

# LAMPIRAN

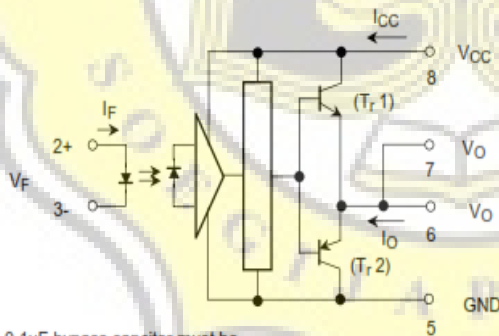
## 1. Lampiran Data Sheet IC *TLP250*

Transistor Inverter  
 Inverter For Air Conditionor  
 IGBT Gate Drive  
 Power MOS FET Gate Drive

The TOSHIBA TLP250 consists of a GaAlAs light emitting diode and a integrated photodetector.  
 This unit is 8-lead DIP package.  
 TLP250 is suitable for gate driving circuit of IGBT or power MOS FET.

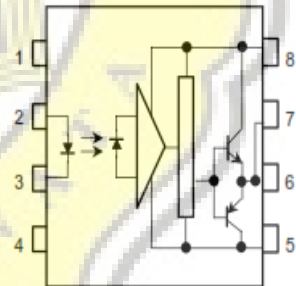
- Input threshold current:  $I_F=5\text{mA}(\text{max.})$
- Supply current ( $I_{CC}$ ):  $11\text{mA}(\text{max.})$
- Supply voltage ( $V_{CC}$ ):  $10\text{--}35\text{V}$
- Output current ( $I_O$ ):  $\pm 1.5\text{A}(\text{max.})$
- Switching time ( $t_{pLH}/t_{pHL}$ ):  $1.5\mu\text{s}(\text{max.})$
- Isolation voltage:  $2500V_{\text{rms}}(\text{min.})$
- UL recognized: UL1577, file No.E67349
- Option (D4) type

### Schematic



A 0.1 $\mu\text{F}$  bypass capacitor must be connected between pin 8 and 5 (See Note 5).

### Pin Configuration (top view)



- 1 : N.C.
- 2 : Anode
- 3 : Cathode
- 4 : N.C.
- 5 : GND
- 6 :  $V_O$  (Output)
- 7 :  $V_O$
- 8 :  $V_{CC}$

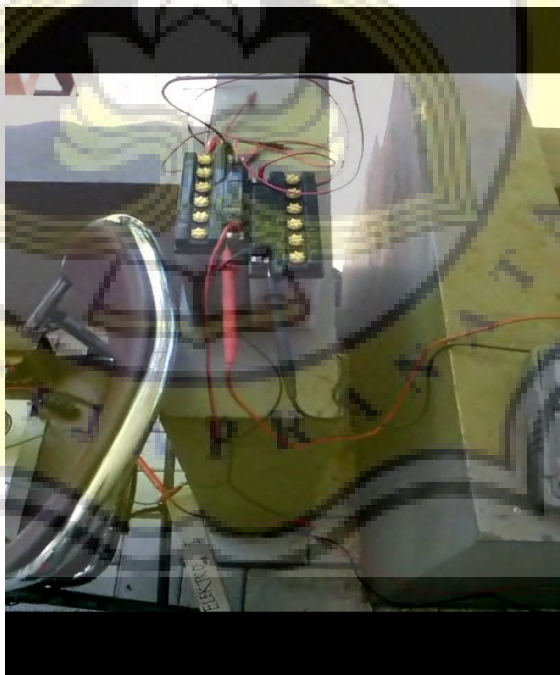
### Truth Table

		Tr1	Tr2
Input LED	On	On	Off
	Off	Off	On

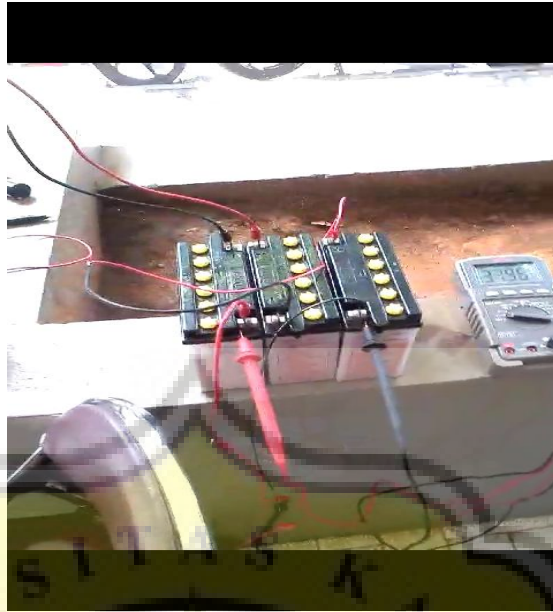
## 2. Lampiran Gambar



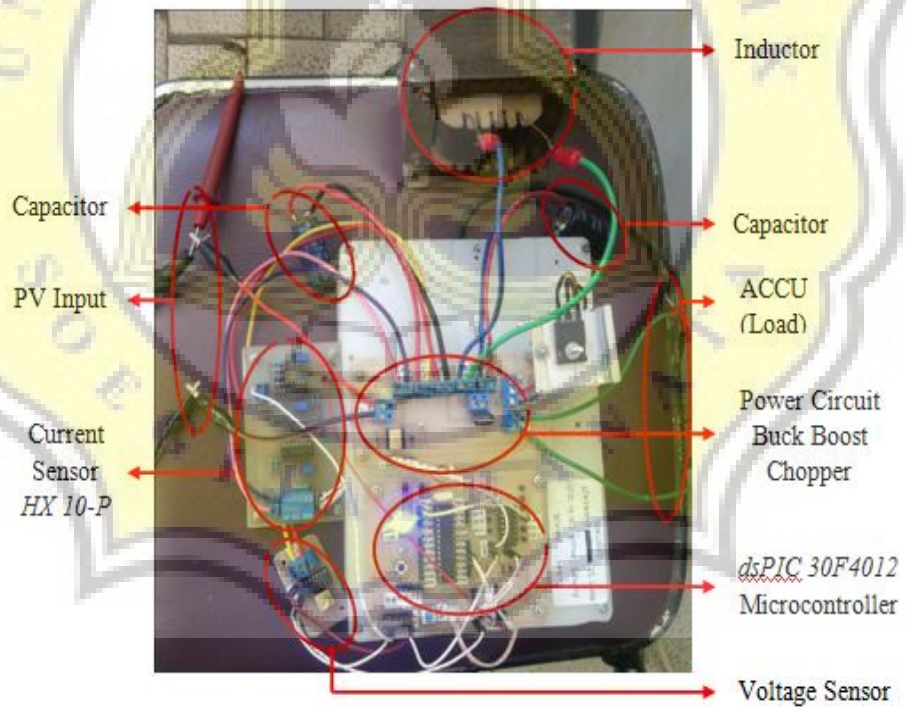
**Gambar 1. Photovoltaic Pada saat Pengujian**



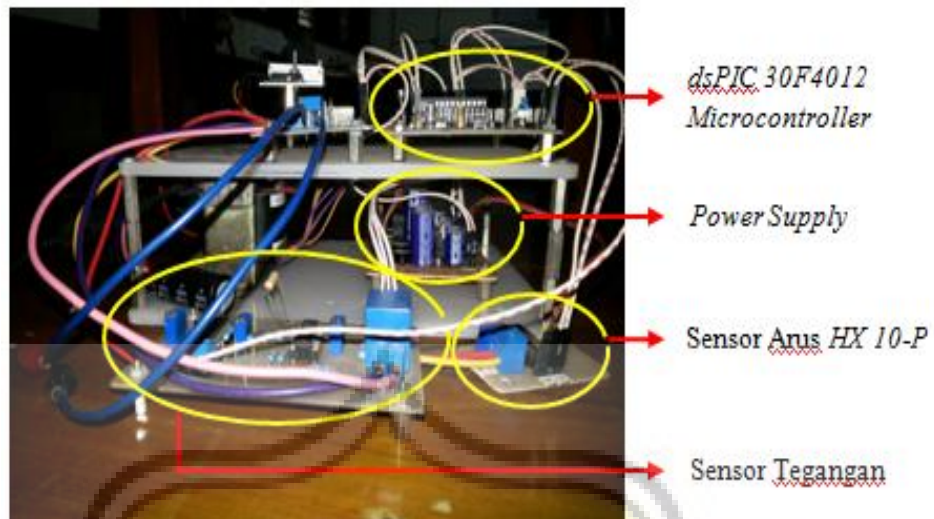
**Gambar 2. Pengujian dengan Pengisian 2 Baterai**



Gambar 3. Pengujian dengan Pengisian 3 Baterai



Gambar 4. Implementasi Alat Tampak Atas



Gambar 5. Implementasi Alat Tampak Sampung

### 3. Lampiran Program pada dsPIC30F4012

/\*

```

=====
KONTROL MPPT INCREMENTAL CONDUCTANCE (CURRENT
CONTROL)
INPUT VOLTAGE = RB3
INPUT CURRENT = RB2
OUTPUT TO GATE = LATD
TEST CONFIGURATION MCU = dsPIC30F4012 (8 MHz)
DESIGNED BY MUSA
=====

```

\*/

```

unsigned char ADC2,ADC3,V,I;
unsigned int duty;
signed long dI,dV,lastI,lastV;
signed long Pembagi,Pengali;
signed long minus,kurang;
signed long Error;

```

```

void Timer1Int() iv IVT_ADDR_T1 INTERRUPT
{

```

```

    T1IF_bit = 0; // Clear T1IF
    ADCON1bits.SAMP = 1;

```

```

IFS0bits.ADIF = 0;           // clear interrupt
while (IFS0bits.ADIF);      // conversion done?
{
    ADC2 = ADCBUF0;
    ADC3 = ADCBUF1;
}
I = ADC2;
V = ADC3;
lastI = I;
lastV = V;
dI = I - lastI;
dV = V - lastV;
Pembagi = dI / dV;
Pengali = Pembagi * V;
minus = Pengali * (-1);
kurang = minus - I;
Error = kurang;
if (Error > 0)
{
    if (duty >= PR1)
        duty = PR1-1; //duty maksimum
    else
        duty++;
}
if (Error < 0)
{
    if (duty <= 3)
        duty = 4; //duty minimum
    else
        duty--;
}
}

```

```

void main()
{
    TRISD = 0;
    LATD = 0;
    lastI = 0;
    lastV = 0;
    duty = 50;
    ADPCFG = 0xFFF3; // RB2 & RB3 = analog
}

```



```

ADCON1 = 0x00E0; // SIMSAM bit = 0 : Samples multiple channels individually in sequence
// ASAM = 0 : Sampling begins when SAMP bit set
// SSRC = 111 auto-convert

ADCCHS = 0x0302; // Connect AN3 as CH0 input (MUXB) and AN2 as CH0 (MUXA)
ADCSSL = 0;
ADCON3 = 0x0302; // Auto Sampling 3 Tad, Tad = internal 2 Tcy
ADCON2 = 0x6005; // Eksternal Vref
// only sample CH0
// SMPI = 0001 for interrupt after 2 converts
//MUXA and MUXB alternate

ADCON1bits.ADON = 1; // turn ADC ON

IPC0 = IPC0 | 0x1000; // Interrupt priority level = 1
T1IF_bit = 0; // Clear T1IF
T1IE_bit = 1; // Enable Timer1 interrupts
T1CON = 0x8000; // Timer1 ON, internal clock FCY, prescaler
PR1 = 6000; // L inti besi (6000)//1300

while (1)
{
    if (duty >= TMR1)
        LATD = 0xFFFF;
    else
        LATD = 0;
}
}


```



#### 4. Lampiran Diterimanya Seminar ICITACEE 2014 di Universitas Diponegoro

Semarang

Email dari panitia ICITACEE bahwa PAPER yang diajukan DITERIMA di Seminar Internasional ICITACEE 2014



● **Dr. Mochamad Facta** Okt20 pada 3:16 PM ★  
Ke Saya

AHMAD MUSA:

Congratulations, your submission entitled "Design and Implementation of Solar Power as Battery Charger Using Incremental Conductance Current Control Method based on dsPIC30F4012" has been ACCEPTED for presentation at International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE) which is being held 2014-11-07 at Semarang. Kindly ensure your revised paper has been converted by pdf-express and it is resubmitted through ICITACEE 2014 web as supplementary file. See <http://icitacee.undip.ac.id/index.php/icitacee/2014/announcement/view/4>. Due date for camera ready submission is October, 25th 2014.

Thank you and looking forward to your participation in this event.  
Dr. Mochamad Facta  
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Faculty of Technique - Diponegoro University  
[mochfacta@gmail.com](mailto:mochfacta@gmail.com)

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International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE) The 1st International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE 2014)  
<http://icitacee.undip.ac.id/index.php/icitacee/2014/index>

**Balas, Balas Semua atau Teruskan | Lebih lanjut**

● **Dr. Munawar A Riyadi** Okt20 pada 2:22 PM ★  
Ke Saya

AHMAD MUSA:

Congratulations, your submission entitled "Design and Implementation of Solar Power as Battery Charger Using Incremental Conductance Current Control Method based on dsPIC30F4012" has been ACCEPTED for presentation at International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE) which is being held 2014-11-07 at Semarang. Kindly ensure your revised paper is resubmitted through ICITACEE 2014 web and converted by pdf-express. See <http://icitacee.undip.ac.id/index.php/icitacee/2014/announcement/view/4>.

Thank you and looking forward to your participation in this event.  
Dr. Munawar A Riyadi  
Department of Electrical Engineering,  
Diponegoro University  
[munawar@undip.ac.id](mailto:munawar@undip.ac.id)

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International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE) The 1st International Conference on Information Technology, Computer and Electrical Engineering (ICITACEE 2014)  
<http://icitacee.undip.ac.id/index.php/icitacee/2014/index>

**Balas, Balas Semua atau Teruskan | Lebih lanjut**

5. Lampiran Sertifikat Mengikuti Seminar dan Sertifikat *BEST PAPER* ICITACEE 2014 di Universitas Diponegoro Semarang



Gambar 6. Sertifikat Telah Mengikuti Seminar ICITACEE 2014





Gambar 7. Sertifikat *BEST PAPER* Pada Seminar ICITACEE 2014