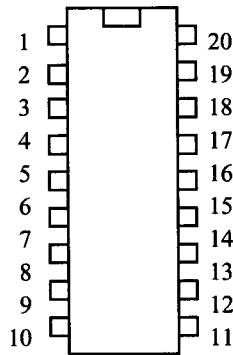
- Minimum external component
- High sensitivity
- High RFI immunity
- Daylight adjustment
- Off delay timer



Features:

- A) Circuit design maximizes performance while minimizing external component count and board layout space.
- B) Low cost solution for PIR motion control switching applications.
- C) High sensitivity PIR input with special noise cancellation circuitry.
- D) Choice of two PIR gain settings: 62 db and 68 db.
- E) Adjustable PIR sensitivity.
- F) Internal switched capacitor bandpass filter reduces external component count and improves reliability by minimizing sensitivity to external component values.
- G) RFI noise immunity exceeds 30 V/m from 1 MHz to 1000 MHz.
- H) High immunity to line frequency noise.
- I) Daylight detector circuitry is designed to use either silicon photo diode or CdS detector.
- J) Adjustable daylight detector sensitivity.
- K) Adjustable OFF timer accuracy is determined by external components.
- L) Output can directly drive TRIACs, opto-couplers and small relays (no buffering required).
- M) Four main operating modes can be used in any combination:
 - 1)Auto-ON: Load turns on when motion is detected (adjustable sensitivity).
Adjustable daylight detector disables Auto-ON during daytime.
Auto-ON mode can be disabled.
Daylight detector can be disabled.
 - 2)Auto-OFF: Adjustable OFF timer activates whenever motion stops.
Load turns off if there is no motion during the time delay.
If Auto-ON mode is disabled, the load will turn on if there is motion within 6 seconds after turn-off. (If the load goes off because you stopped moving (reading a book for example), you have 6 seconds to wave your arm to turn the load back on.)
Auto-OFF mode can be disabled.
 - 3)Manual-ON: Load turns on manually, with a momentary contact switch.
 - 4)Manual-OFF: Load turns off manually, with a momentary contact switch.
Load will remain off for 25 seconds, even if there is motion during this time (to give you time to leave the room).
- N) If the ON/AUTO/OFF input is held either high or low, the load will be held ON or OFF respectively, overriding all other modes, until the input returns to the AUTO position.
- O) If the Toggle input is held low, the load will change from on to off or from off to on, and will be held in that state, overriding all other modes, until the input returns high.
- P) When power is restored after an outage, the load will be OFF and motion will be ignored for 25 seconds.
- Q) Operating chip voltage is 4 - 15V.
- R) Operating chip current is typically 300 μ A.
- S) Chip is ESD protected to more than 1000 V (human body model).
- T) Operates with 50-60 Hz AC line frequency.

Pin Assignment:



20 pin DIP or SOIC

Pin	Name	Description
1	Vcc	Supply Voltage (5 V)
2	Sensitivity Adjust	PIR Motion Sensitivity Input
3	Offset Filter	PIR Motion Offset Filter
4	Anti-Alias	PIR Anti-Alias Filter
5	DC CAP	PIR Gain Stabilization Filter
6	VReg	Voltage Regulator Output
7	Pyro (D)	Pyro Drain Reference
8	Pyro (S)	Pyro Source Input Signal
9	Gnd (A)	Analog Circuitry Ground
10	Gnd (D)	Digital Circuitry Ground
11	Daylight Adjust	Daylight Adjustment and CdS Input
12	Daylight Sense	Silicon Photo Diode Input
13	Gain Select	PIR Gain Select Tri-State Input
14	ON/AUTO/OFF	Mode Select Tri-State Input
15	Toggle	Mode Select Toggle Input
16	OUT	Lights ON/OFF Output
17	LED	PIR Motion Indicator Output
18	C	OFF Timer Oscillator Input
19	R	OFF Timer Oscillator Output
20	FRef	Frequency Reference Oscillator

Pin Descriptions

- Vcc :** This is the regulated supply voltage to the chip (nominally 5 V).
- Sensitivity Adjust:** This pin is used to adjust the sensitivity threshold of the motion comparators. When the voltage on this pin equals the pyro drain reference voltage on pin 7 the PIR sensitivity will be minimum (± 500 mV). When the voltage on this pin is Gnd the PIR sensitivity will be maximum (± 125 mV). Intermediate voltages will provide intermediate sensitivities.
- Offset Filter:** This pin connects to an external capacitor of 10 μ F and holds the average value of the switched capacitor bandpass filter output. Motion is detected when the difference between this average and the actual filter output is greater than the sensitivity setting. The output of the switched capacitor bandpass filter can be seen directly on this pin if the external capacitor is disconnected, however, motion will not be detected under these conditions.
- Anti-Alias:** This pin connects to an external capacitor of 0.1 μ F providing low pass filtering of the PIR input signal, blocking input signals at and above the switching frequency of the switched capacitor bandpass filter.

- 5. DC CAP:** This pin connects to an external capacitor of 10 μF and holds the average pyro source voltage. The difference between this average and the actual pyro source voltage is amplified and coupled to the switched capacitor bandpass filter. The 10 μF capacitor must be a low leakage capacitor, such as a Tantalum capacitor.
- 6. VReg:** This pin outputs a voltage that can be used directly drive an external NPN/PNP voltage regulator, or the gate of an external depletion mode JFET voltage regulator pass element. This pin need not be connected if an external voltage regulator, such as a three pin regulator, is used to generate Vcc for the chip.
- 7. Pyro (D):** The pyro drain reference voltage is output on this pin. This voltage is power supply independent and is connected internally to special noise cancellation circuitry to improve the performance and reliability of the PIR interface. Externally, this pin is connected to the pyro drain and to a 0.1 μF capacitor. This voltage can also be divided down by an external pot to supply the Sensitivity Adjust voltage to pin 2.
- 8. Pyro (S):** This is the pyro source input pin that receives the PIR input signal. It is connected externally to the pyro source, a 200 pF capacitor and a 47 K Ω resistor to Gnd. This is a sensitive node and the length of the external interconnect to this pin should be made as short as possible. There should be a ground plane on the PC board under the PIR sensor.
- 9. Gnd (A):** This pin is the electrical ground for the internal analog circuitry of the chip.
- 10. Gnd (D) :** This pin is the electrical ground for the internal digital circuitry of the chip.
- 11. Daylight Adjust:** This pin is the output of the Daylight Sense amplifier and the input to the daylight comparator. When using a silicon photo diode daylight sensor, this pin is connected to Daylight Sense (pin 12) by a resistor or pot. The amount of resistance determines the gain of the Daylight Sense amplifier and hence the sensitivity of the daylight detector. When using a CdS daylight sensor, a pot is connected between this pin and Vcc, while the CdS sensor is connected across one side of the pot (two fixed resistors can be used instead of the pot). Daylight Sense (pin 12) must be connected to Vcc when using a CdS sensor. To disable the daylight detector, Daylight Adjust (pin 11) must be unconnected and Daylight Sense (pin 12) must be connected to Vcc. To disable Auto-ON mode, Daylight Adjust (pin 11) and Daylight Sense (pin 12) must both be connected to Vcc (the daylight detector is not used when Auto-ON mode is disabled).
- 12. Daylight Sense:** This pin is the input to the Daylight Sense amplifier. When using a silicon photo diode daylight sensor, this pin is connected to the cathode of the silicon photo diode and to a feedback resistor (or pot) from Daylight Adjust (pin 11). In all other cases, this pin is connected to Vcc.
- 13. Gain Select:** The Gain Select pin is a tri-state input used to select the gain of the PIR circuitry. When this pin is connected to Gnd, the PIR gain is set to 62 db. When this pin is unconnected or connected to Vcc, the PIR gain is set to 68 db. Normally this pin is unconnected except when less gain is required by a particular PIR sensor.
- 14. ON/AUTO/OFF:** This pin is a tri-state input used to determine the operation of the chip. Normally this pin is unconnected, allowing the chip to operate in its configured operating mode. If this pin is connected to Gnd, the load will turn off unconditionally and will remain off as long as this pin is connected to Gnd. If this pin is connected to Vcc, the load will turn on unconditionally and will remain on as long as this pin is connected to Vcc.
- 15. Toggle:** This pin is a toggle input used to determine the operation of the chip. Normally this pin is unconnected, allowing the chip to operate in its configured operating mode. If this pin is connected to Gnd, the load will change from on to off or from off to on and will remain in the new state unconditionally as long as this pin is connected to Gnd. If the ON/AUTO/OFF (pin 14) and Toggle (pin 15) switches are pressed such that one is trying to turn the load on unconditionally and the other is trying to turn the load off unconditionally, the load will be turned off (off overrides on).
- 16. OUT :** The output from this pin is used to turn the external load on or off through a TRIAC, relay or opto-coupler. The impedance of this pin is less than 35 Ω , enabling it to directly drive a small (100 Ω DC coil resistance) pulse relay through a 150 μF series capacitor. For proper operation, the load should come on when this pin goes high, the load should go off when this pin goes low.

- 17. LED:** The output from the motion comparator drives this pin through an internal 500 Ω current limiting resistor, enabling it to directly drive an LED motion indicator. Whenever motion is detected this pin will go high and the LED will light. When there is no motion this pin will be low.
- 18. C:** This pin is the input to the OFF timer oscillator. It is connected externally to a pot (or resistor) from R (pin 19) and to a capacitor. The OFF timer delay, in seconds, will be $5678 \times (40,000 + \text{pot resistance in Ohms}) \times (\text{capacitance in Farads})$. To disable Auto-OFF mode, this pin can be connected to Gnd or Vcc. For minimum time delay, C(pin 18) and R(pin 19) can be shorted together with no external resistor or capacitor. In this configuration, the output at OUT(pin 16) should be the same as the output at LED(pin 17).
- 19. R:** The output of the OFF timer oscillator drives this pin through an internal 40 K Ω series resistor. This pin is connected externally to C (pin 18) through a pot (or resistor). This pin can be connected directly to C (pin 18) for the minimum OFF timer delay (maximum oscillator frequency).
- 20. FRef:** This is the 160 Hz reference oscillator input. It is connected externally through a 330K Ω resistor to Vcc and a 0.022 μ F capacitor to Gnd. Other values of resistance and capacitance can be chosen, provided this input oscillates at 160Hz. This frequency is used to drive the internal switched capacitor bandpass filter and the timing delays.

Electrical Specifications

Below are the specifications at room temperature (25 $^{\circ}$ C).

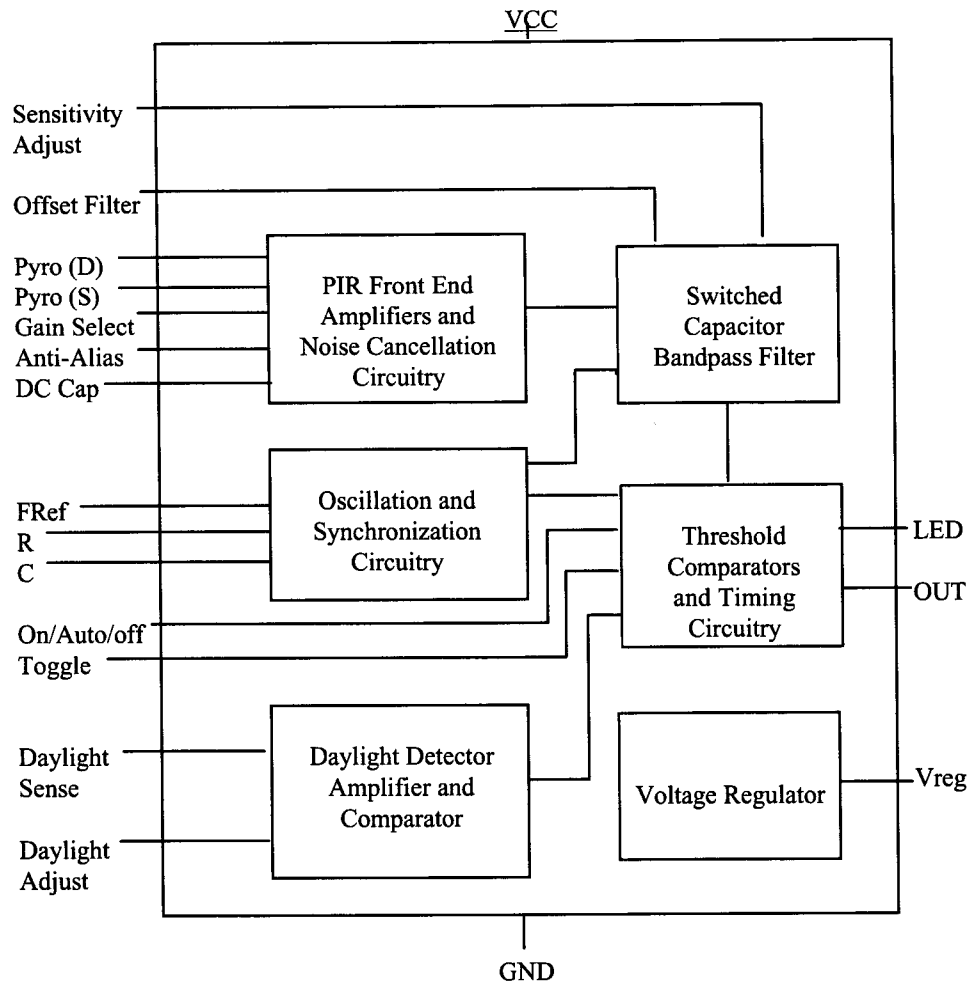
Parameter	Min.	Typ.	Max.	Unit
Vcc	4	5	15	V
Icc		300		μ A
Input Voltage on any Pins	Gnd - 0.5		Vcc + 0.5	V
PIR Power Supply Rejection Ratio	74			dB
PIR Input Gain	62		68	dB
Overall gain variation			5	%
Overall threshold variation			7	%
Daylight Adjust (pin 11) Pull-down Current		5		μ A
Gain Select (pin 13) Pull-up Current		5		μ A
ON/AUTO/OFF (pin 14) Pull-up Current		10		μ A
ON/AUTO/OFF (pin 14) Pull-Down Current		10		μ A
Toggle (pin 15) Pull-up Current		5		μ A
Pyro (D) (pin 7) Reference Voltage	2.3	2.5	2.7	V
OUT (pin 16) Output Impedance			35	Ω
LED (pin 17) Output Impedance	375	500	625	Ω
R (pin 19) Output Impedance	30	40	50	K Ω
Operating Temperature	-25		+100	$^{\circ}$ C
Storage Temperature	-55		+125	$^{\circ}$ C

Application Notes:

- Normally, Gain Select (pin 13) is unconnected, providing a PIR gain of 68 db. For reduced sensitivity, Gain Select is connected to Gnd, providing a gain of 62 db.
- Auto-ON mode can be disabled by connecting both Daylight Sense (pin 12) and Daylight Adjust (pin 11) to Vcc.
- Auto-OFF mode can be disabled by connecting C (pin 18) to Gnd or Vcc.
- Daylight detector can be disabled by connecting Daylight Sense (pin 12) to Vcc.
- With a 5 M Ω Daylight adjust pot, the daylight sensitivity can be adjusted from complete darkness (always on) to complete daylight (always off). Additional fixed resistors and possibly a smaller pot can be used to restrict the range for specific applications.
- The OFF timer range can be set by selecting a pot and capacitor and possibly additional fixed resistors that will produce the minimum and maximum time delays at the extremes of the pot.

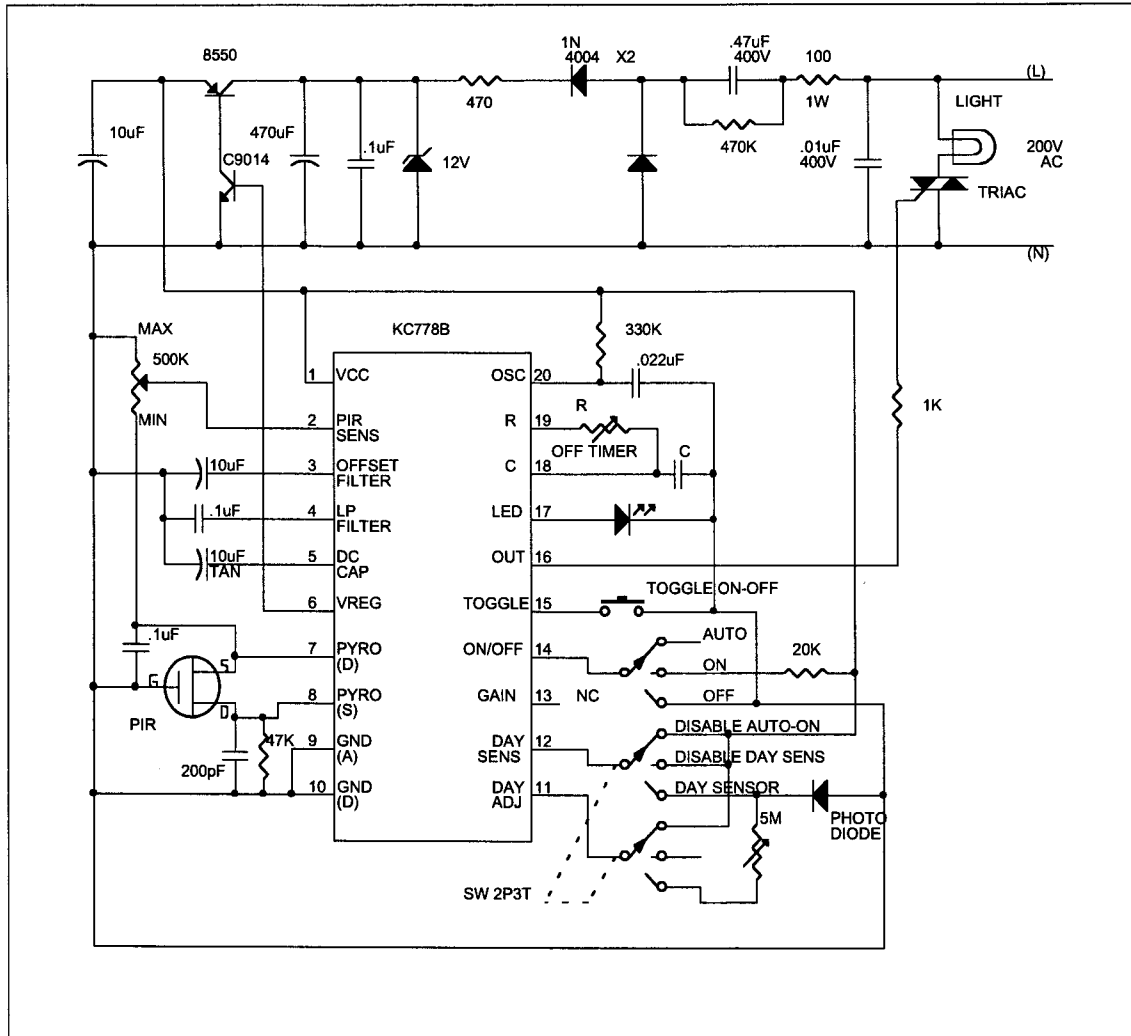
7. OFF timer delay = $5678 \times (R+40,000) \times C$ seconds, R is in Ohms, C is in Farads.
8. The Sensitivity Adjust pot is used to select a voltage between the pyro drain reference voltage (minimum sensitivity) and Gnd (maximum sensitivity). The value of the pot is not critical and any value between 100 K Ω and 5 M Ω can be used.
9. The output of the switched capacitor bandpass filter can be seen on pin 3 (Offset Filter) when the external capacitor(10 μ F) is disconnected. The filter response can be measured in this way. (Disconnecting the external capacitor prevents motion from being detected.)
10. Pin 8 (Pyro (S)) is a **sensitive** node and the external interconnect to this pin should be made as short as possible. This node should also be closely surrounded by a ground plane.

Block Diagram



1. Typical Hook-up

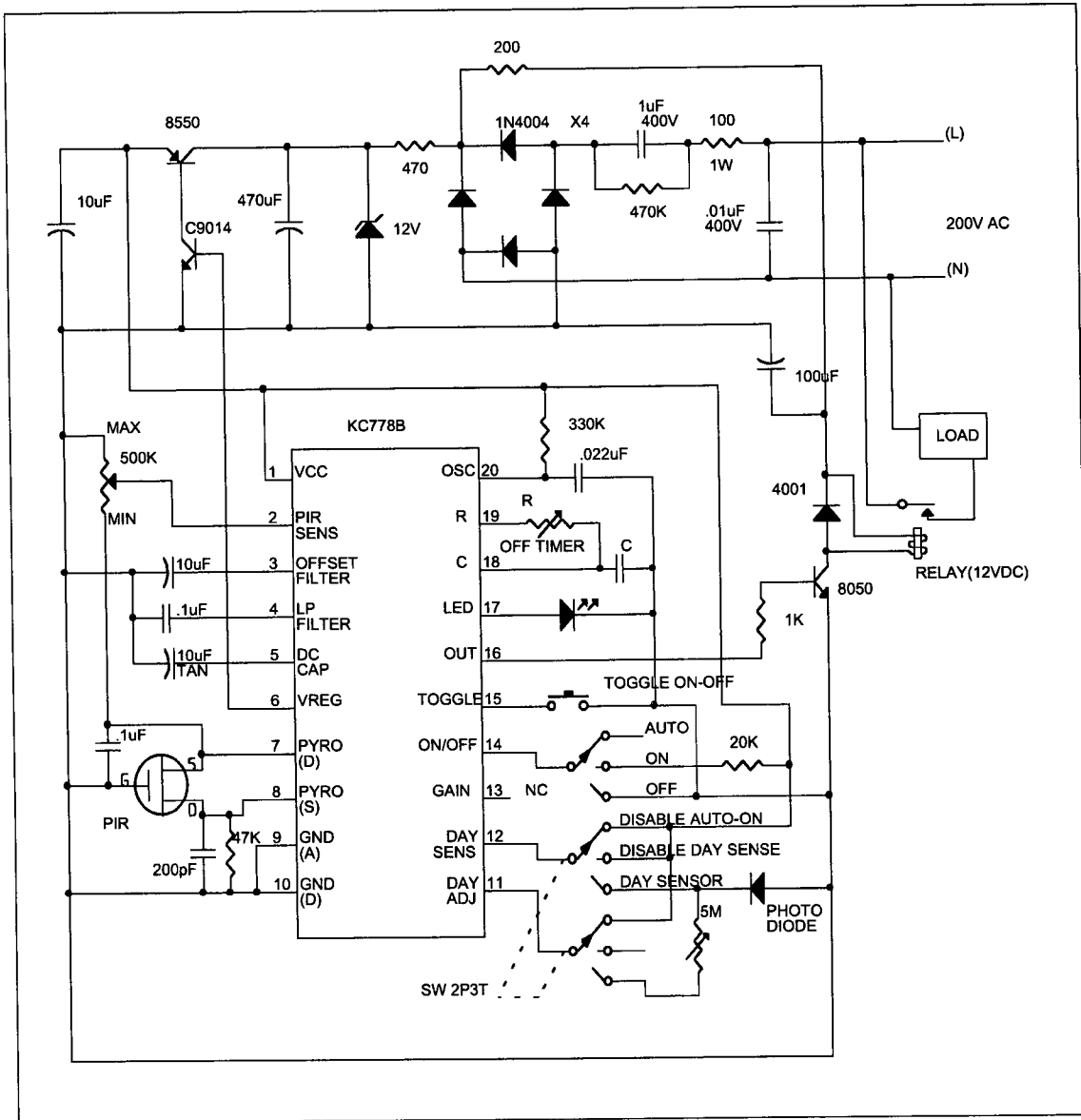
Below is a typical hook up for connecting KC778B to a PIR sensor, a TRIAC light switch and a silicon photodiode daylight detector. VReg is used for voltage regulation. 2 slide switches are used. One for select ON/AUTO/OFF and the other one used for enable, disable the daylight sensor and disable auto-on function. A simple AC regulation circuit is used in this system such that only a small gate current TRIAC can be used.



Note : Off Time Delay = $5678 \times (R+40,000) \times C$ Second
 R in Ohm, C in Farad

2. Hook-up with with relay

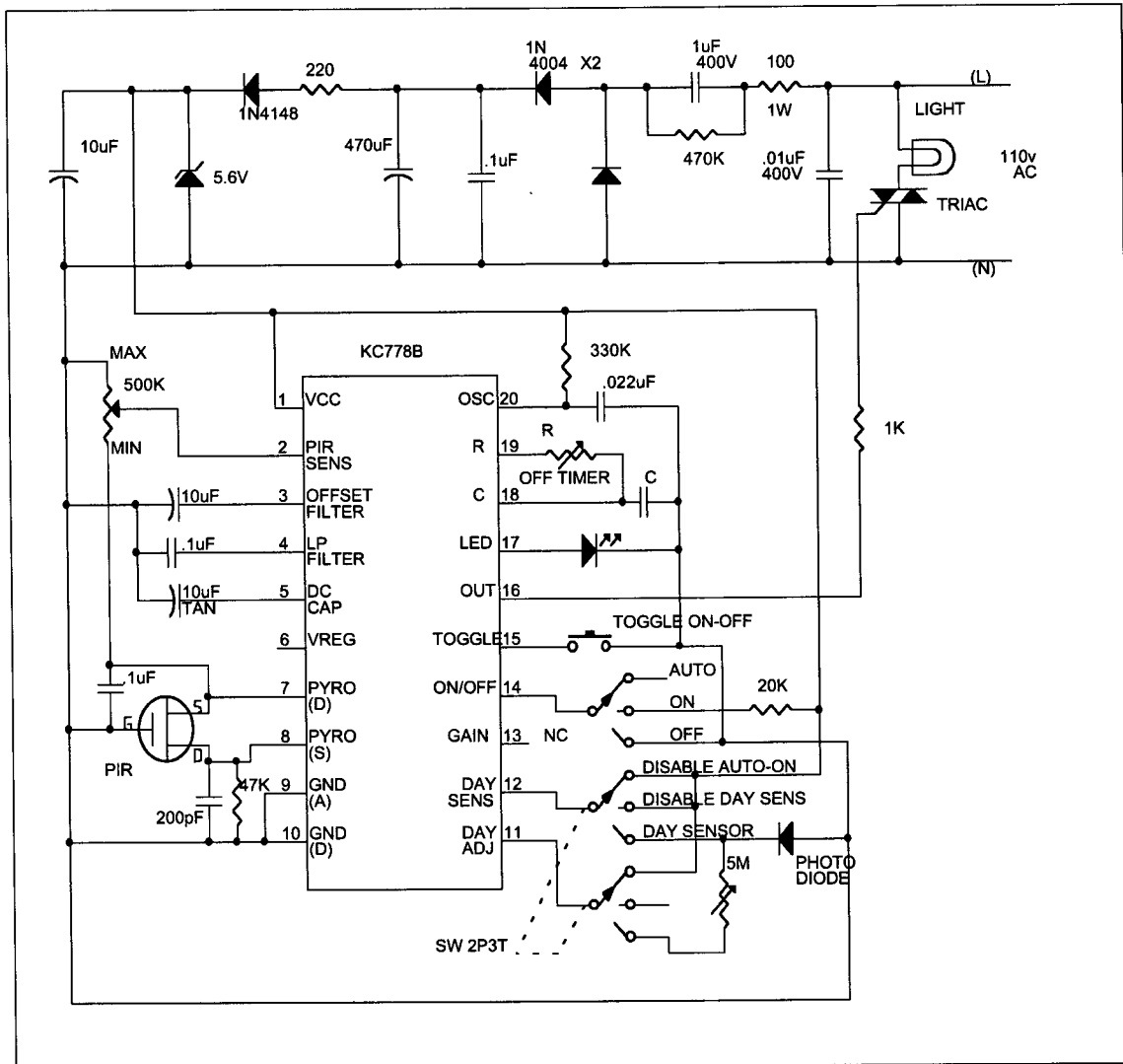
The following is similar to the typical hook-up. Due to the higher current require by relay, the bridge regulation method is used in AC circuit. This application is suitable to a high current loading such as heater, flood light, motor and etc.



Note : Off Time Delay = $5678 \times (R+40,000) \times C$ Second
 R in Ohm, C in Farad

3. Hook-up with minimum regulator

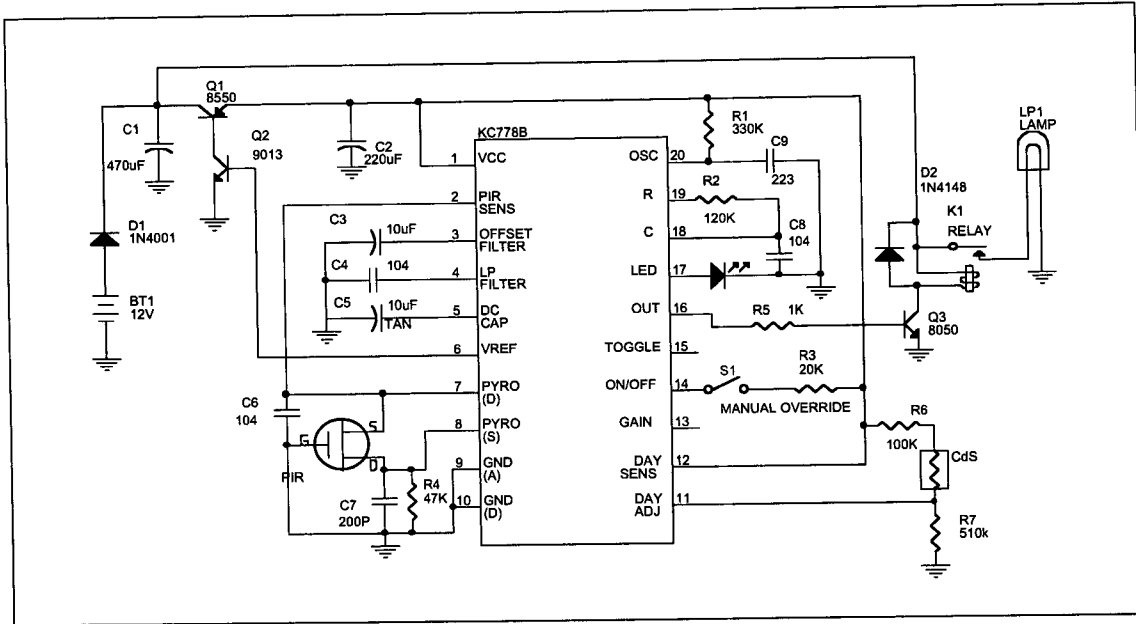
Below is an example of 110V application. Only one stages of regulator is used in the system by use of zener diode



Note : Off Time Delay = $5678 \times (R+40,000) \times C$ Second
 R in Ohm, C in Farad

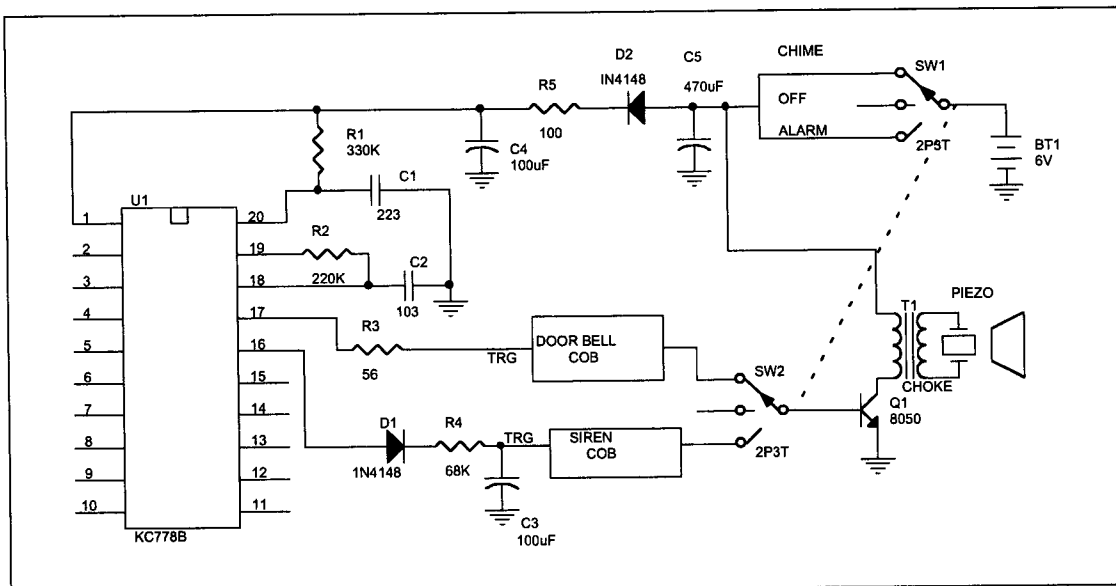
4. Hook-up with 12VDC system

Below is an example of Auto camp light which uses an auto battery (12VDC). Internal voltage regulator is used, it needs 12V to start up but can work down to 7V.



5. Hook-up with Door Chime and Alarm circuit

A 2P3T slide switch is used in the system. When it is positioned at Chime, the LED output of KC778B will trigger the door bell COB at anytime. If the switch is positioned at OFF, power will be cut off. When switch to Alarm position, after 25sec delay, the KC778B start working. It outputs a high signal when motion is detected. This signal will charge up the cap such that the siren COB will be triggered after the charge up delay time. It forms a very simple alarm product.



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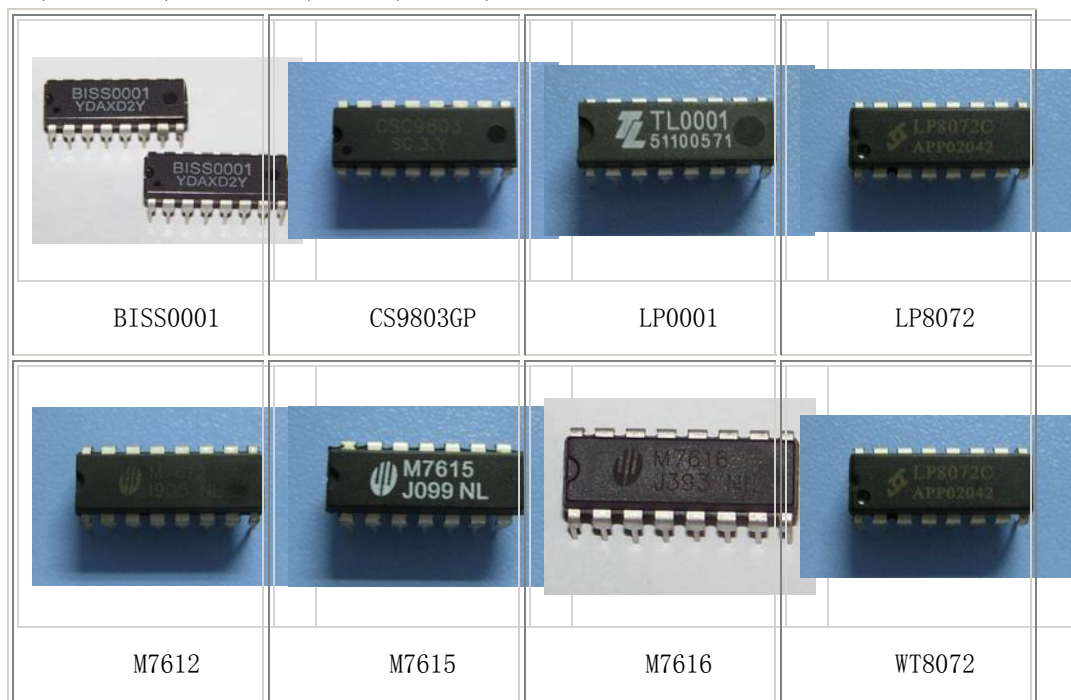
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SUNSTAR 精工制造系列红外感应、防盗报警、自动控制、 安防消防器件

热释电红外传感器 IC 是由运算放大器、电压比较器和状态控制器、延时时间定时器、封锁时间定时器、及参考电压源等构成的数模混合专用集成电路。有贴片的，也有直插的。

BISS0001,CSC9803,CS9803GP,M7615,M7616,M7612 等各种型号



热释红外传感信号处理集成电路 BISS0001

产品介绍： BISS0001 是我公司自主设计地红外传感信号处理器专用集成电路，它配以热释电红外传感器和少量外元器件可以构成被动式红外开关。它能自动快速开启各类白炽灯、荧光灯、蜂鸣器、自动门、电风扇、烘干机和自动洗手池等装置。是一种高技术产品。已经广泛用于企业，宾馆、商场、库房及家庭的过道、走廊等敏感区域，或用于安全区域的自动灯光、照明和报警系统。

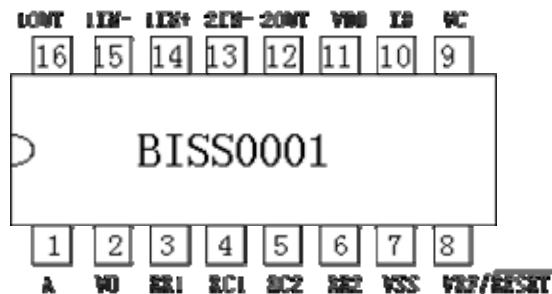


性能特点：

- ◆ CMOS 数模混合专用集成电路。
- ◆ 具有独立的高输入阻抗运算放大器，可与多种传感器匹配，进行信号与处理。

- ◆ 双向鉴幅器，可有效抑制干扰。
- ◆ 内设延迟时间定时器和封锁时间定时器，结构新颖，稳定可靠，调解范围宽。
- ◆ 内置参考电压。
- ◆ 工作电压范围+3V—+5V。
- ◆ 采用 16 脚 DIP 和 SOP 封装。

外引脚图：



红外传感信号处理集成电路 BISS0002

产品介绍： BISS0002 是由我公司开发的红外传感信号处理集成电路。相对 BISS0001，BISS0002 自带了稳压电路、抗干扰性更好。



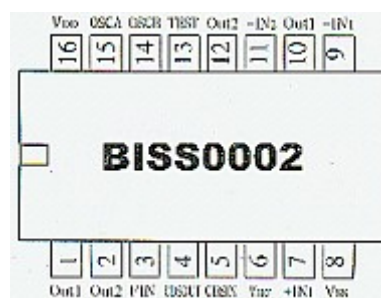
工艺特点：

- ◆ COMS 数据混合型专用集成电路。
- ◆ 具有独立的低功耗、高输入阻抗运算放大器，可与多种传感器匹配，进行信号处理。

- ◆双向鉴幅器，可有效抑制干扰。
- ◆内置稳压电源，可供外部传感器使用。
- ◆可驱动可控硅或继电器工作。
- ◆直流或交流工作模式并自动鉴别 50HZ 或 60HZ，切换同步脉冲。
- ◆交流工作模式可控硅输出，可选弱点灯或强点灯，具有调光输出功能。
- ◆电源 ON 后，可确保 0.5 秒内无输出。
- ◆具有 180 秒测试工作模式及可重复触发或不可重复触发工作模式。
- ◆外接零件少，抗噪声能力强。
- ◆采用 16 脚 DIP 或 SOP 封装。

外引脚图：

（红外传感信号处理集成电路采用标准 DIP16 和 SOP16 两种封装形式，客户可以根据使用情况选择）



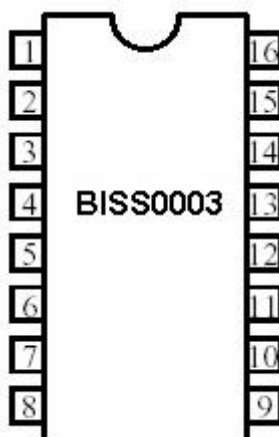
热释红外传感信号配套集成电路 BISS0003

产品介绍： BISS0003 是为热释电红外传感器配套设计的专用集成电路，采用 CMOS 工艺制造。其外围器件大大减少，节约了空间和成本及调试时间，提高整机可靠性，可广泛应用于照明控制、马达和电磁阀控制，防盗报警等领域。

性能特点:

- 工作电压为 4.0V~5.5V (DC), 工作电流小于 1mA。
- 外接振荡电阻、电容。
- 外接有硫化镉 (CDS) 传感器, 白天抑制输出。
- 输出可驱动继电器或可控硅。
- 内置两级运放, 增益可调。
- 控制时间可调。
- 内置稳压输出 3.1V 直接驱动 PIR。
- 集成过零检测, 交流电流同步触发, 降低电源污染。
- 与 WELTREND 公司 WT8072 兼容。
- DIP16 封装。

外引脚图:



引脚说明

序号	符号	功能描述	序号	符号	功能描述
1	UOU1	运放输出 1	9	CDS	CDS 检测
2	NII1	运放正输入 1	10	TRIAC	TRIAC 输出
3	III1	运放负输入 1	11	RELAY	RELAY 输出
4	VREF	参考电压	12	ZCD	过零检测

5	GND	地	13	VDD	电源
6	TB	系统时钟	14	II2	运放负输入 2
7	QTEST	测试	15	NII2	运放正输入 2
8	TCI	定时时钟	16	UOU2	运放输入 2

SUNSTAR 精工制造系列红外感应、防盗报警、自动控制、安防消防器件

热释电红外传感器主要是由一种高热电系数的材料，如锆钛酸铅系陶瓷、钽酸锂、硫酸三甘钛等制成尺寸为 2*1mm 的探测元件。在每个探测器内装入一个或两个探测元件，并将两个探测元件以反极性串联，以抑制由于自身温度升高而产生的干扰。由探测元件将探测并接收到的红外辐射转变成微弱的电压信号，经装在探头内的场效应管放大后向外输出。为了提高探测器的探测灵敏度以增大探测距离，一般在探测器的前方装设一个菲涅尔透镜，该透镜用透明塑料制成，将透镜的上、下两部分各分成若干等份，制成一种具有特殊光学系统的透镜，它和放大电路相配合，可将信号放大 70 分贝以上，这样就可以测出 10~20 米范围内人的行动。品种全、型号多，可供选择的余地大。应用于人体感应开关、报警器等自动开关领域。

			
KP500B	KP506B	RE200B	D203S
			
D203B	LHI968	LHI778	D204S
•  •			
LHI878			

光敏电阻器（**photovaristor**）又叫光敏电阻，是利用半导体的光电效应制成的一种电阻值随入射光的强弱而改变的电阻器；入射光强，电阻减小，入射光弱，电阻增大。光敏电阻器一般用于光的测量、光的控制和光电转换（将光的变化转换为电的变化）。

通常，光敏电阻器都制成薄片结构，以便吸收更多的光能。当它受到光的照射时，半导体片（光敏层）内就激发出电子—空穴对，参与导电，使电路中电流增强。

本公司光敏电阻性能稳定，一致性好，光谱特性好、型号齐全，广泛应用于验钞机、监控摄像机、背景调光、开关电路、玩具等。

			
光敏电阻	光敏电阻 3MM	光敏电阻 4MM	光敏电阻 5MM
			
光敏电阻 7MM	光敏电阻 12MM	光敏电阻 20MM	金属壳光敏电阻 1
			
金属壳光敏电阻 2	塑料壳光敏电阻		

光敏传感器是具有光敏特性的PN结受到光辐射时，形成光电流，由此产生的光生电流由基极进入发射极，从而在集电极回路中得到一个放大了相当于 β 倍的信号电流。与光敏二极管相比，具有很大的光电流放大作用，即很高的灵敏度。具备了光敏电阻的特性，在开关电路中可以代替光敏电阻，最大的优点就是环保、一致性好。

型号: 8709SM
 焦距: 24.5
 角度: 97.6°
 距离: 10m
 尺寸: 23*46.5



型号: 9002
 焦距: 12
 角度: 116°
 距离: 7m
 尺寸: 24*16.7



型号: 8307-4
 焦距: 12
 角度: 90°
 距离: 6m
 尺寸: 外径 17 内径 15



型号: NL-01
 焦距: 10.05
 角度: 100°
 距离: 10m
 尺寸: Φ24 高度 14



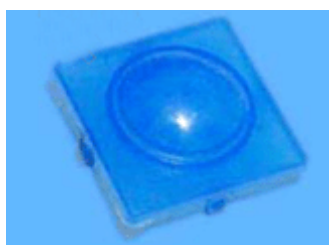
型号: NL-02
 焦距: 10.05
 角度: 100°
 距离: 10m
 尺寸: Φ23.5 高度 14.70



型号: 8403-3
 焦距: 20
 角度: 180°
 距离: 6m
 尺寸: 29*19



型号: 8360
 直径: 20mm
 焦距: 36mm
 厚度: 0.7mm
 距离比: 12:1
 材料: HDPE
 感应距离: 10m



型号: 8280
 直径: 20mm
 焦距: 28mm
 厚度: 0.7mm
 距离比: 8:1
 材料: HDPE
 感应距离: 10m



型号: 8222
 直径: 22mm
 焦距: 20mm
 厚度: 0.6mm
 距离比: 6:1
 材料: HDPE
 感应距离: 10m



型号: 8109
 直径: 24mm
 焦距: 9mm
 厚度: 0.7mm



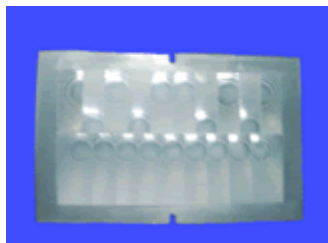
型号: 0512H
 直径: 60*52mm
 焦距: 31mm
 厚度: 0.7mm



型号: 8605-3
 外径: 45mm 内径: 32.5mm
 焦距: 15mm
 厚度: 0.7mm



角度: 100°
感应距离: 10m



型号: 7805
焦距: 22
角度: 125°
距离: 12m
尺寸: 35.6*56.6

角度: 垂直 120° 水平 60°
感应距离: 12m

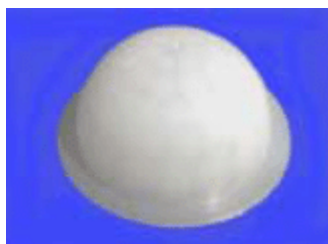


型号: 8204-1(窄角度远距离透镜)
焦距: 25
角度: 10°
距离: 40m
尺寸: 44*56.2

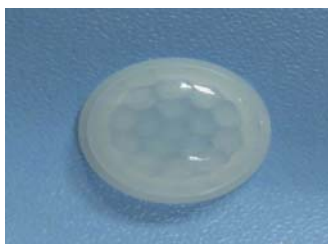
角度: 360°
感应距离: 5m



型号: 8204-3(窄角度远距离透镜)
焦距: 25
角度: 10°
距离: 40m
尺寸: 64*52



型号: 003
焦距: 13.50
角度: 180°
距离: 10m
尺寸: 外径 43 内径 35.2



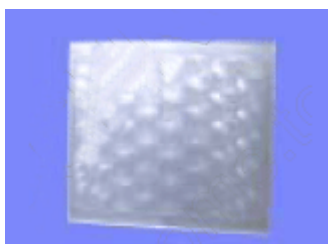
型号: 8016
焦距: 6
角度: 120°
距离: 5m
尺寸: Φ 16 高度 6.00



型号: M650
焦距: 30
角度: 120°
距离: 12m
尺寸: 46*20



型号: 8308-2(圆柱形)
焦距: 9.5
角度: 140°
距离: 8m
尺寸: Φ 12.5 高度 14.30



型号: 8403-2
焦距: 20
角度: 100°
距离: 10m
尺寸: 26.5*23.8 厚度: 0.7



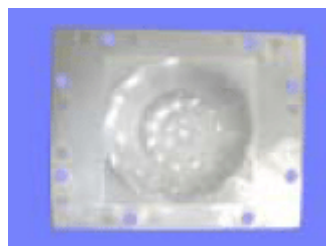
型号: M651
焦距: 12
角度: 120°
距离: 12m
尺寸: 43.2*19.7



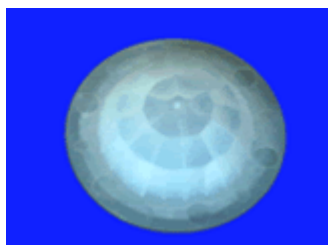
型号: 7810
焦距: 21.1
角度: 152°
距离: 12m
尺寸: 57*33



型号: 7706-1
焦距: 30
角度: 114°
距离: 28m
尺寸: 60*50



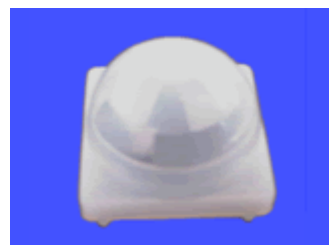
型号: 8102-1
焦距: 15
角度: 120°
距离: 7m
尺寸: 64*52



型号: 8603-4
焦距: 17.50
角度: 360°
距离: 5m
尺寸: $\Phi 45.6$



型号: 8603-5
焦距: 12
角度: 116°
距离: 5m
尺寸: $\Phi 35$



型号: 8002-2
焦距: 12
角度: 100°
距离: 5m
尺寸: $\Phi 23$



型号: 8200(平板形)
焦距: 20
角度: 120°
距离: 10m
尺寸: $\Phi 20$ 厚度:0.6



型号: 8208(平板形)
焦距: 8
角度: 120°
距离: 10m
尺寸: $\Phi 12$ 厚度:0.6



型号: 8310
焦距: 10.5
角度: 100°
距离: 10m
尺寸: $\Phi 23$ 厚度:0.5



型号: 2814
焦距: 10.5
角度: 140°
距离: 6m
尺寸: $\Phi 28$ 厚度:0.6



型号: 8201-9
焦距: 20
角度: 180°
距离: 10m
尺寸: $\Phi 20$ 厚度:0.6



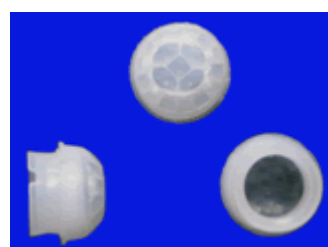
型号: 8140
焦距: 8
角度: 140°
距离: 6m
尺寸: $\Phi 8$ 厚度:0.6



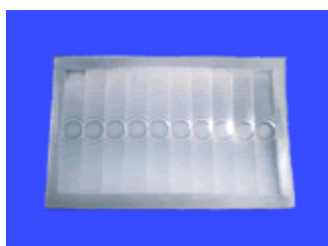
型号: ML002(幕帘式透镜)
焦距: 30
角度: 幕帘
距离: 10m
规格: 34*55.5



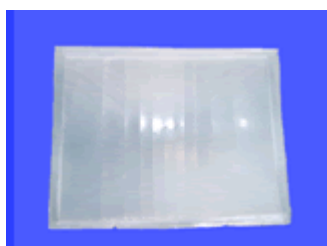
型号: HL001
焦距:
角度:
距离:
规格: 71.5*38.5



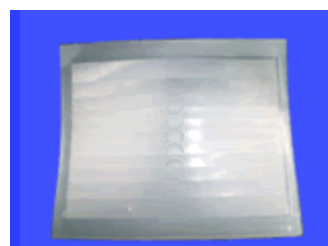
型号: 8120
焦距: 6
角度: 120°
距离: 8m
尺寸: $\Phi 12.7$ 厚度:0.6



型号: 8719
焦距: 25
角度: 90°
距离: 10m
尺寸: 53.5×34



型号: 8203-1
焦距: 25
角度: 110°
距离: 12m
尺寸: 56×44



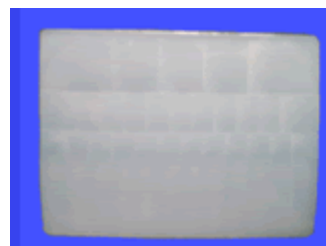
型号: 7809
焦距: 25
角度: 90°
距离: 12m
尺寸: 49×57



型号: 7708-1
焦距: 29.7
角度: 79.8°
距离: 10m
尺寸: 56.82×44.8



型号: 7706
焦距: 30
角度: 79.8°
距离: 28m
尺寸: 49×69.20



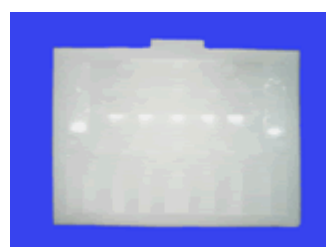
型号: 7706-3
焦距: 30
角度: 114°
距离: 28m
尺寸: 69.2×37.4



型号: 7704
焦距: 23.00
角度: 103°
距离: 12m
尺寸: 46.2×61.5



型号: 7805
焦距: 22
角度: 125°
距离: 12m
尺寸: 36×57



型号: 7708-10
焦距: 23
角度: 120°
距离: 16m
规格: 66.5*49.7



型号: 7803-1
焦距: 20
角度: 89°
距离: 7m
尺寸: 40×22.8



型号: 7708-3
焦距: 29.7
角度: 79.8°
距离: 10m
尺寸: 58×45



型号: 8745-2B
焦距: 22
角度: 110°
距离: 12m
规格: 57×25

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