

● 產品說明(General Description)

CDT5001 為 PIR 偵測器，需搭配焦電式紅外線感測元件使用。CDT5001 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。CDT5001 具有光線感測功能，可設定只有在夜間才能啟動 Relay 輸出。

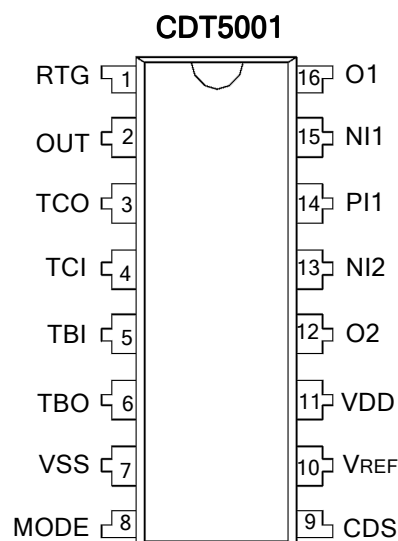
● 產品特性(Features)

- 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
- 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

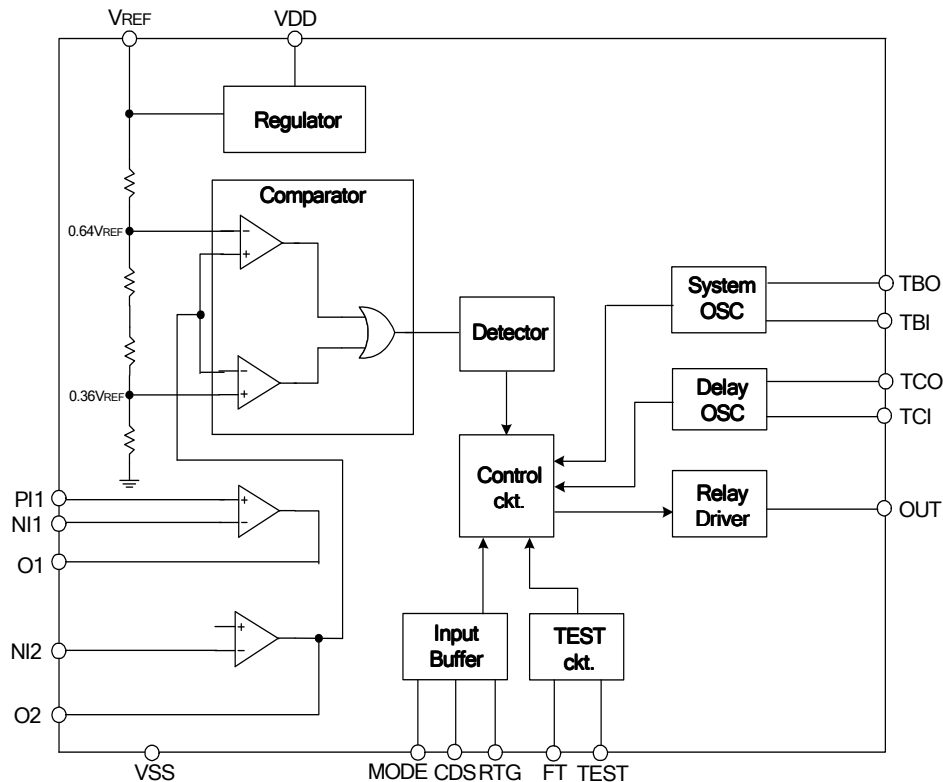
● 腳位圖(Pin Assignment)



● 腳位說明(Pin Description)

Pin No.	Pin_Name	I/O	功能描述
1	RTG	I	再觸發功能 ON/OFF 設定
2	OUT	O	Relay 輸出控制
3	TCO	O	延遲振盪頻率調整
4	TCI	I	延遲振盪頻率調整
5	TBI	I	系統振盪頻率調整
6	TBO	O	系統振盪頻率調整
7	VSS	P	電源負端
8	MODE	I	ON/OFF 模式選擇
9	CDS	I	外接 CDS 元件用
10	VREF	O	帶差參考電壓源輸出
11	VDD	P	電源正端
12	O2	I	OP2 輸出端
13	NI2	I	OP2 反相端
14	PI1	I	OP1 非反相端
15	NI1	I	OP1 反相端
16	O1	O	OP1 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)

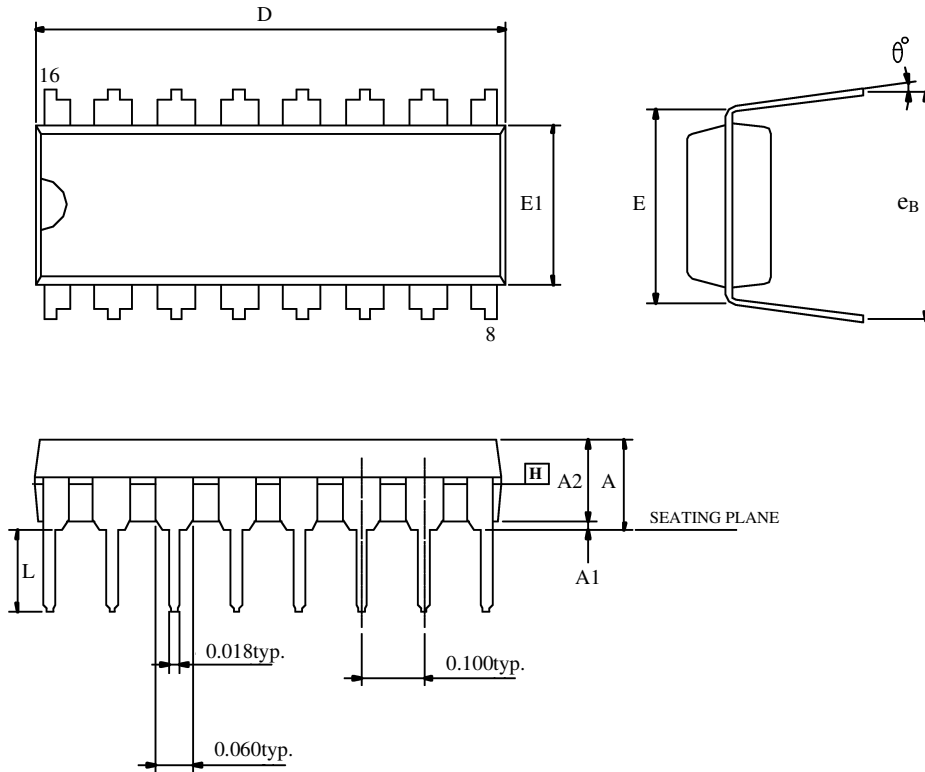
Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
V_{DD}	Supply voltage		2.2		5.5	V
V_{REF}	Regulated voltage	$V_{DD} > 2.5V$ (#1)	2.2	2.4	2.6	V
I_{STB}	Standby Current	$V_{DD} = 3V$, OSC OFF		20	30	μA
I_{DD}	Operating Current	No load, OSC ON		200		μA
I_{OL}	Sink current (OUT)	$V_{DD} = 3V$, $V_{OL} = 1V$			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

● 封装外觀圖(Package Information)

• 16-Pin DIP outline dimensions



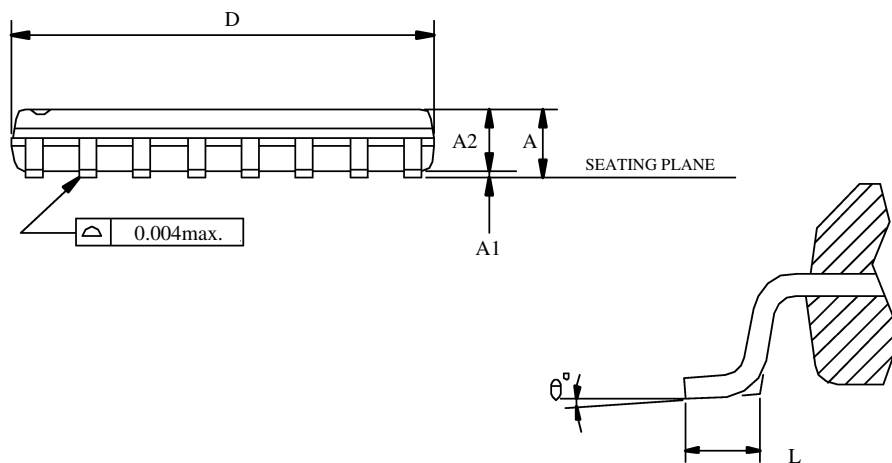
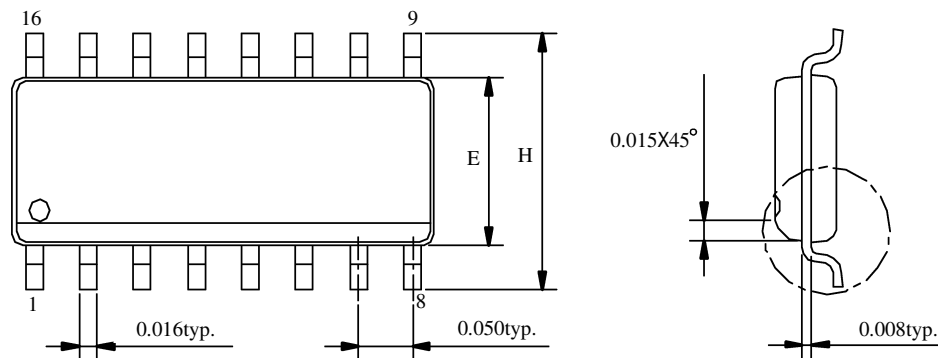
Symbols	MIN.	NOR.	MAX.
A	—	—	0.210
A1	0.015	—	—
A2	0.125	0.130	0.135
D	0.735	0.755	0.775
E	0.300 BSC.		
E1	0.245	0.250	0.255
L	0.115	0.130	0.150
e_B	0.335	0.355	0.375
θ^0	0	7	15

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.

1. JEDEC OUTLINE : MS-012 AC
2. 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.
3. DIMENSIONS "E" DOES NOT INCLUDE INTER-LEAD FLASH, OR PROTRUSIONS. INTER-LEAD FLASH AND PROTRUSIONS SHALL NOT EXCEED 0.25mm (0.010in) PER SIDE.

* CDT assumes no responsibility for the use of the specification described. CDT reserves the right to modify the product specification without notice.
 (以上規格僅供參考，本公司得逕行修正)