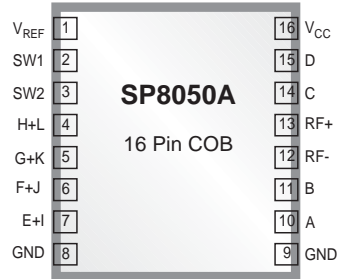


# 8 Channel, 150MHz Fully Integrated PDIC Receiver with Gain Switching

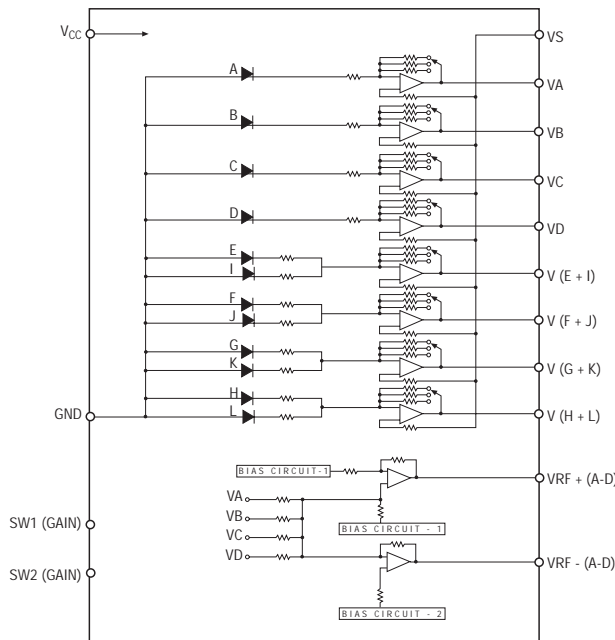
- Data channel bandwidth 150MHz
- Settling Time: 8ns to 1% for 1.5V step
- Three selectable Gain Settings
- Group Delay Error less than 2ns up to 70MHz
- Low Offset Drift of less than  $20\mu\text{V}/^\circ\text{C}$
- Low Offset Voltage of less than 10mV



## DESCRIPTION

The SP8050A is a high performance 8 channel PDIC with a fully integrated photo detector array ideally suited for high speed DVDRW, DVDRAM and CDRW systems. Responsivity is fully specified at wavelengths of 650nm and 780nm. The 8 channels consist of 4 high speed channels (A, B, C, D) for data detection as well as 4 tracking channels (E, F, G, H) for beam positioning requirements. Two additional outputs (RF+ and RF-) representing the sums of the high speed channels are also provided.

The SP8050A is manufactured with an advanced, fully complementary proprietary BiCMOS process that enables integration of on-board multiple photo detector arrays

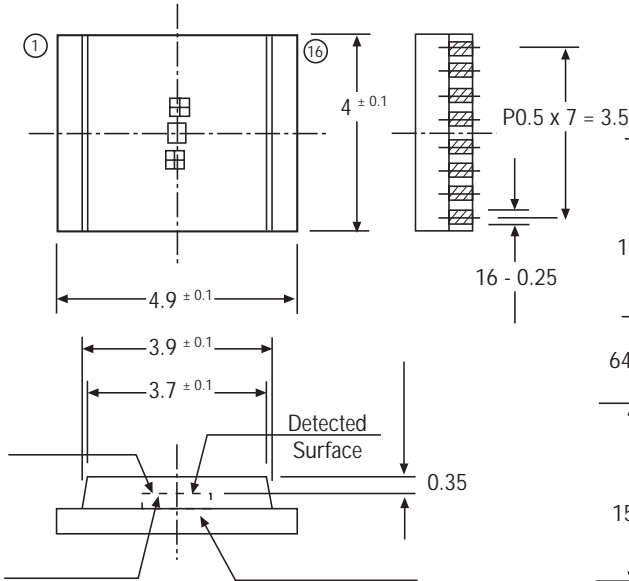


SP8050A Functional Diagram

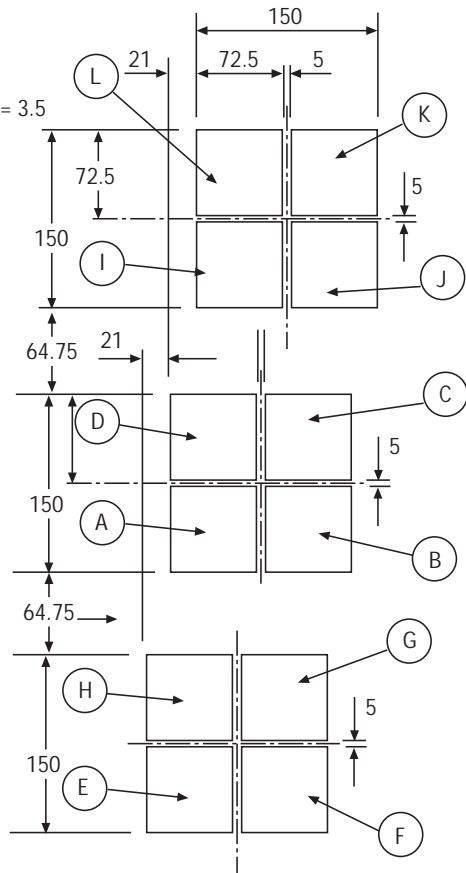
| <b>PIN NUMBER</b> | <b>NAME</b> | <b>DESCRIPTION</b>    |
|-------------------|-------------|-----------------------|
| 1                 | $V_{REF}$   | Reference Voltage     |
| 2                 | SW1         | Gain Select 1         |
| 3                 | SW2         | Gain Select 2         |
| 4                 | H+L         | Tracking Channel Sum  |
| 5                 | G+K         | Tracking Channel Sum  |
| 6                 | F+J         | Tracking Channel Sum  |
| 7                 | E+I         | Tracking Channel Sum  |
| 8, 9              | GND         | Power Ground          |
| 10                | A           | Data Channel          |
| 11                | B           | Data Channel          |
| 12                | RF-         | RF Sum Minus (A to D) |
| 13                | RF+         | RF Sum Plus (A to D)  |
| 14                | C           | Data Channel          |
| 15                | D           | Data Channel          |
| 16                | $V_{CC}$    | Supply Voltage        |

# PDIC (8ch + RF + GAIN - SW) (12-divided detector)

Package Size (Unit: mm)



Package Size (Unit: μm)



| PIN NUMBER | NAME             |
|------------|------------------|
| 1          | V <sub>REF</sub> |
| 2          | SW1              |
| 3          | SW2              |
| 4          | H+L              |
| 5          | G+K              |
| 6          | F+J              |
| 7          | E+I              |
| 8,9        | GND              |
| 10         | A                |
| 11         | B                |
| 12         | RF-              |
| 13         | RF+              |
| 14         | C                |
| 15         | D                |
| 16         | V <sub>CC</sub>  |

## ORDERING INFORMATION

**PART NUMBER**

SP8050A .....

**TEMPERATURE RANGE**

-30°C to +80°C .....

**PACKAGE**

16 lead COB



SIGNAL PROCESSING EXCELLENCE

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