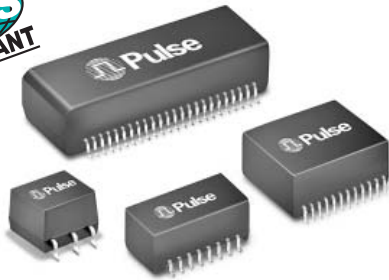


# POWER OVER ETHERNET (PoE) MAGNETICS

## 10/100BASE-TX VoIP Magnetics Modules



- RoHS peak reflow temperature rating 245°C
- IEEE 802.3af/ANSI X3.263 compliant performance
- Designed for IP phone or switch applications

### Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

| Part Number               | Ports | Insertion Loss<br>(dB MAX) | Return Loss<br>(dB MIN @ 100 Ω) |          |        |        |           | Differential to Common<br>Mode Rejection<br>(dB MIN) |        |         | Cross Talk<br>(dB MIN) |        |         | Hipot<br>(Vrms MIN)) | DC<br>Resistance<br>Balance<br>≤ (%) |
|---------------------------|-------|----------------------------|---------------------------------|----------|--------|--------|-----------|------------------------------------------------------|--------|---------|------------------------|--------|---------|----------------------|--------------------------------------|
|                           |       |                            | 1-100 MHz                       | 1-30 MHz | 40 MHz | 50 MHz | 60-80 MHz | 30 MHz                                               | 60 MHz | 100 MHz | 30 MHz                 | 60 MHz | 100 MHz |                      |                                      |
| H1187NL <sup>2a</sup>     | 1     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1500                 | —                                    |
| H1197NL <sup>2a</sup>     | 1     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1500                 | —                                    |
| H2019NL <sup>2a</sup>     | 1     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1500                 | 3.5                                  |
| H2005ANL <sup>2c</sup>    | 2     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -50                                                  | -43    | -35     | -43                    | -37    | -33     | 1500                 | 3.5                                  |
| H2006ANL <sup>2c</sup>    | 2     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -43                    | -37    | -31     | 1500                 | 3.5                                  |
| H2008NL <sup>2c</sup>     | 2     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -40                                                  | -35    | -30     | -43                    | -37    | -33     | 1500                 | 3.5                                  |
| H2009NL <sup>2a</sup>     | 2     | -1.1                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -43                    | -37    | -33     | 1500                 | 3.5                                  |
| H2014NL <sup>2d</sup>     | 4     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1500                 | 3.5                                  |
| H2017NL <sup>2c</sup>     | 4     | -1.2                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1800                 | 3.5                                  |
| HX2019NL <sup>1, 2a</sup> | 1     | -1.4                       | -16                             | -14      | -13    | -13    | -12       | -43                                                  | -37    | -33     | -45                    | -40    | -35     | 1500                 | 3.5                                  |

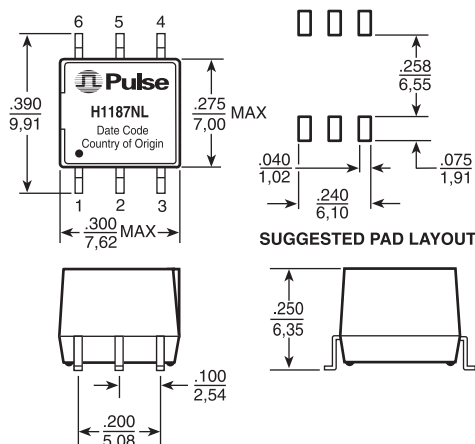
1. Extended operating temperature (-40°C to +85°C)

2. MSL (Moisture Sensitivity Level): a = 1, b = 2, c = 3, d = 4, e = 5

NOTE: When ordering Tape & Reel packaging, add the suffix "T" to the end of the part number. For example: H2008NLT.

## Mechanicals

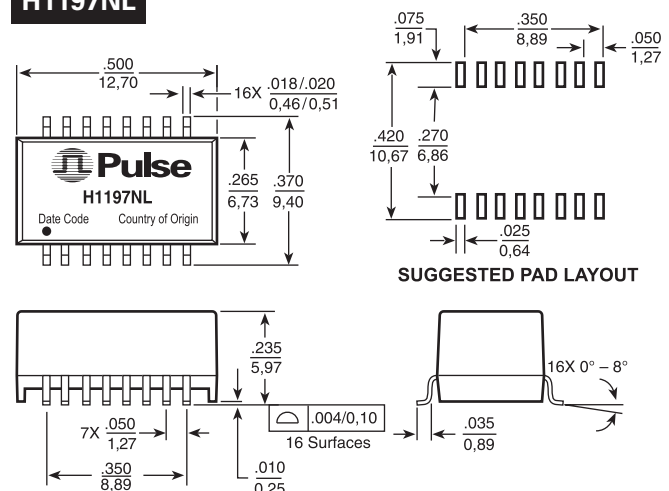
### H1187NL



Weight ..... 0.6 grams  
Tape & Reel ..... 500/reel  
Tube ..... 70/tube

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$

### H1197NL



Weight ..... 2.8 grams  
Tape & Reel ..... 600/reel  
Tube ..... 45/tube

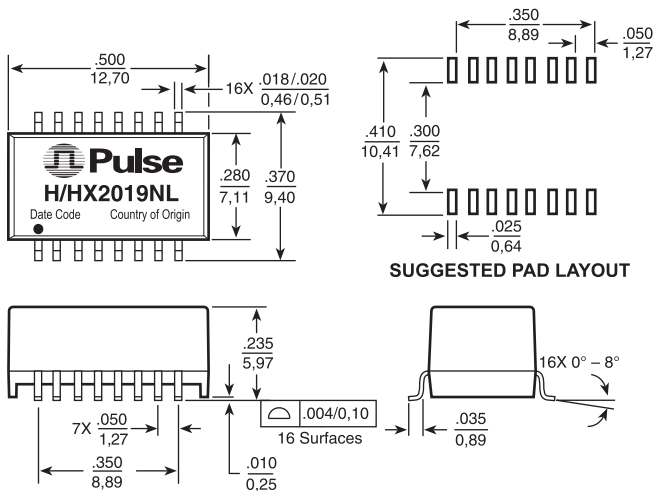
# POWER OVER ETHERNET (PoE) MAGNETICS

## 10/100BASE-TX VoIP Magnetics Modules



### Mechanicals

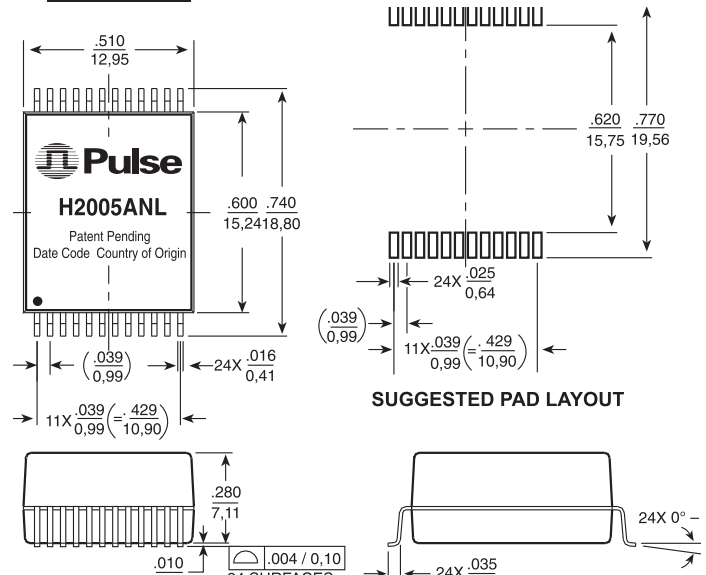
#### H2019NL, HX2019NL



Weight . . . . . 1.0 grams  
Tape & Reel . . . . . 600/reel  
Tube . . . . . 45/tube

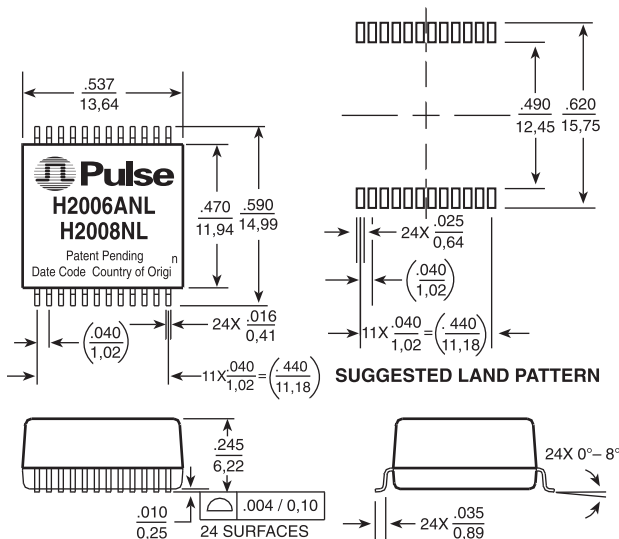
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

#### H2005ANL



Weight . . . . . 2.7 grams  
Tape & Reel . . . . . 300/reel  
Tube . . . . . 25/tube

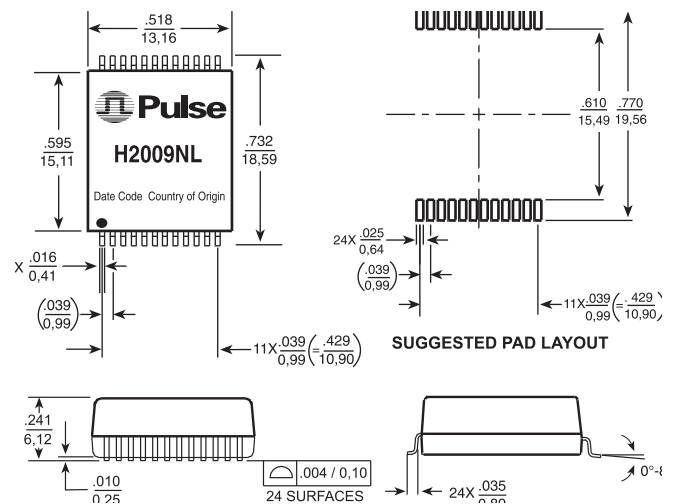
#### H2006ANL, H2008NL



Weight . . . . . 2.4 grams  
Tape & Reel . . . . . 350/reel  
Tube . . . . . 35/tube

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

#### H2009NL



Weight . . . . . 1.6 grams  
Tape & Reel . . . . . 300/reel  
Tube . . . . . 35/tube

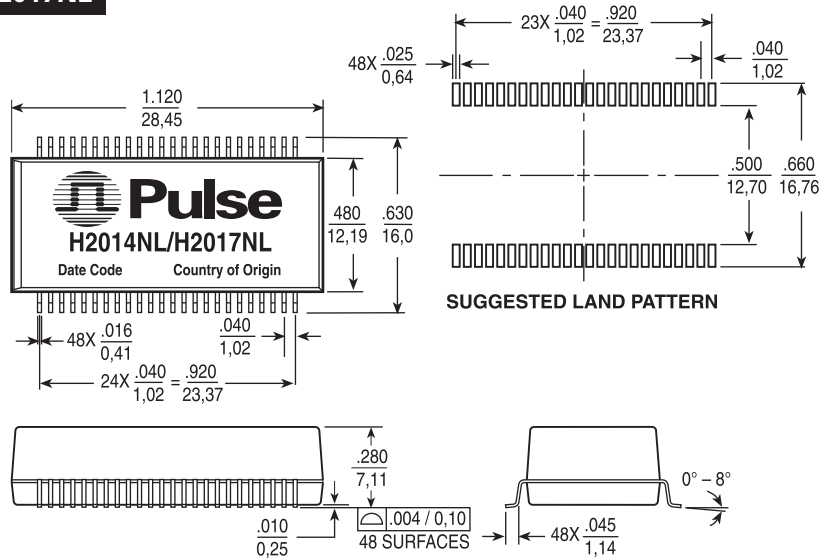
# POWER OVER ETHERNET (PoE) MAGNETICS

## 10/100BASE-TX VoIP Magnetics Modules



### Mechanicals (continued)

#### H2014NL, H2017NL

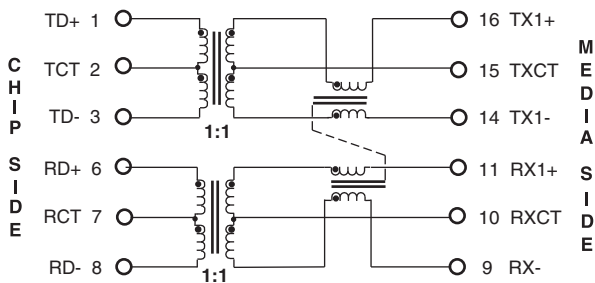


**Dimensions:**  $\frac{\text{Inches}}{\text{mm}}$  Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0.25}$

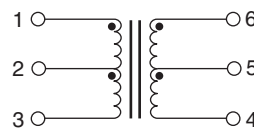
**Weight** . . . . . 5.0 grams  
**Tape & Reel** . . . . . 250 /reel  
**Tube** . . . . . 15/tube

### Schematics

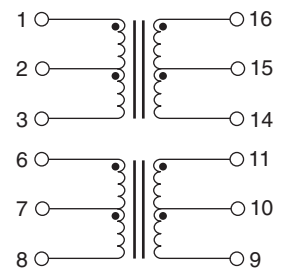
#### H2019NL, HX2019NL



#### H1187NL



#### H1197NL



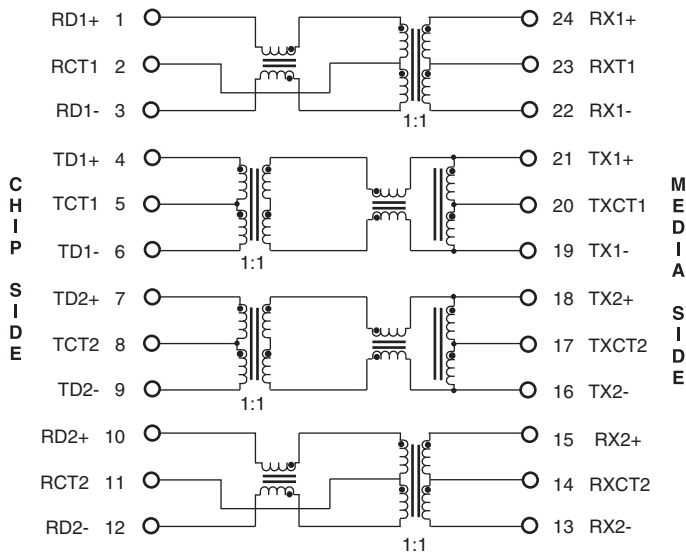
# POWER OVER ETHERNET (PoE) MAGNETICS

## 10/100BASE-TX VoIP Magnetics Modules

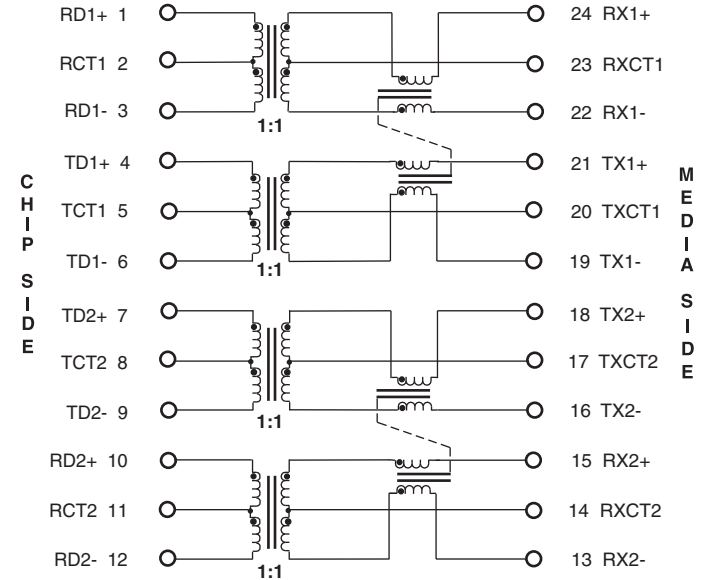


### Schematics (*continued*)

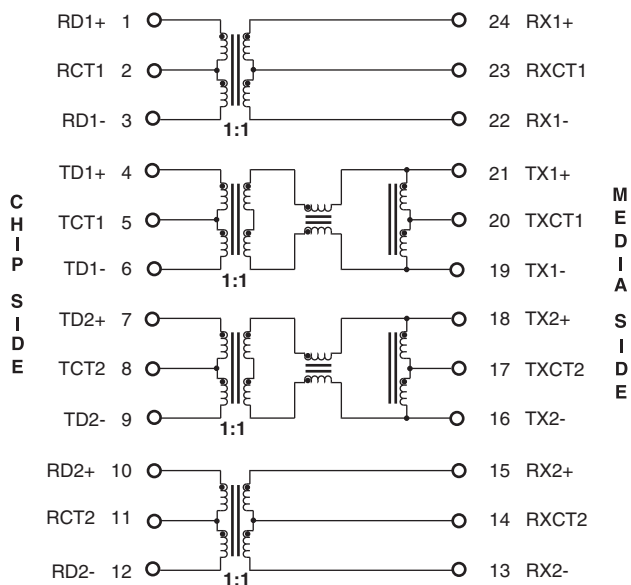
**H2005ANL**



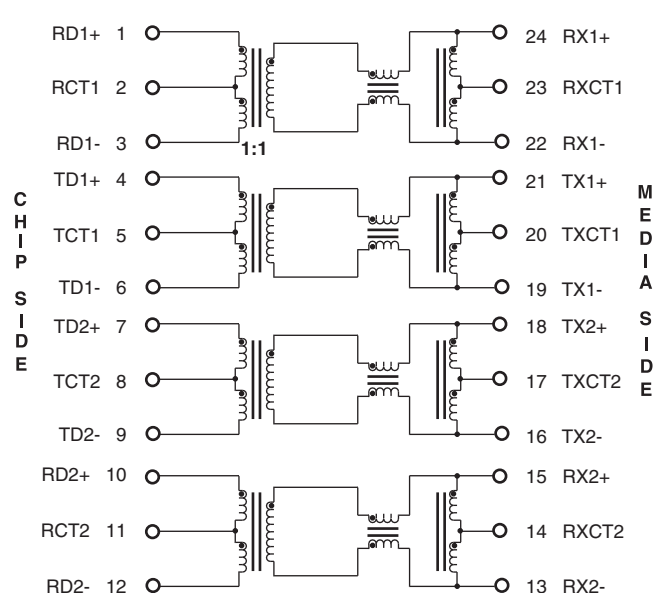
**H2006ANL**



**H2008NL**



**H2009NL**



# POWER OVER ETHERNET (PoE) MAGNETICS

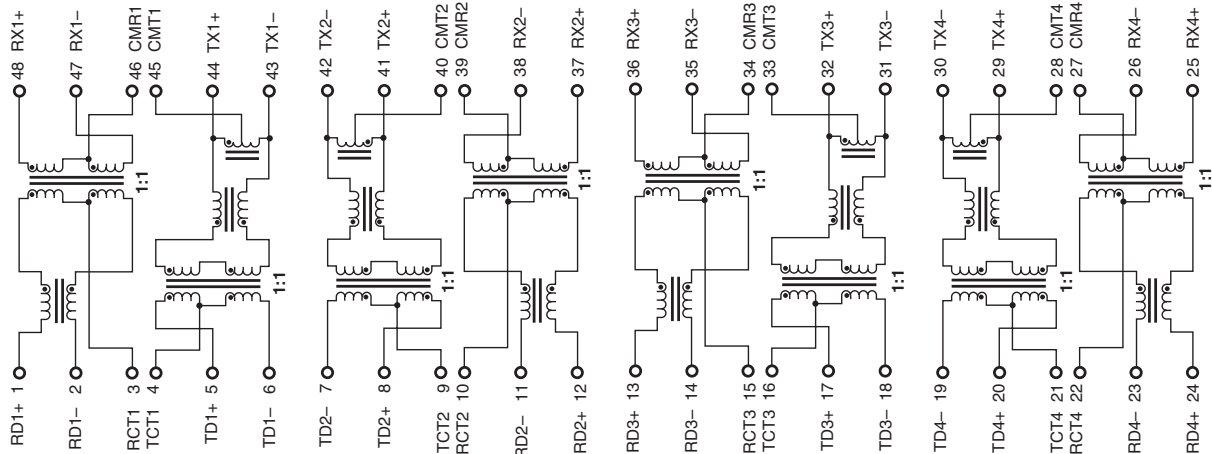
## 10/100BASE-TX VoIP Magnetics Modules



### Schematics (*continued*)

#### H2014NL

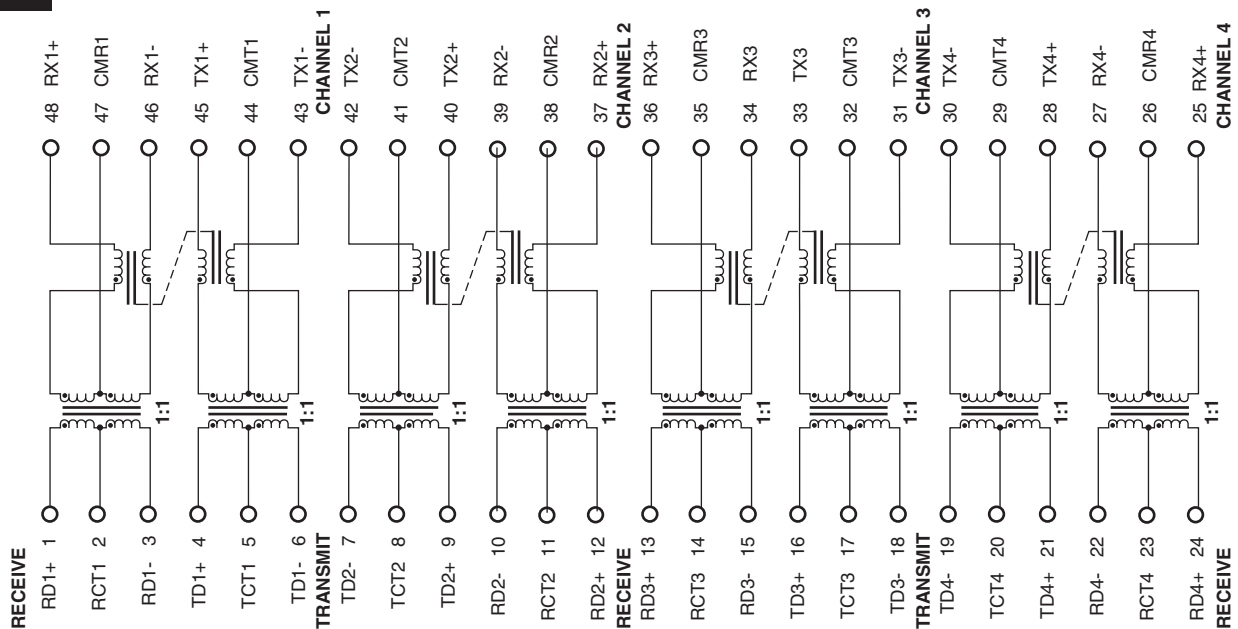
#### MEDIA SIDE



#### CHIP SIDE

#### H2017NL

#### MEDIA SIDE



#### CHIP SIDE

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