

● 產品說明(General Description)

CDT5536 為 PIR 偵測器，需搭配焦電式紅外線感測元件使用。CDT5536 使用主動式帶通濾波器以及除彈跳電路以防止雜訊對 PIR 信號的干擾。當有效的 PIR 信號輸入後 Relay 被啟動，經過一段延遲時間後關閉，此延遲時間可由 TCI 上的外接電阻作調整。CDT5536 具有光線感測功能，可設定只有在夜間才能啟動 Relay 輸出。

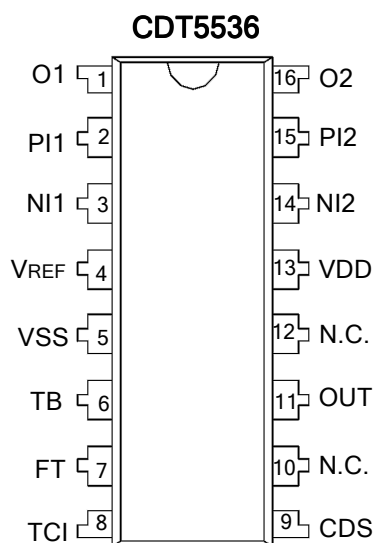
● 產品特性(Features)

- 低功率損耗
- 內建具溫度補償之參考電源
- Relay 開啟時間可調整
- 抗雜訊能力強
- 暖機時間 20 秒
- 16 Pin SOP 及 DIP 封裝
- 操作電壓 2.5~5V

● 產品應用(Applications)

- 自動照明設備
- 動態偵測系統
- 保全系統

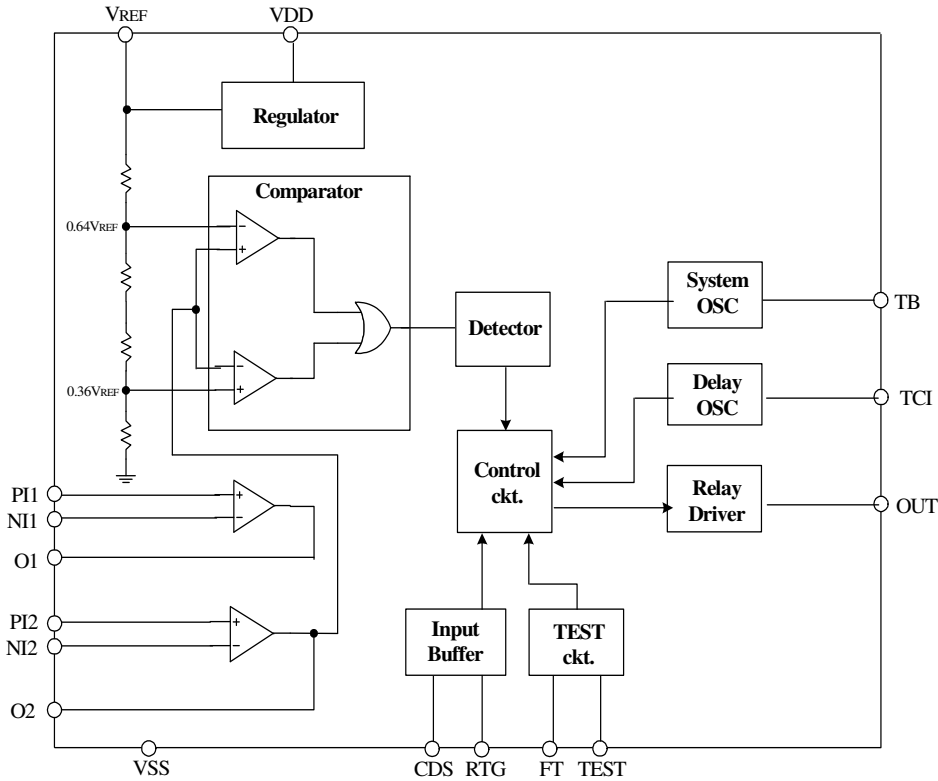
● 腳位圖(Pin Assignment)



● 腳位說明(Pin Description)

Pin No.	Pin_Name	I/O	功能描述
1	O1	O	OP1 輸出端
2	PI1	I	OP1 非反相端
3	NI1	I	OP1 反相端
4	VREF	O	帶差參考電壓源輸出
5	VSS	P	電源負端
6	TB	I	系統振盪頻率調整
7	FT	I	開機快速測試
8	TCI	I	輸出延遲時間調整端
9	CDS	I	外接 CDS 元件用
10	N.C.		
11	OUT	O	Relay 輸出控制
12	N.C.		
13	VDD	P	電源正端
14	NI2	I	OP2 反相端
15	PI2	I	OP2 非反相端
16	O2	I	OP2 輸出端

● 方塊圖(Block Diagram)



● 最大額定範圍(Absolute Maximum Ratings)

- Supply Voltage ----- -0.3V to 7.0V
- Input Voltage ----- $V_{SS}-0.3$ to $V_{DD}+0.3$
- Operating Temperature ----- -20°C to 70°C
- Storage Temperature----- -50°C to 125°C

* Note : Stresses above those listed may cause permanent damage to the devices.

● Op Amp 特性(Characteristics of Operational Amplifier)

($V_{DD}=5V$)

ITEM.	Min.	Typ.	Max.	Units
Input bias current			10	nA
Input offset current			10	nA
Input offset voltage			5	mV
Output swing voltage			0.8 V_{DD}	
Low frequency open loop gain	100			dB
Common mode rejection ratio	70			dB
Power Supply rejection ratio	80			dB
3dB frequency			100	KHz

● 電氣特性(Electrical Characteristics)

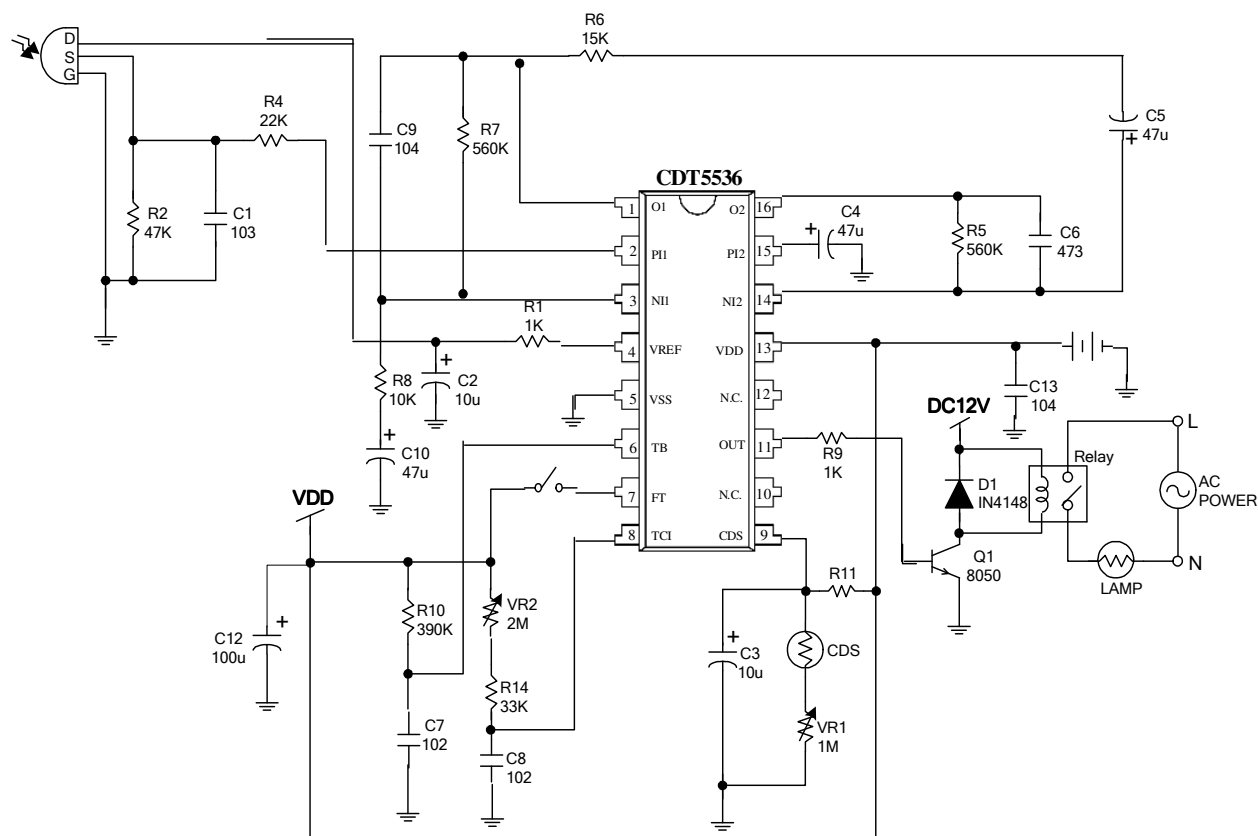
($V_{DD}=3V$, $T_A = 25^{\circ}C$, unless otherwise specified)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
V_{DD}	Supply voltage		2.2		5.5	V
V_{REF}	Regulated voltage	$V_{DD} > 2.5V$ (#1)	2.2	2.4	2.6	V
I_{STB}	Standby Current	$V_{DD} = 3V$, OSC OFF		20	30	μA
I_{DD}	Operating Current	No load, OSC ON		200		μA
I_{OL}	Sink current (OUT)	$V_{DD} = 3V$, $V_{OL} = 1V$			12	mA
I_{OH}	Source current (OUT)	$V_{DD} = 3V$, $V_{OH} = 2V$			8	mA
F_{TB}	Time base frequency	No connection		4		KHz
F_{TCI}	Delay time frequency	$R_{TCI} = 390K$, $C = 1nF$		4		KHz
V_{IH1}	CDS input high voltage (CDS)	$V_{DD} = 3V$	1.4	1.7	2.1	V
V_{IL1}	CDS input low voltage (CDS)	$V_{DD} = 3V$	0.7	0.9	1.1	V
V_{IH2}	W.C. input high voltage (W.C.) (#2)			0.64 V_{REF}		V
V_{IL2}	W.C. input low voltage (W.C.)			0.36 V_{REF}		V

#1 When $V_{DD} < 2.5V$, $V_{REF}=V_{DD}$

#2 W.C. : Window Comparator

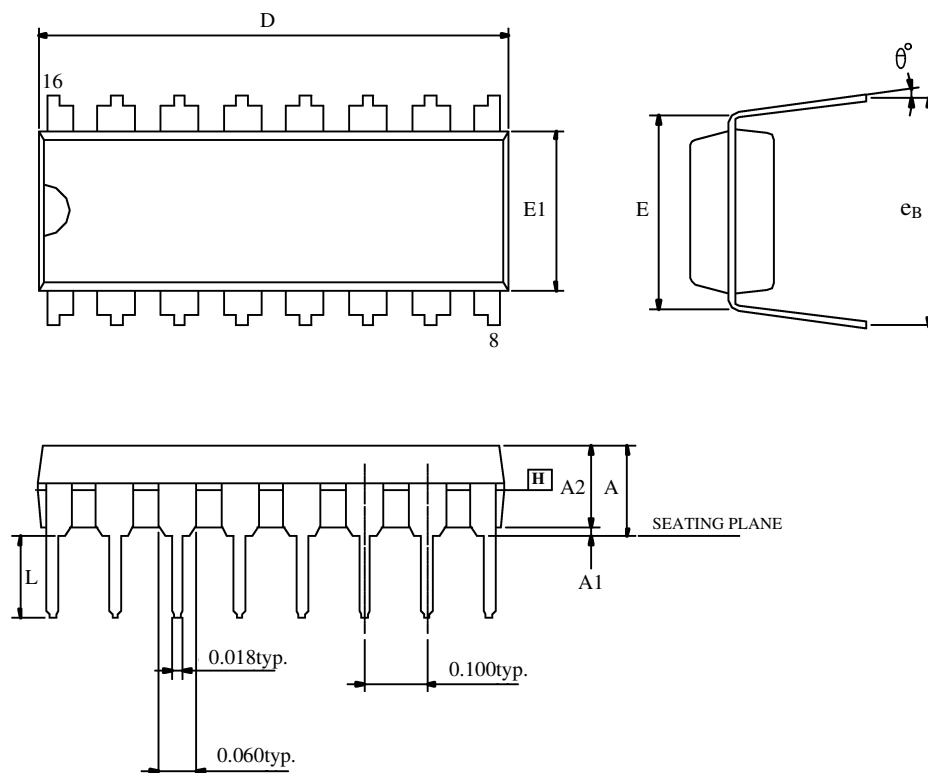
● 應用線路圖(Application Circuit)



- ※ (1). R11 電阻值須隨各家 CDS 特性不同而調整。
- (2). R5 電阻值越大偵測距離越遠，但也更容易受雜訊干擾。
- (3).PCB Layout 建議：R5,R7,C6,C9 靠近 IC 旁，R6,C5 PCB 走線縮短較為理想。

● 封装外觀圖(Package Information)

• 16-Pin DIP outline dimensions



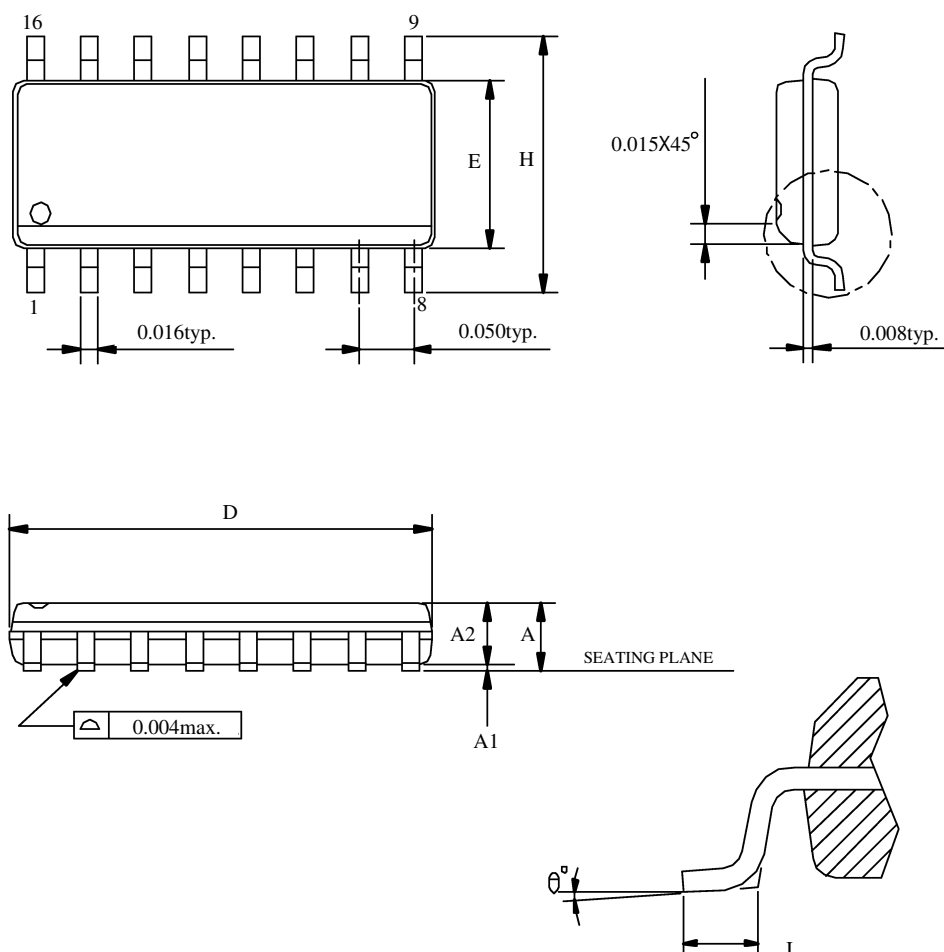
Symbols	MIN.	NOR.	MAX.
A	—	—	0.210
A1	0.015	—	—
A2	0.125	0.130	0.135
D	0.735	0.755	0.775
E	0.300 BSC.		
E1	0.245	0.250	0.255
L	0.115	0.130	0.150
e_B	0.335	0.355	0.375
θ°	0	7	15

UNIT : INCH

NOTES.

- JEDEC OUTLINE : MS-001 BB
- "D", "E1" DIMENSIONS DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS. MOLD FLASH OR PROTRUSIONS SHALL NOT EXCEED 0.010 INCH.
- e_B IS MEASURED AT THE LEAD TIPS WITH THE LEADS UNCONSTRAINED.
- POINTED OR ROUNDED LEAD TIPS ARE PREFERRED TO EASE INSERTION.
- DISTANCE BETWEEN LEADS INCLUDING DAM BAR PROTRUSIONS TO BE 0.005 INCH MINIMUM.
- DATUM PLANE $\square$ COINCIDENT WITH THE BOTTOM OF LEAD, WHERE LEAD EXIT BODY.

• 16-Pin SOP outline dimensions



Symbols	MIN.	MAX.
A	0.053	0.069
A1	0.004	0.010
D	0.386	0.394
E	0.150	0.157
H	0.228	0.244
L	0.016	0.050
θ^0	0	8

UNIT: INCH

NOTES.

- JEDEC OUTLINE : MS-012 AC
- DIMENSIONS "D" DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH, PROTRUSIONS AND GATE BURRS SHALL NOT EXCEED 0.15mm (0.006in) PER SIDE.
- DIMENSIONS "E" DOES NOT INCLUDE INTER-LEAD FLASH, OR PROTRUSIONS. INTER-LEAD FLASH AND PROTRUSIONS SHALL NOT EXCEED 0.25mm (0.010in) PER SIDE.