

## Peak Sensitivity Wavelength: 850nm

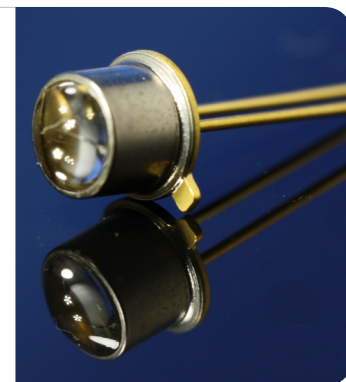
The MTD5010N is a photo diode in a TO-18 metal can domed package. It is well suited for high reliability and high speed applications.

### FEATURES

- > Ultra High Speed
- > Low Dark Current / Metal Can Package
- > Narrow Angular Response
- > High Reliability in Demanding Environments

### APPLICATIONS

- > Optical Switches
- > Edge Sensing
- > Fiber Optical Communications
- > Smoke Detectors



## Absolute Maximum Ratings (Ta=25°C)



| ITEMS                        | SYMBOL | RATINGS    | UNIT |
|------------------------------|--------|------------|------|
| Reverse Voltage              | VR     | 30         | V    |
| Power Dissipation            | PD     | 100        | mW   |
| Operating Temperature Range  | Topt   | -30 ~ +100 | °C   |
| Storage Temperature Range    | Tstg   | -40 ~ +125 | °C   |
| Junction Temperature         | Tj     | 100        | °C   |
| Lead Soldering Temperature*1 | Tls    | 260        | °C   |

\*1: Time 5 Sec max, Position: Up to 3mm from the body.

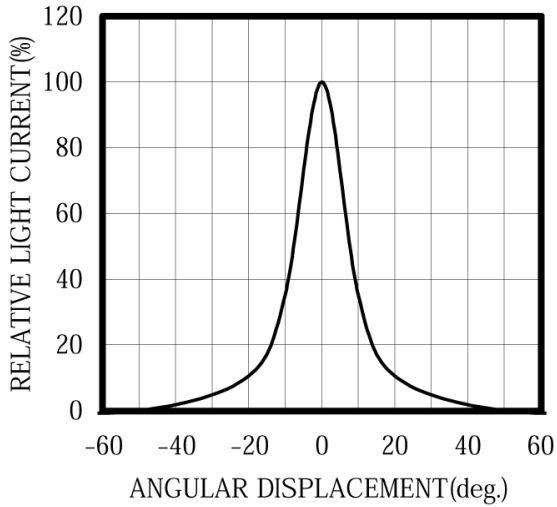
## Electrical & Optical Characteristics (Ta = 25°C)

| ITEMS                       | SYMBOL | CONDITIONS                | MIN  | TYP      | MAX | UNIT |
|-----------------------------|--------|---------------------------|------|----------|-----|------|
| Light Current               | IL     | *1, *2                    | --   | 120      | --  | μA   |
| Dark Current                | ID     | VR=10V                    | --   | --       | 5   | nA   |
| Curve Factor                | CF     | Ee=5mW/cm <sup>2</sup> *1 | 0.55 | --       | --  | --   |
| Spectral Sensitivity        | λ      | --                        | --   | 400~1100 | --  | nm   |
| Peak Sensitivity Wavelength | λp     | --                        | --   | 850      | --  | nm   |
| Responsivity                | Rt     | VR=0V, λ=450nm            | --   | 0.20     | --  | A/W  |
| Responsivity                | Rt     | VR=0V, λ=900nm            | --   | 0.55     | --  | A/W  |
| Angular Response            | θ      | --                        | --   | ±12      | --  | deg  |
| Response Time               | --     | RL=50Ω, Vr=20V            | --   | 3.5      | --  | nS   |
| Junction Capacitance        | Cj     | at 1MHz, V=0V             | --   | 8        | 15  | pF   |

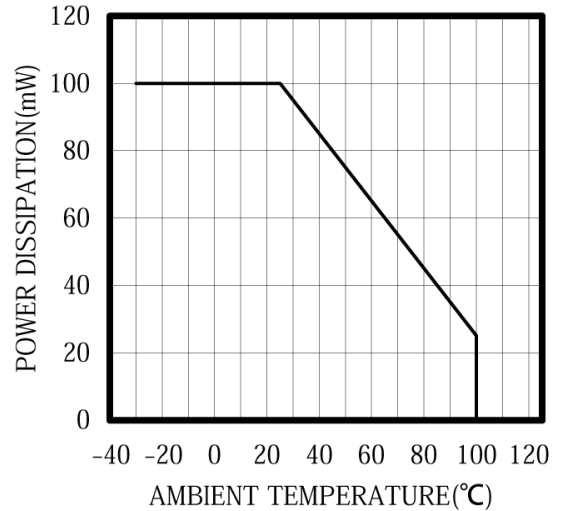
\*1: Color Temperature=2870°K Standard Tungsten Lamp, \*2: VR=10V, Ee=5mW/cm<sup>2</sup>.



ANGULAR DISPLACEMENT



THERMAL DERATING CURVE



RESPONSIVITY

