

# Power Line Communication (PLC) Transformers

- Turns ratio supports variety of PLC chipsets
- Wideband frequency response 1.5~86MHz
- Industrial and Automotive Temperature ranges
- Designed with EN/UL/IEC62368-1 for 250V working voltage
- Designed for Qualcomm, Broadcom, MTK, Intellon & STMicro chipset
- Compliant Automotive spec AEC-Q200
- Custom designs are available

## Electrical Specification @25°C:

| Model No.  | Turns Ratio<br>TX:RX:PL | Inductance <sup>1,2,3</sup><br>(uH) | DCR (mΩ Max) |     |     | Leakage <sup>4</sup><br>Inductance<br>(uH Max.) | Cw/w <sup>5</sup><br>(pF Max) | Hi-Pot<br>(Vac) | AES-Q200<br>Qualified | Insulation<br>Class | Package Size<br>(WxLxH mm Max) |
|------------|-------------------------|-------------------------------------|--------------|-----|-----|-------------------------------------------------|-------------------------------|-----------------|-----------------------|---------------------|--------------------------------|
|            |                         |                                     | TX           | RX  | PL  |                                                 |                               |                 |                       |                     |                                |
| UT11348S-A | 1:1                     | 12.5 Typ (PL)                       | —            | —   | —   | —                                               | —                             | 3750            | No                    | Reinforced          | 8.45x11.4x8.5                  |
| UT11387S   | 1:1                     | 12.5 Typ (PL)                       | —            | —   | —   | —                                               | —                             | 3750            | No                    | Reinforced          | 12.5x17.7x5.4                  |
| UT11451S   | 1:1:1                   | 8.7 Min (PL)                        | 500          | 500 | 500 | —                                               | —                             | 3000            | Yes                   | Reinforced          | 8.45x11.4x8.5                  |
| UT11481S   | 1:1:1                   | 8 Min (PL)                          | 60           | 60  | 60  | —                                               | —                             | 3000            | No                    | Supplementary       | 10.6x12.8x12.5                 |
| UT11482S   | 1:1:1                   | 28 Min (PL)                         | 100          | 100 | 100 | —                                               | —                             | 3000            | No                    | Supplementary       | 10.6x12.8x12.5                 |
| UT11483S   | 1:1:2                   | 7 Min (TX)                          | 250          | 250 | 500 | —                                               | —                             | 3000            | No                    | Reinforced          | 10.5x14.5x7.8                  |
| UT11484S   | 1:1                     | 7 Min (TX)                          | 500          | 500 | —   | —                                               | 25                            | 4000            | No                    | Reinforced          | 10.5x14.5x7.8                  |
| UT11485S   | 1:1:1                   | 20 Min (PL)                         | 65           | 65  | 65  | —                                               | —                             | 3000            | No                    | Supplementary       | 10.7x15.5x7.0                  |
| UT11486S   | 1:1:1                   | 5 Min (PL)                          | 500          | 500 | 500 | 0.5                                             | —                             | 500             | No                    | Functional          | 5.65x7.8x4.0                   |
| UTB02157S  | 1:1.5:1.5CS             | 10 Min (PL)                         | 160          | 320 | 320 | 0.15                                            | 4.5                           | 3750            | No                    | Reinforced          | 8.8x10.1x6.6                   |
| UTB02201S  | 0.25:1.25:1             | 10~35 (PL)                          | 20           | 100 | 100 | 0.15                                            | 6                             | 3750            | Yes                   | Reinforced          | 8.45x11.4x8.5                  |
| UTB02202S  | 1:1:1                   | 11.7 Typ (PL)                       | 20           | 58  | 30  | 0.125                                           | 9                             | 1875            | Yes                   | Functional          | 8.45x11.4x8.5                  |
| UTB02212S  | 0.33:1.33:1             | 11.7 Typ (PL)                       | 8            | 58  | 58  | 0.125                                           | 5                             | 3750            | No                    | Reinforced          | 8.45x11.4x8.5                  |

- Inductance measured at 2MHz, 100mV (UT11348S-A, UT11387S & UT11451S).
- Inductance measured at 100kHz, 100mV (UTB02157S, UTB02201S, UTB02202S & UTB02212S).
- Inductance spec is for -40°C to 125°C and measured at 100kHz, 10mV (UT11481S & UT11485S), 10kHz, 20mV (UT11482S) and 100kHz, 100mV (UT11483S, UT11484S & UT11486S).
- Leakage Inductance measured at 100kHz, 100mV, Pri to Sec. shorted.
- Interwinding Capacitance measured at 100kHz, 100mV, Pri to Sec.
- Operating Frequency range 2 to 70MHz (UT11348S-A, UT11387S & UTB02212S), 2 to 100MHz (UT11451S), 1.5 to 30MHz (UT11481S, UT11482S & UT11485S), 1.8 to 86MHz (UTB02157S), 1.8 to 30MHz (UTB02201S, UTB02202S).
- Designed for chipset applications:  
UT11348S-A & UT11387S for Qualcomm's AR7420, UT11451S for MTK's MSE102x, UTB02201S & UTB02202S for Qualcomm's QCA7000, UTB02212S for QCA7500 & QCA6410, UTB02157S for Broadcom's BCM60333 & BCM60500, UT11483S/84S/85S for Qualcomm's QCA700x, Intellon's INT5500/INT1200 & STMicro's ST2100.
- Operating Temperature is -40°C to 125°C on UT11451S, UT11481S~UT11486S, UTB02201S & UTB02202S.  
Operating Temperature is -40°C to 85°C on UT11348S-A, UT11387S, UTB02157S & UTB02212S.

Notes: 1. For RoHS compliant products:

- Ordering code (Manufacturer Part Number): ex. TG-UTB02202S
- Date Code suffix to "G".

2. For RoHS and AEC-Q200 Compliant products:

- Ordering code (Manufacturer Part Number): ex. TG-UTB02202S-Q
- Date Code suffix to "GQ"

3. Solder: Sn/Ag/Cu

4. Construction patents (Taiwan and Foreign, China Patent No.CN205016333U) on UT11348S-A, UT11451S, UTB02201S, UTB02202S & UTB02212S.



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**UNIVERSAL MICROELECTRONICS CO.,LTD.**  
TEL:886-4-23590096 FAX:886-4-23590129  
<http://www.umec.com.tw> E-mail:business@umec.com.tw

**3,27TH RD.,TAICHUNG INDUSTRIAL PARK,  
TAICHUNG,TAIWAN,R.O.C**



**ES France - Département Composants & Modules**  
127 rue de Buzenval BP 26 - 92380 Garches



**Tél. 01 47 95 99 89**  
**Fax. 01 47 01 16 22**

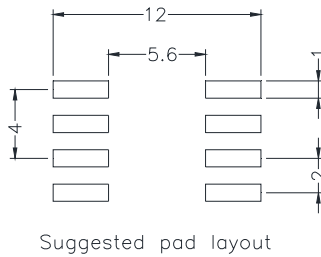
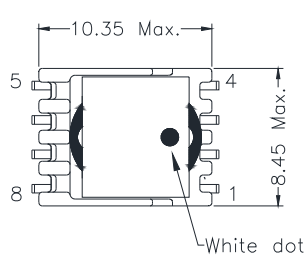


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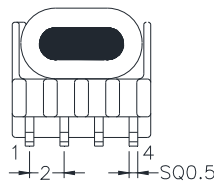
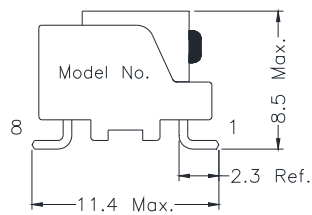
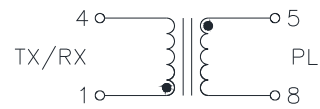
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## Mechanicals & Schematics

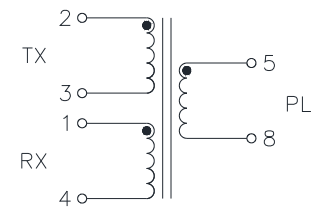
UT11348S-A, UT11451S, UTB02201S, UTB02202S, UTB02212S



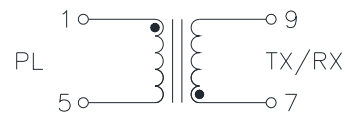
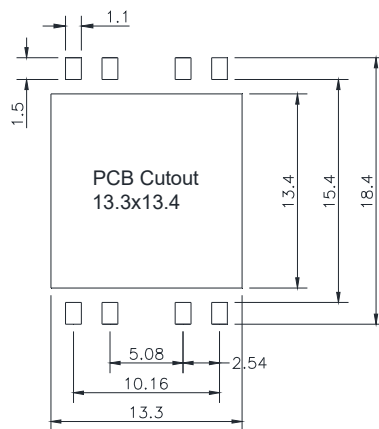
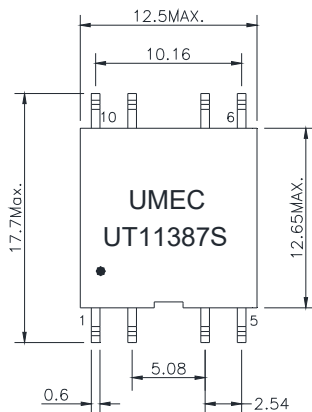
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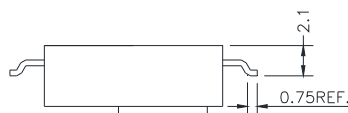
UT11451S, UTB02201S  
UTB02202S, UTB02212S



Unit: mm  
Tolerance:  $\pm 0.25\text{mm}$



Suggested pad layout



Unit: mm  
Tolerance:  $\pm 0.25\text{mm}$

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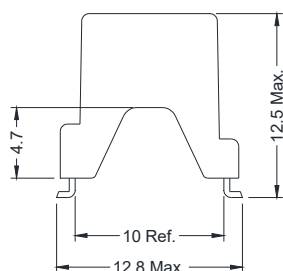
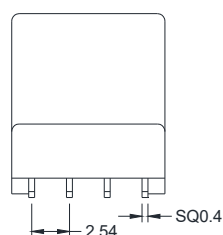
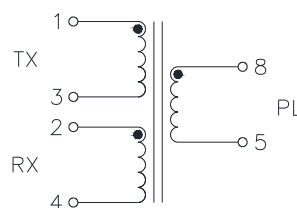
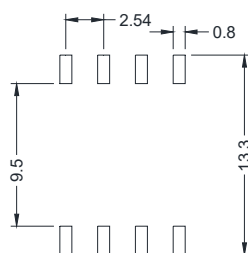
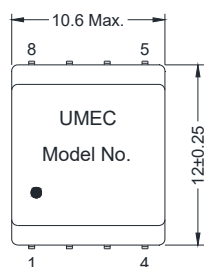


e-mail : comp@es-france.com  
Site Web : www.es-france.com

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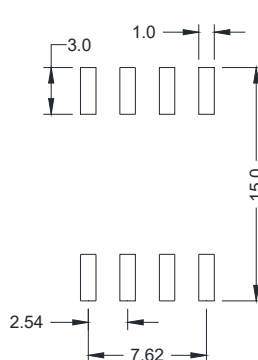
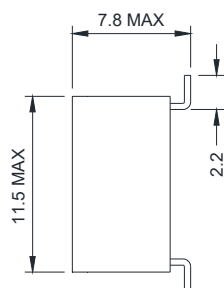
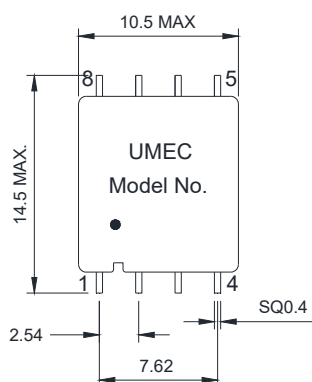
## Mechanicals & Schematics

### UT11481S, UT11482S

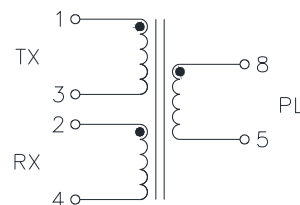


Unit: mm  
Tolerance:  $\pm 0.25\text{mm}$

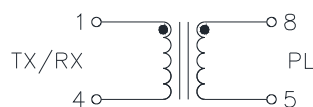
### UT11483S, UT11484S



#### UT11483S



#### UT11484S



Unit: mm  
Tolerance:  $\pm 0.25\text{mm}$

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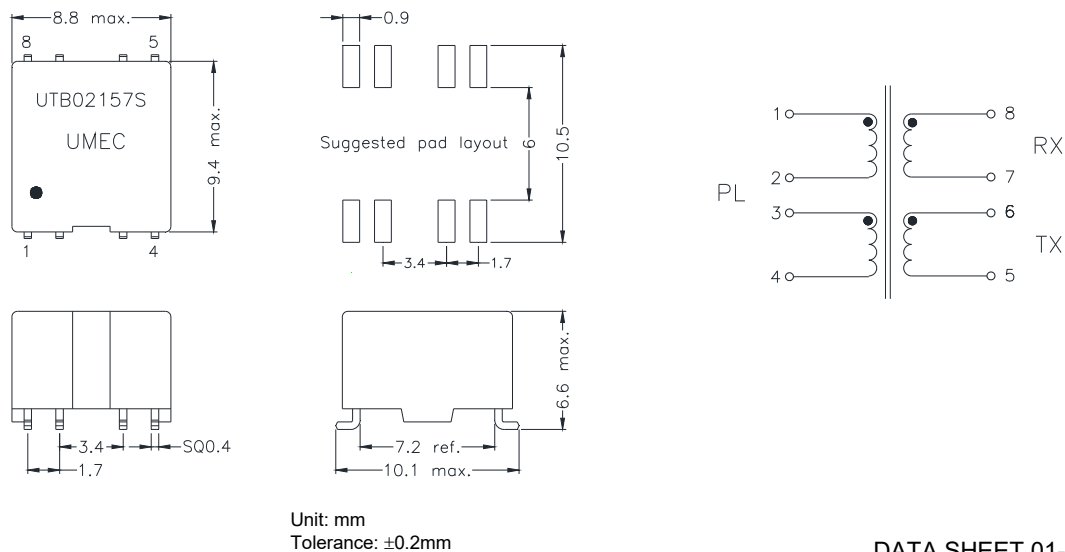
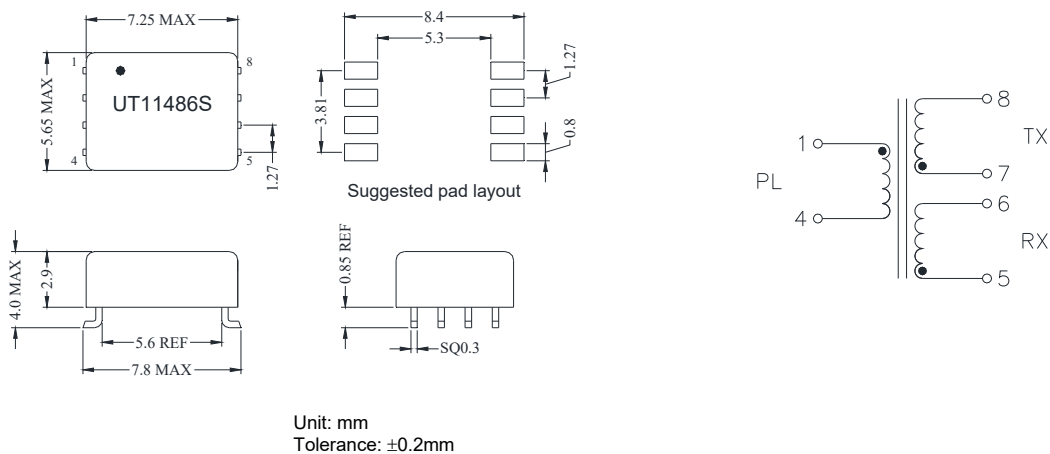
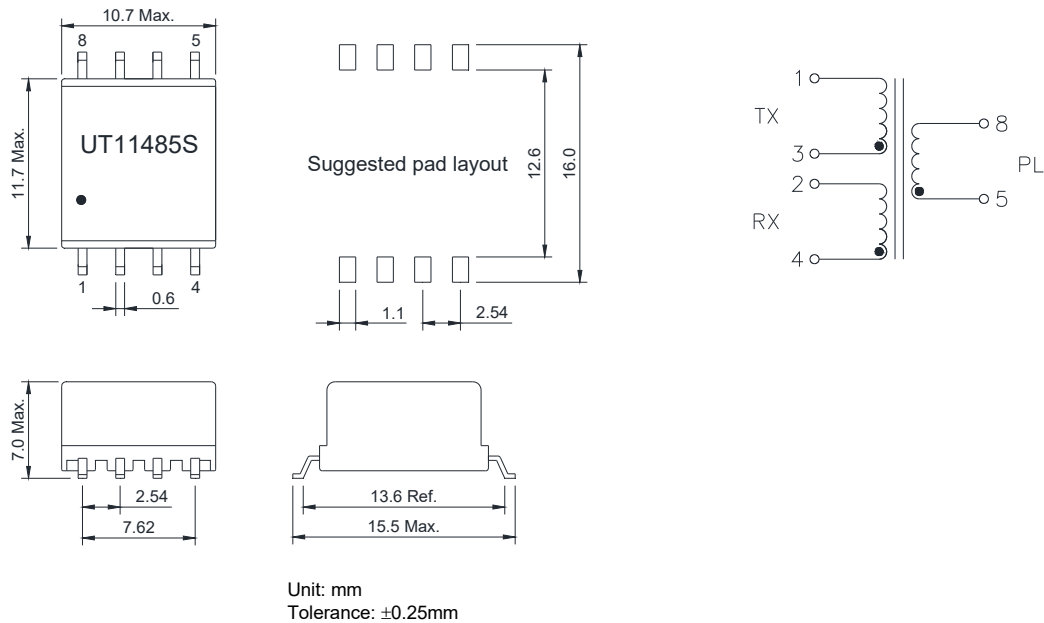
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## Mechanicals & Schematics



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