

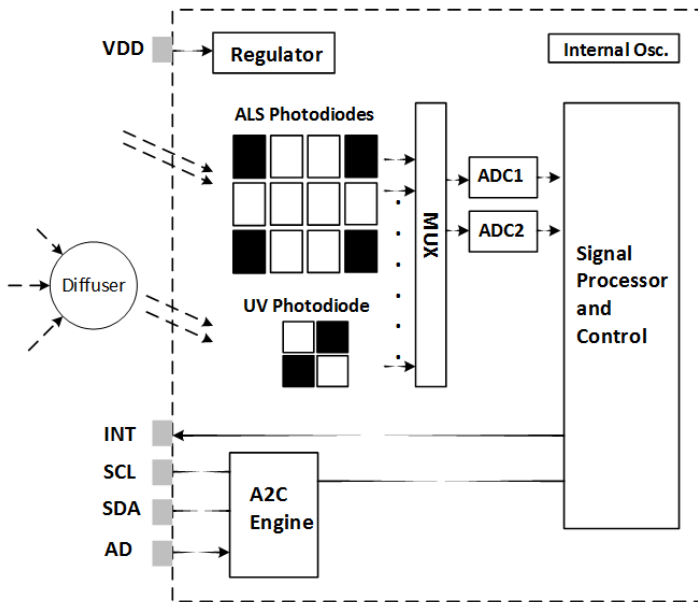
Si1133 Data Short

UV Index/Ambient Light Sensor IC with I²C Interface

The Si1133 is a UV Index Sensor and Ambient Light Sensor with I²C digital interface and programmable-event interrupt output. This sensor IC includes dual 23-bit analog-to-digital converters, integrated high-sensitivity array of UV, visible and infrared photodiodes, and digital signal processor. The Si1133 is provided in a 10-lead 2x2 mm DFN package and capable of operation from 1.62 to 3.6 V over the -40 to +85 °C temperature range.

Applications:

- Wearables
- Handsets
- Display backlighting control
- Consumer electronics



KEY FEATURES

- Optional high accuracy UV index sensor
 - Matches erythermal curve
- Ambient light sensor
 - <100 mlx resolution possible, allowing operation under dark glass
 - Up to 128 klx dynamic range possible across two ADC range settings
- Industry's lowest power consumption
 - 1.62 to 3.6 V supply voltage
 - <500 nA standby current
 - Internal and external wake support
 - Built-in voltage supply monitor and power-on reset controller

1. Si1133 Information

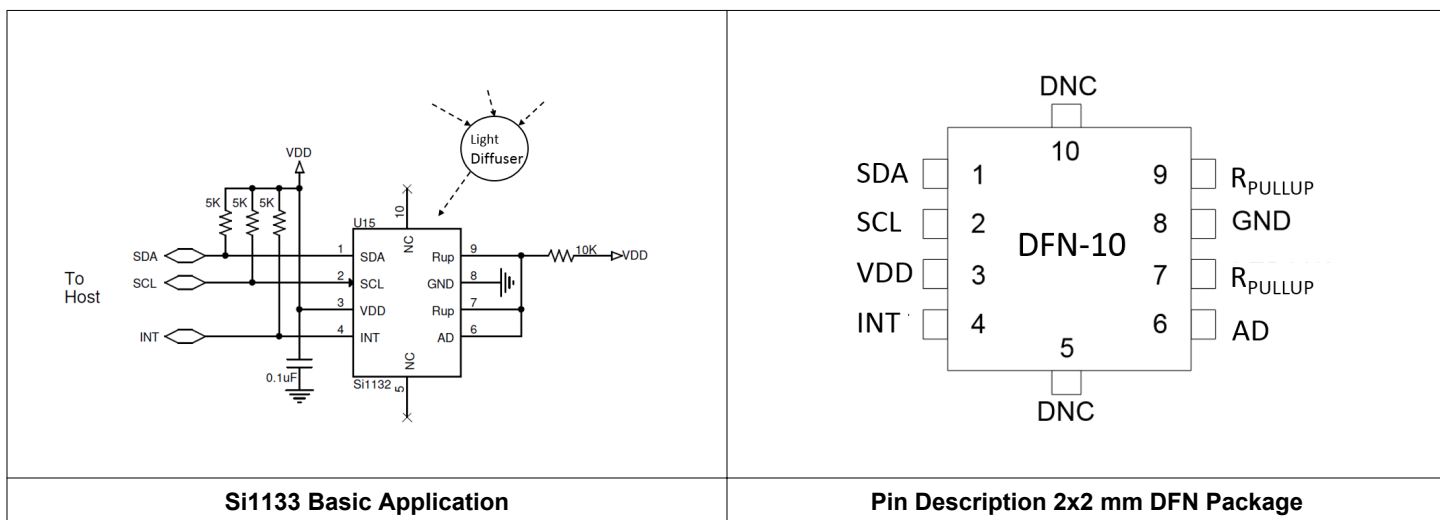


Table 1.1. Recommended Operating Conditions

| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|---------------------------------------|--|---|-----------------------|-----|-----------------------|------|
| V _{DD} Supply Voltage | V _{DD} | | 1.62 | — | 3.6 | V |
| V _{DD} OFF Supply Voltage | V _{DD_OFF} | OFF mode | -0.3 | — | 1.0 | V |
| V _{DD} Supply Ripple Voltage | | V _{DD} = 3.3 V 1 kHz–10 MHz | — | — | 50 | mVpp |
| Operating Temperature | T | | -40 | 25 | 85 | °C |
| SCL, SDA, Input High Logic Voltage | I ² C _{V_{IH}} | | V _{DD} × 0.7 | — | V _{DD} | V |
| SCL, SDA Input Low Logic Voltage | I ² C _{V_{IL}} | | 0 | — | V _{DD} × 0.3 | V |
| Start-Up Time | | V _{DD} above 1.62 V | 25 | — | — | ms |

Table 1.2. 2 x 2 mm DFN Ordering Guide

| Family | DFN OPNs | ALS (No Filter) | UV Index | 940 nm Filter | Proximity (# of LED Drivers) | HRM |
|--------|-----------------|--------------------|----------|---------------|---------------------------------|-----|
| Si113x | Si1133-AA00-GMR | Y | Y | — | — | — |



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