

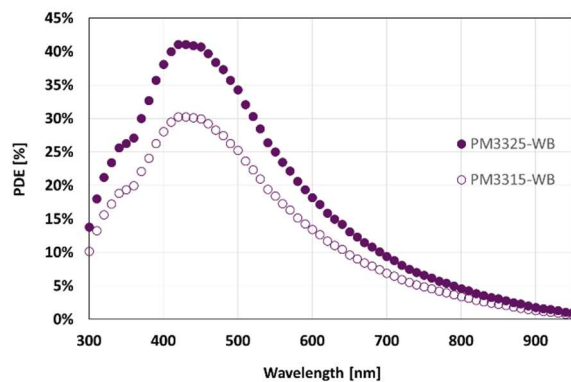
WB Series in new Wafer Level Package

Key Features Overview

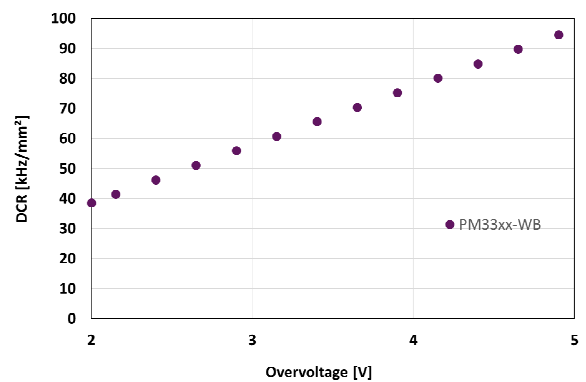
- High Photo Detection Efficiency
- Excellent Timing Properties
- Extremely low Temperature Coefficient
- Fastest Recovery Time
- Ultra high Cell Density and Dynamic Range
- Very low Dark Count Rate
- MSL-1 approved

1. SiPM Key Features

Absolute Photo Detection Efficiency at 5 V overvoltage



Dark Count Rate at 21°C



2. SiPM General Parameters

General Parameters

| Type | Active Area [mm ²] | Microcell Size [μm] | No. of Microcells | Package Dimensions [mm ³] | Order-Code |
|------|--------------------------------|---------------------|-------------------|---------------------------------------|--------------|
| PM33 | 3.0 x 3.0 | 15 | 38800 | 3.315 x 3.315 x 0.595 | PM3315-WB-A0 |
| | | 25 | 13920 | | PM3325-WB-A0 |

3. Main Characteristics

Main Characteristics

| Parameter | Typ. | Unit |
|--------------------------------------|---------------------|------|
| Breakdown Voltage (V_{BD}) | 27.1 | V |
| Recommended Overvoltage (V_{OV}) | 2.0 – 5.0 | V |
| Temperature Dependency of V_{BD} | 22.0 | mV/K |
| Temperature Dependency of Gain | 0.3% @ 5.0 V_{OV} | 1/K |

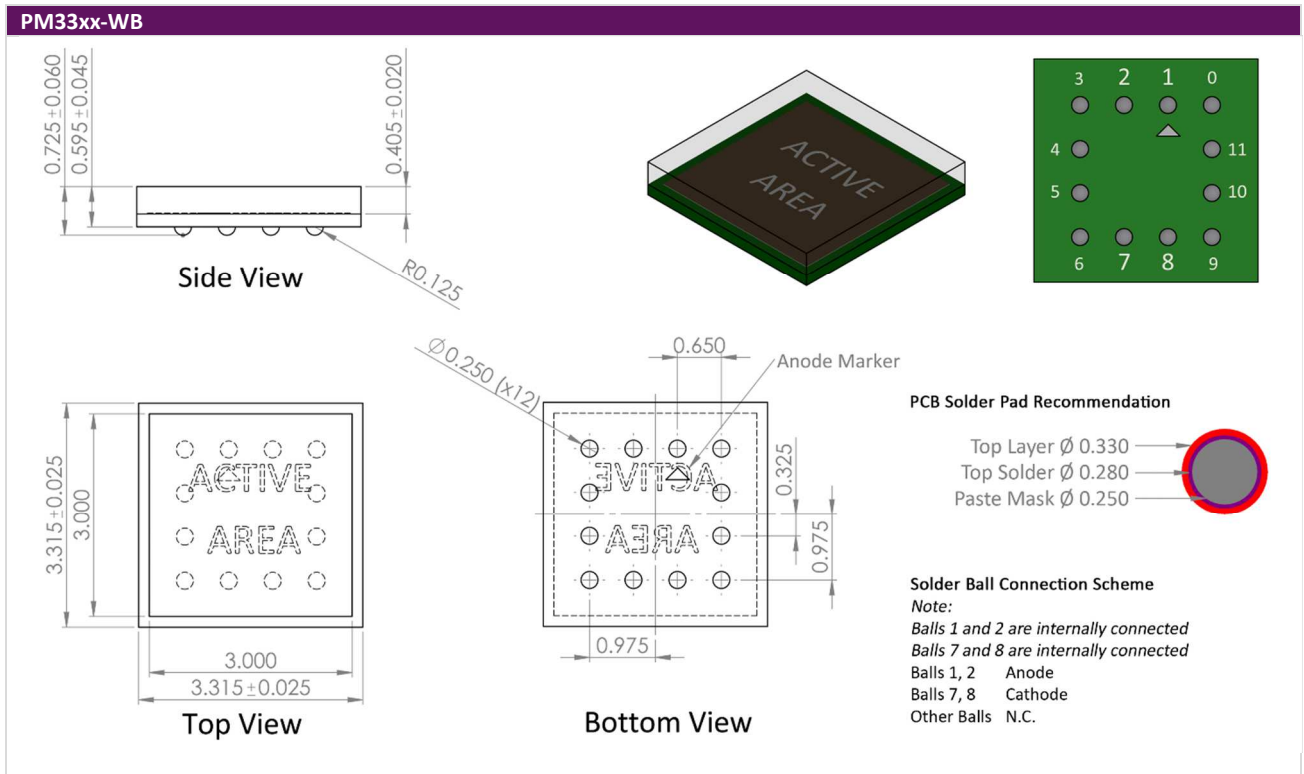
4. Performance Overview

| Performance Overview at 21°C | | | | | |
|--------------------------------------|------|---------------------|----------------------------|----------------------------|---------------------|
| Parameter | Type | Microcell Size [μm] | Typ. @ 2.5 V _{OV} | Typ. @ 5.0 V _{OV} | Unit |
| Photo Detection Efficiency at 430 nm | PM33 | 15 | 22 | 31 | % |
| | | 25 | 31 | 43 | |
| Dark Count Rate | PM33 | 15 | 50 | 100 | kHz/mm ² |
| | | 25 | | | |
| Crosstalk Probability* | PM33 | 15 | 7 | 20 | % |
| | | 25 | 15 | 35 | |
| Afterpulse Probability | PM33 | 15 | < 1 | | % |
| | | 25 | | | |
| Gain | PM33 | 15 | 0.30 | 0.60 | x 10 ⁶ |
| | | 25 | 0.87 | 1.74 | |
| Terminal Capacitance | PM33 | 15 | 750 | | pF |
| | | 25 | 800 | | |
| Recovery Time τ** | PM33 | 15 | 13 | | ns |
| | | 25 | 40 | | |
| Signal Rise Time | PM33 | 15 | < 1 | | ns |
| | | 25 | | | |

* including delayed crosstalk with a probability < 0.1%

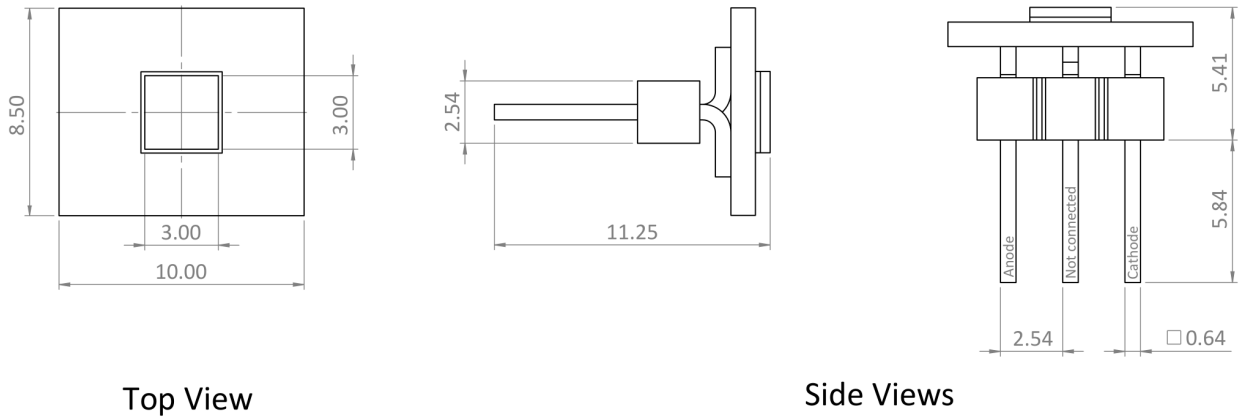
** measured at 5 Ω load by an exponential fit to the pulse decay

5. Technical Drawing and Footprint



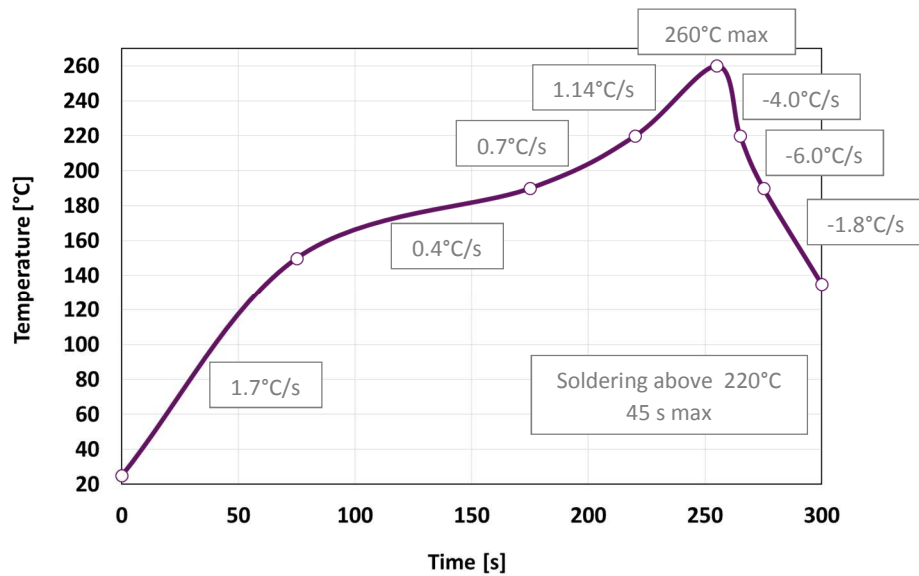
6. Pin Variant

PM33xx-WB preassembled on PCB with Pins



7. Reflow Solder Profile

Recommended Reflow Solder Profile*



* A lead-free no-clean solder paste Type 4 is recommended