

## 1. DESCRIPTION

MT3118 is a Short Wavelength Infrared (SWIR) detection sensor with I<sup>2</sup>C interface, integrating a receiver, transmitter, clock, on-chip e-fuse block, Digital Signal Processor (DSP), and control circuits. It can be pre-configured or programmed in real-time to meet different application requirements, delivering optimal performance on demand. The built-in comprehensive self-diagnostic mechanisms enhance device reliability and user safety. The on-chip e-fuse enables storage of system-level calibration data, while multiple operational modes support user cases such as single-shot and multiple-pulse sensing.

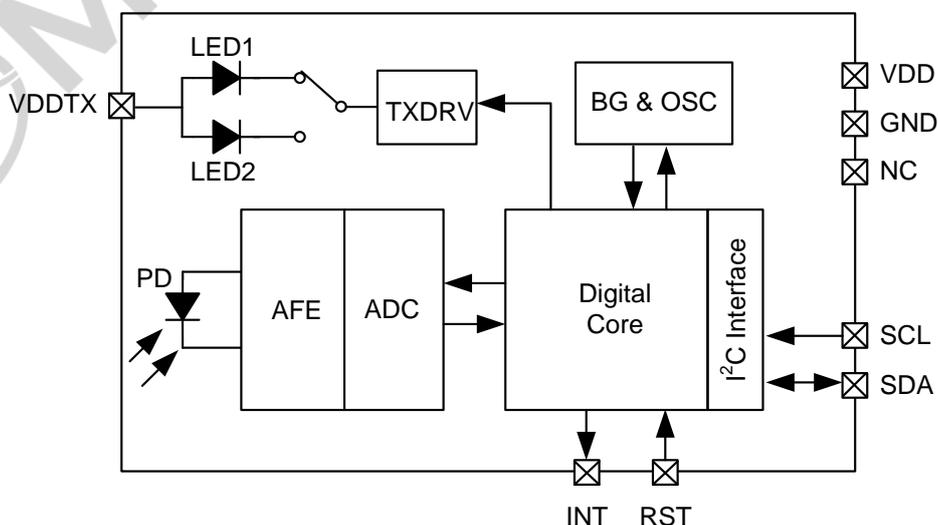
## 2. FEATURES

- High-sensitivity receiver with programmable gain
- High performance transmitter with programmable output current
- <2 μA ultra-low standby power consumption
- High-speed I<sup>2</sup>C interface (up to 1 Mbps)
- On-chip e-fuse for calibration data storage
- Supports multiple modes: single-shot, multi-pulse sensing, etc.
- Ambient light immunity with automatic cancellation
- Available in OLGA8 package (ROHS compliant)

## 3. APPLICATIONS

- Skin detector
- Earphones
- Wearable devices
- Other portable devices

## 4. FUNCTIONAL BLOCK DIAGRAM



## 5. TYPICAL APPLICATION CIRCUIT

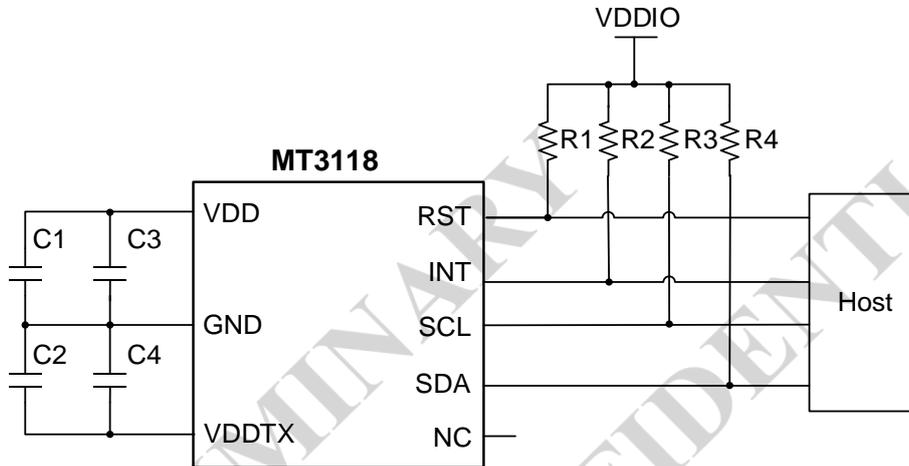


Table 1 Bill of Material

Component	Recommended Value	Condition/Range
C1, C2	4.7 $\mu$ F	Close to the sensor as much as possible.
C3, C4	0.1 $\mu$ F	Close to the sensor as much as possible.
R1, R2, R3, R4	1k $\Omega$ to 10k $\Omega$	

**Note:**

- ① I<sup>2</sup>C Pull-up resistors are as per standard protocol format.