

◆ **Introduction:**

S-13AAPD10-G is a front-side illuminated InGaAs APD chip with a planar structure. This product has high responsivity, low dark current, and excellent reliability. It is ideally suited for low cost, high-speed data communication designs.

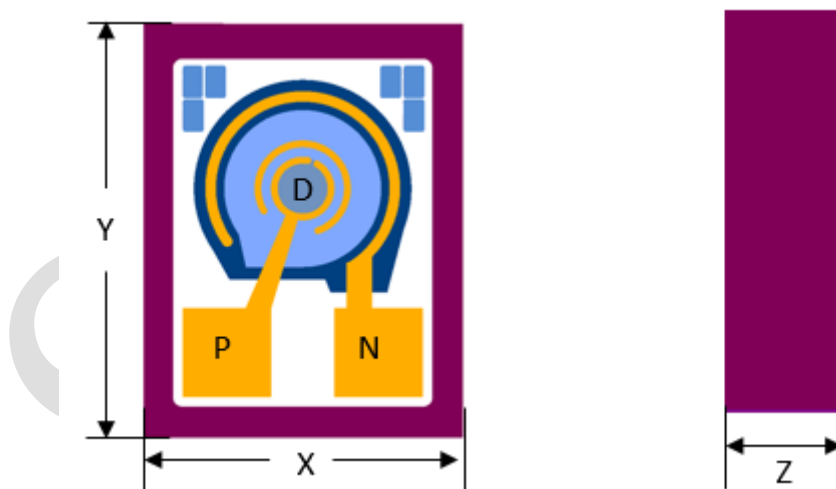
◆ **Key Features:**

- Optical aperture: 40μm
- Topside cathode and anode
- Operating temperature range:-40 to +85°C
- 100% testing and inspection
- RoHS compliant

◆ **Applications:**

- 10G PON
- Long-haul networks
- Single mode datacom and telecom

◆ **Physical Parameters:**



| Symbol | Die Dimension | | | Aperture | Pad | |
|--------|---------------|-----|-----|----------|--------|--------|
| | X | Y | Z | | N | P |
| Min | 225 | 295 | 135 | 38 | 65*65 | 65*65 |
| Typ | 250 | 320 | 150 | 40 | 70*70 | 70*70 |
| Max | 275 | 345 | 165 | 42 | 75*75 | 75*75 |
| Unit | μm | μm | μm | μm | μm *μm | μm *μm |

◆ Absolute Maximum Rating:

| Parameter | Symbol | Rating | | Unit |
|-----------------------|----------|--------|----------|------|
| | | Min | Max | |
| Operation Voltage | V_{OP} | | V_{BR} | V |
| Forward Current | I_F | | 5 | mA |
| Reverse Current | I_R | | 3 | mA |
| Operating Temperature | T_{OP} | -40 | 85 | °C |
| Storage Temperature | T_C | -45 | 125 | °C |

◆ Specifications (T=25°C) :

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-------------------------------------|-----------|---|-------|-----------|-------|------|
| Wavelength Range | λ | | 1210 | 1310/1550 | 1650 | nm |
| Breakdown Voltage | V_{BR} | $I_D=10\mu A$ | 25 | 31 | 34 | V |
| Dark Current | I_D | $V_R=V_{BR}-3V$ | | 10 | 100 | nA |
| Responsivity | R_e | $\lambda=1550nm$ $P_O=1\mu W$ $M=1$ | 0.65 | 0.8 | | A/W |
| Multiplication Factor | M | $\lambda=1550nm$ $P_O=1\mu W$ $V_R=V_{BR}-3V$ | 8 | | | |
| Capacitance | C | $V_R=V_{BR}-3V$ | | 0.29 | 0.32 | pF |
| -3dB Bandwidth | BW | $V_R=V_{BR}-3V$ | 7.0 | | | GHz |
| Temperature coefficient of V_{BR} | γ | -40~+85°C | 0.040 | 0.044 | 0.070 | V/°C |