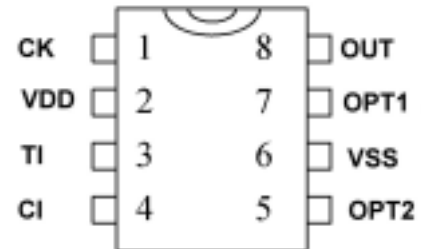




TOUCH DIMMER FOR DC LED LIGHTING

The **AP3011** is a touch detector IC for the DC LED lightings with NMOS application. The dimmer function controls by PWM output. It has high frequency for PWM output.

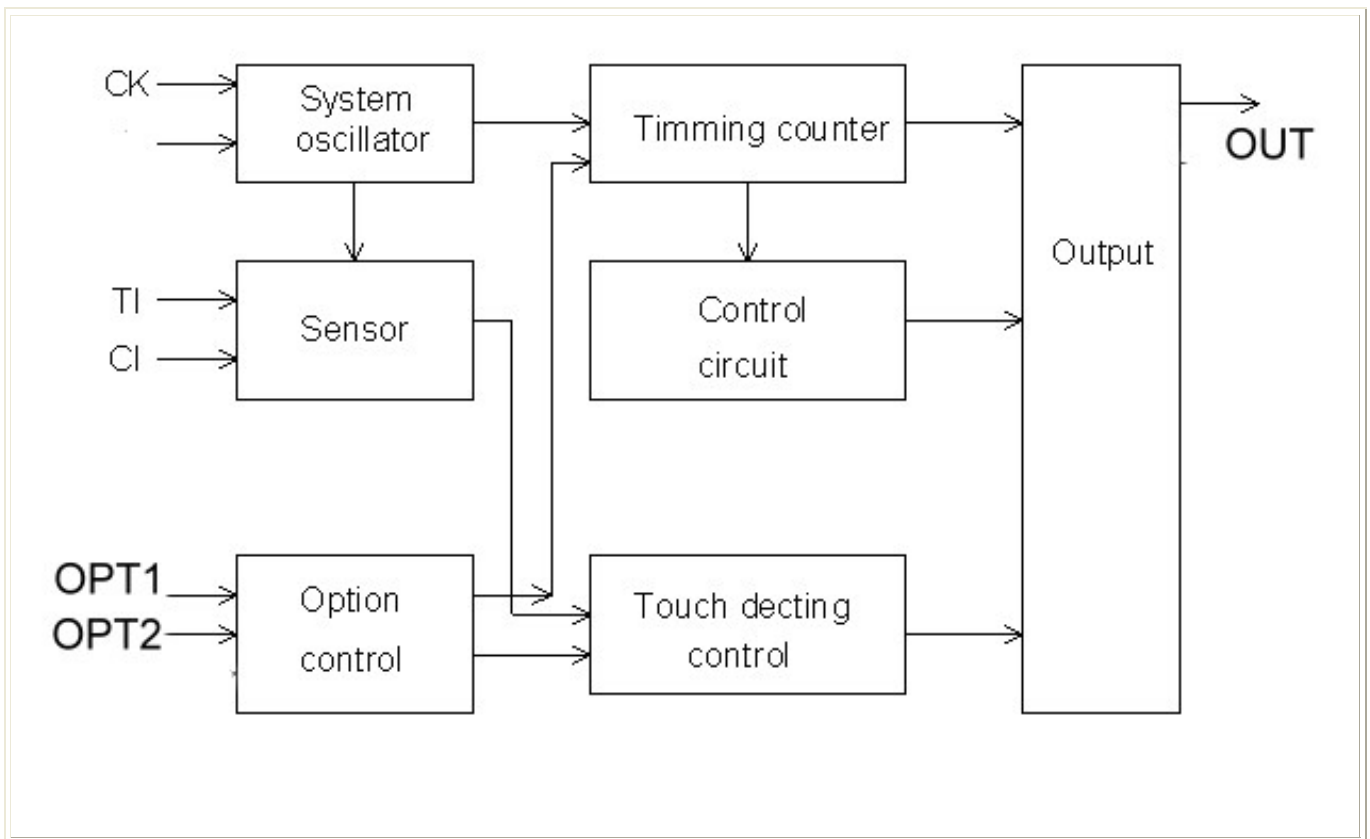


FEATURES :

- operating voltage : Operating voltage typical 5.0V
- Operating current @VDD=5.0V, 25 no load <500uA
- Higher frequency 4.8KHz PWM output.
- Support two option pin to select 4 type dimmer modes.
 - (1). 3 steps dimmer initial OFF. OPT2=0, OPT1=1
 - (2). 4 steps dimmer initial OFF. OPT2=1, OPT1=0
 - (3). 3 steps dimmer initial ON (6%). OPT2=0, OPT1=0
 - (4). toggle ON / OFF initial OFF. OPT2=1, OPT1=1
- AP3011 PWM output active high control **NMOS**.
- The application circuit is simple and easy.
- Can use long wire to connect the IC to touch plate.

APPLICATION

- LED LAMP
- For PWM control input
- For Lighting switch



PIN Description :

Pin No.	Pin Name	I/O Type	Pin Description
1	CK	I	System clock input pin
2	VDD	P	Positive power supply
3	TI	I	Touch input
4	CI	I	Sensor control input
5	OPT2	O	Mode select pull-low resistor
6	VSS	P	Negative power supply, ground
7	OPT1	I-PH	Mode select pull-high resistor
8	OUT	O	Output control pin

Note : Pin Type

I=INPUT, O=OUTPUT, OD=OPEN DRAIN, PH=PULL HIGH, PL=PULL LOW, P=POWER

Option Table List

Option pin		DESCRIPTION
OPT2	OPT1	
0	1	3 steps dimmer initial OFF
1	0	4 steps dimmer initial OFF
0	0	3 steps dimmer initial ON (Night)
1	1	OFF/ON (High)

ELECTRICAL CHARACTERISTICS



Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Operating Temperature	T _{OP}		-20 ~ +70	
Storage Temperature	T _{STG}		-50 ~ +125	
Power Supply Voltage	VDD	Ta=25°C	VSS-0.3 ~ VSS+5.5	V
Input Voltage	V _{IN}	Ta=25°C	VSS-0.3 ~ VDD+0.3	V

Note : VSS symbolizes for system ground

DC/AC Characteristics : (Test condition at room temperature=25)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Operating Voltage	VDD		4.5	5.0	6.8	V
System oscillator	F _{sys}	VDD=5.0V	-	1.3M	-	Hz
Operating Current	I _{OP}	VDD=5.0V No load Touch mode R _{CK} =100K	-	450	900	uA
Input Ports	V _{IL}	Input Low Voltage	0	-	0.2	VDD
Input Ports	V _{IH}	Input High Voltage	0.8	-	1.0	VDD
Output Port Sink Current	I _{OL}	VDD=5.0V, V _{OL} =0.5V	12	25	-	mA
Output Port Source Current	I _{OH}	VDD=5.0V, V _{OH} =VDD-0.5V	4	8	-	mA
Input Pin Pull-high Resistor	R _{PL}	VDD=5.0V Pin : OPT2		130K		Ohm
Input Pin Pull-low Resistor	R _{PH}	VDD=5.0V, OPT1		140K		ohm
		VDD=5.0V, Pin : TI		300K		

FUNCTION DESCRIPTION :

1. Touch mode select for OPT2 and OPT1

a. OPT2=0, OPT1=1 : 3 steps dimmer
OFF → Night → Medium → High → OFF....

b. OPT2=1, OPT1=0 : 4 steps dimmer

OFF → Night → Mood → Medium → High → OFF....

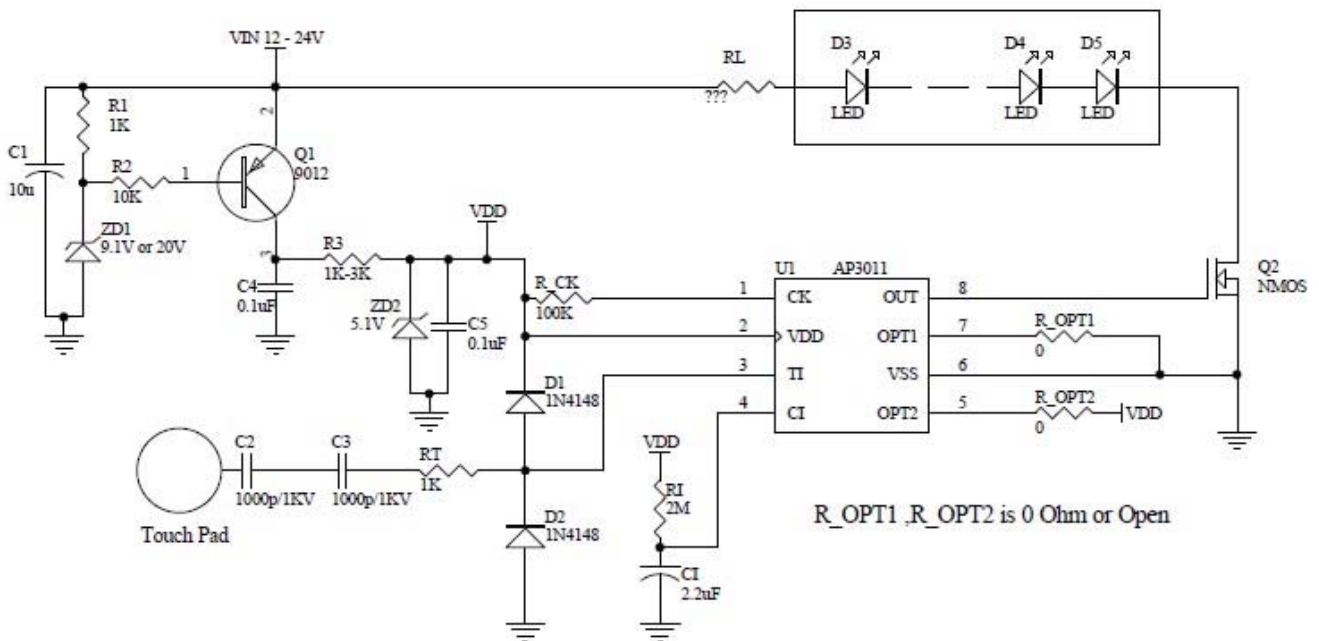
c. OPT2=0, OPT1=0 : 3 steps dimmer “initial ON”
 Night → Medium → High → OFF → Night...

d. OPT2=1, OPT1=1 : ON / OFF
 OFF → High...

2. PWM duty rate

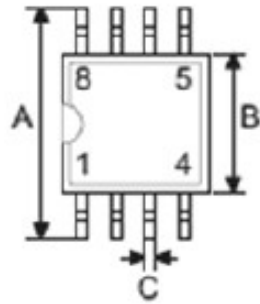
Step	PWM Duty Rate Active High
Night	6%
Mood	28%
Medium	50%(3 step) / 60%(4 setp)
High	99%

APPLICATION CIRCUIT

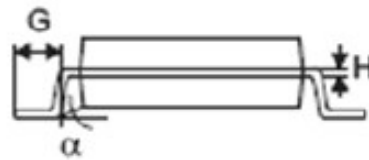
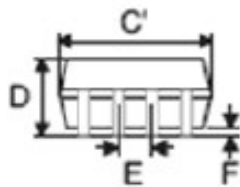




PACKAGE OUTLINE:



8 Lead Plastic small outline (SO8)-150mil



Symbol	Dimensions in mil		
	Min.	Nom.	Max.
A	228	—	244
B	150	—	157
C	12	—	20
C'	188	—	197
D	—	—	69
E	—	50	—
F	4	—	10
G	16	—	50
H	7	—	10
α	0°	—	8°