

# 10Gbps InGaAs APD-TIA TO-CAN

**Model: AAIT010GT05FW-X-2**



## Features:

- Optical Communication
- 10G EPON OLT
- InGaAs Avalanche Photodiode(APD)  
with Trans-Impedance Amplifier(TIA)

## Product Specifications:

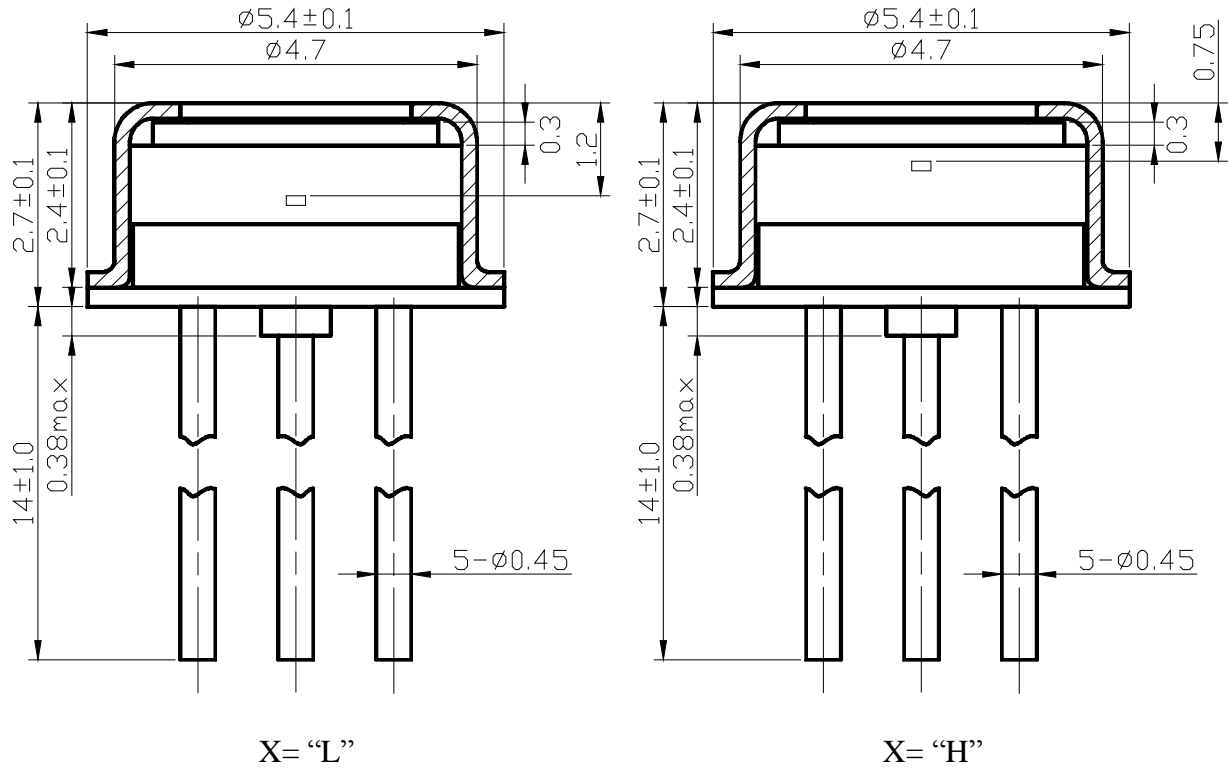
Absolute Maximum Ratings(T=25°C)

| Parameter                 | Symbol            | Unit | Min  | Max             | Note           |
|---------------------------|-------------------|------|------|-----------------|----------------|
| APD Reverse Current       | I <sub>r</sub>    | mA   |      | 2               |                |
| APD Reverse Voltage       | V <sub>r</sub>    | V    |      | V <sub>br</sub> |                |
| Power Supply Voltage      | V <sub>P</sub>    | V    | -0.4 | 4               |                |
| Operating Temperature     | T <sub>OP</sub>   | °C   | -5   | 75              |                |
| Storage Temperature       | T <sub>syg</sub>  | °C   | -40  | 100             |                |
| Solder Reflow Temperature | T <sub>slid</sub> | °C   |      | 260             | 10 seconds max |

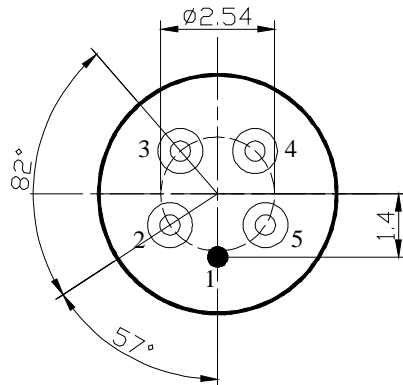
Electro-Optical Characteristics(T=25°C, unless noted otherwise)

| Parameter               | Symbol           | Unit  | Min  | Typ | Max   | Test Condition  |
|-------------------------|------------------|-------|------|-----|-------|---|
| Supply Voltage          | V <sub>cc</sub>  | Volts | 3.0  | 3.3 | 3.6   |   |
| Supply Current          | I <sub>CC</sub>  | mA    | —    | 42  | —     | No load   |
| Breakdown Voltage       | V <sub>br</sub>  | V     | 20   | —   | 40    | I <sub>d</sub> =10μA, V <sub>cc</sub> off   |
| Dark Current            | I <sub>d</sub>   | nA    | —    | —   | 300   | V <sub>r</sub> =V <sub>br</sub> -3  |
| Wavelength Range        | λ                | nm    | 1250 | —   | 1650  |   |
| Saturated Optical Power | P <sub>sat</sub> | dBm   | -6   | —   | —     | 10.3125Gb/s, ER=6.4, BER=10 <sup>-3</sup> , PRBS=2 <sup>31</sup> -1, V <sub>r</sub> =V <sub>br</sub> -3 |
| Responsibility          | R                | A/W   | —    | 0.8 | —     | λ=1550nm, M=1   |
| -3dBm Bandwidth         | BW               | GHz   | 8    | —   | —     | R <sub>L</sub> = 50 Ω, V <sub>r</sub> =V <sub>br</sub> -3, P <sub>in</sub> =-30dBm                      |
| Sensitivity             | Sen              | dBm   | —    | —   | -30.0 | 10.3125Gb/s, ER=6.4, BER=10 <sup>-3</sup> , PRBS=2 <sup>31</sup> -1, V <sub>r</sub> =V <sub>br</sub> -3 |

**Outline Drawings (in mm):**



**PIN-OUT**



Bottom View

| Pin-out Assignment |                  |
|--------------------|------------------|
| Number             | "05"             |
| 1                  | Gnd              |
| 2                  | DOUT(+)          |
| 3                  | V <sub>CC</sub>  |
| 4                  | V <sub>APD</sub> |
| 5                  | DOUT(-)          |

**Ordering information:**

AAIT010GT05FW-X-2

AIT=APD-TIA

010G=10Gbps

05=Pin-out, see table

FW= Flat Window

-X= "H" or "L", see outline drawings



-2=TIA type, GN7052

If the focus is inappropriate, Please contact us. We can change the focus within a certain range.

***Precaution:***

- (1) The modules should be handled in the same manner as ordinary semiconductor device to prevent the electro-static damages. For safety keeping and carrying, the modules should be packaged with ESD proof material. To assemble the modules on PCB, the workbench, the soldering iron and the human body should be grounded.
- (2) Please pay special attention to the atmosphere condition because the dew on the module may cause some electrical damages.
- (3) Under such a strong vibration environment as in automobile, the performance and reliability are not guaranteed.