

Peak Emission Wavelength: 1300nm

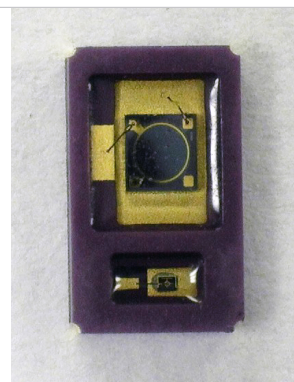
The MTRS0013C reflective sensor consists of a 1300nm infrared emitter and high sensitivity InGaAs photodiode in the same package. The black molded housing reduces the effect of external ambient light. Custom emitter/detectors are available.

FEATURES

- > High Reliability
- > 5.1 x 3.3mm Surface Mount Package
- > Short Detection Distance Optimum 0.5-1.5mm

APPLICATIONS

- > Card Reader
- > Bar-code Reader
- > Edge Sensing / Money-bill Reader



Absolute Maximum Ratings (Ta=25°C)

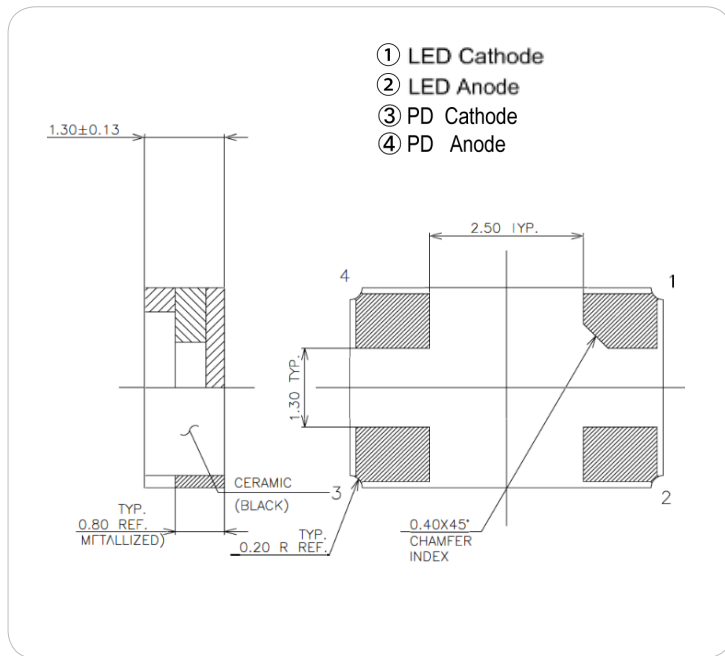
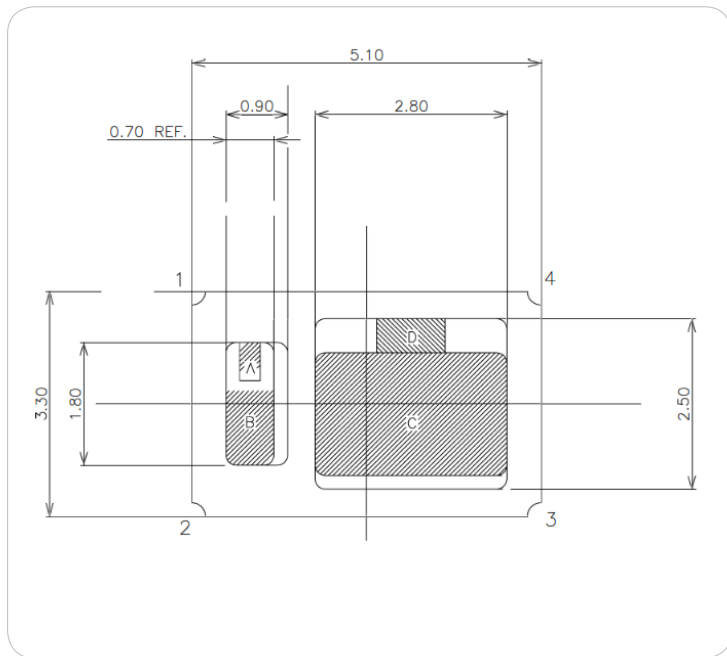


| ITEMS | SYMBOL | RATINGS | UNIT |
|-------------------------------|--------------|-------------|------|
| Forward Current (LED) | IF | 40 | mA |
| Pulse Forward Current (LED)*1 | IFP | 0.5 | A |
| Reverse Voltage (LED) | VR | 5 | V |
| Power Dissipation (LED) | PD | 100 | mW |
| Reverse Voltage (PD) | VR (IR=10uA) | 3 | V |
| Reverse Current (LED) | IR (VR=5V) | 10 | uA |
| Operating Temperature Range | Topr | -20 to +80 | °C |
| Storage Temperature Range | Tstg | -30 to +100 | °C |

*1: Tw=10µsec, T=10msec.

Electrical & Optical Characteristics (Ta = 25°C)

| ITEMS | SYMBOL | CONDITIONS | MIN | TYP | MAX | UNIT |
|---------------------------------|-----------------|---------------------------------|-----|------|------|------|
| Forward Voltage (LED) | VF | IF=20mA | -- | 1.0 | -- | V |
| Peak Emissions Wavelength (LED) | λ_p | IF=20mA | -- | 1300 | -- | nm |
| Spectral Line Half Width (LED) | $\Delta\lambda$ | IF=20mA | -- | 70 | -- | nm |
| Power Output (LED) | PO | IF=20mA | -- | 1.4 | -- | mW |
| Reverse Dark Current (Iceo) | ID | VR=1V | -- | 2.0 | -- | uA |
| Light Current @1300nm | IL | $\lambda=1300\text{nm}$; VR=2V | -- | 180 | -- | uA |
| Shunt Resistance | RSH | VR=10mV | -- | 2 | -- | MΩ |
| Sensitivity Range | V | VR=0V | 600 | -- | 1750 | nm |
| Responsivity | R | $\lambda=1550\text{nm}$ | -- | 0.70 | -- | A/W |
| Quantum Efficiency | QE | $\lambda=1660\text{nm}$ | -- | 55 | -- | % |
| Total Capacitance | CT | VR=0V | -- | 60 | -- | pF |
| Rise/Fall Time (10 to 90%) | Tr, Tf | VR=10V, IF=20mA, RL=1KΩ | -- | -- | -- | uS |



Unit: mm, Tolerance: ±0.2

2019-01-15