

Optical Pickup Chipset with CD/DVD Recording Photodetector IC (PDIC)
Supports High-Speed Writing to both CD and DVD Media

CXA2677GA

CXA2676GA

The signal processing required for DVD is far more complex than that for CD.

Sony has now developed an optical pickup chipset, the CXA2677GA and CXA2676GA, that is appropriate for this complex signal processing.

These devices adopt a newly-developed LGA type small package and can contribute to the development of ultrathin pickups.

CXA2677GA

RF/Servo PDIC

- Supports high-speed CD/DVD write operations (CD-R: $\times 52$ -speed, DVD-R: $\times 8$ -speed)
- WPP1 (A + B) and WPP2 (C + D) outputs, which are optimal for DVD address bit detection
- Band limiter function for write operations
- Eight-section photodiode for DPP
- 16-pin LGA COB small package

CXA2676GA

Laser front monitor PDIC

- Two-channel structure (Vin1, Vin2)
- Chip capacitors (1005) included
- 8-pin LGA COB small package

■ CXA2677GA

The CXA2677GA is a photodetector IC (PDIC) that was developed as the photodetector element for optical pickups used in DVD $\pm R/RW$ drives. It features two additional pins: WPP1 (A + B) and WPP2 (C + D). This allows the generation of the WRF signal used in earlier (CXA2660N) CD-R/RW systems with the WPP1 + WPP2 signal and the detection of address bit signal unique to DVD $\pm R/RW$ with the WPP1 – WPP2 signal. Also, it adopts a three-stage structure with a write mode and two read modes with high gain and

low gain mode settings.

The band limiter function used in write mode provides an average value signal with high precision.

■ CXA2676GA

The CXA2676GA adopts a two-channel structure to allow the power of the CD laser and the DVD laser to be set individually. It achieves fast response characteristics, namely a slew rate of 250 V/ μ s and a settling time of 7 ns. These characteristics are adequate to support write speeds of $\times 52$ for CD-R and $\times 8$ for DVD-R.

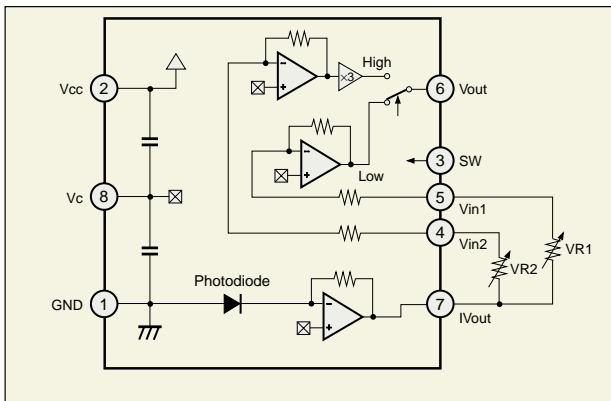
■ LGA COB (chip on board) Small Package

To increase the number of pins while retaining the package dimensions (4.5 \times 3.2 mm) of the earlier chip on board (COB) package, Sony developed a new land grid array (LGA) package that positions the contacts in a two-dimensional array on the reverse side of the package. This allows these devices to provide increased functionality without increasing the mounting area. This package is optimal for developing ultrathin pickups, that is, pickups for use in 9.5 mm ultrathin drives.

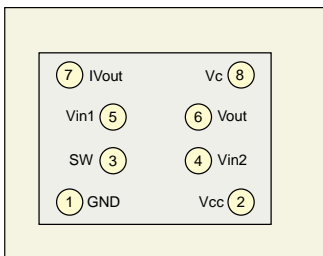
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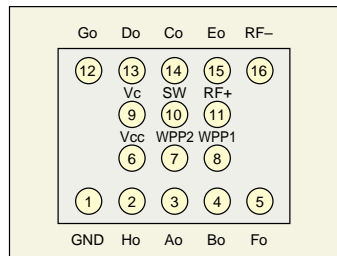
Despite our busy schedule, we are confident that we succeeded in responding to our customers' input to the greatest extent possible in the development of these new products. Even though the design period was short, we put careful detailed attention into every single element in these products. We are sure our customers will be fully satisfied. It's good to be able to relax again now that this project is done.



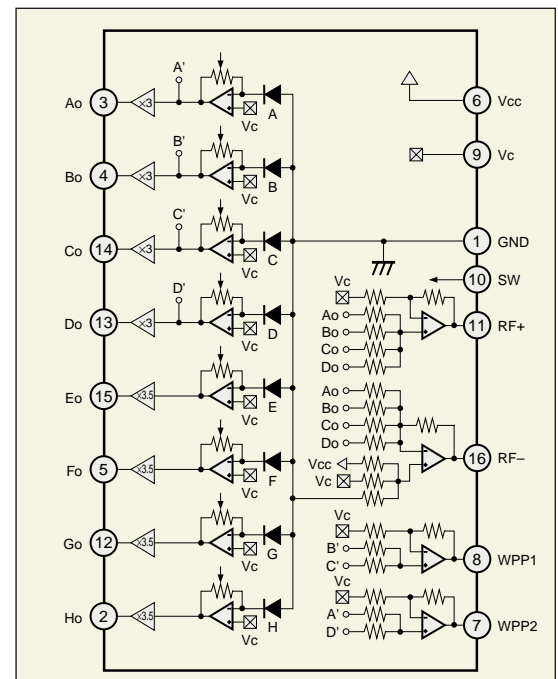
■ Figure 1 CXA2676GA Block Diagram



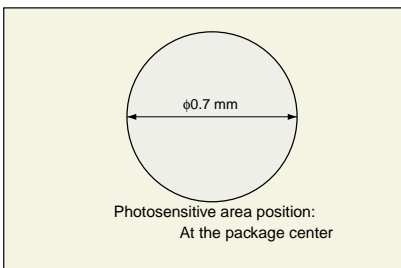
■ Figure 3 CXA2676GA Pin Configuration



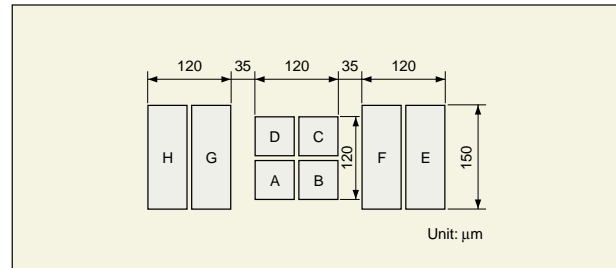
■ Figure 4 CXA2677GA Pin Configuration



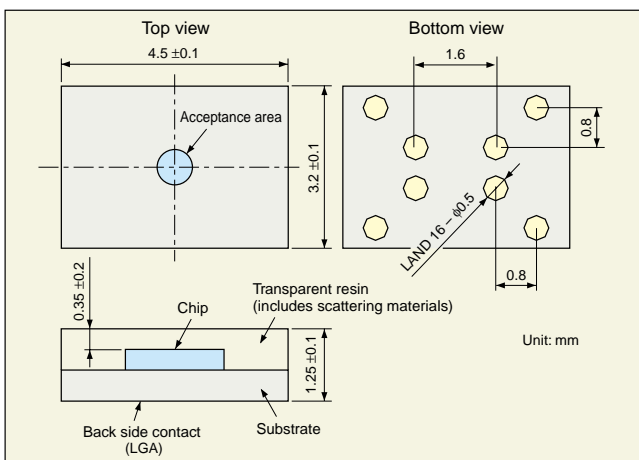
■ Figure 2 CXA2677GA Block Diagram



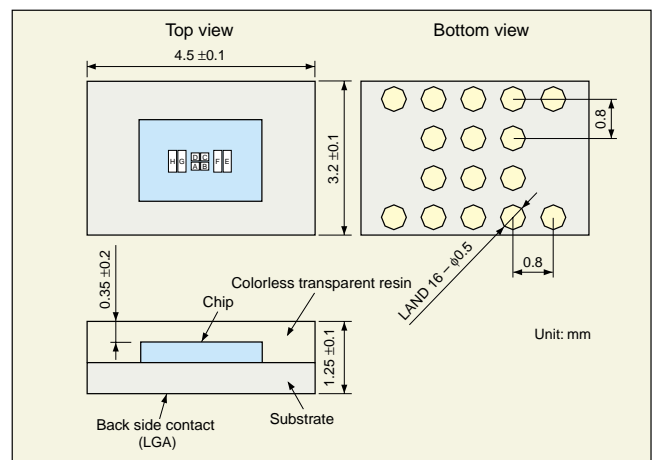
■ Figure 5 CXA2676GA Acceptance Pattern Dimensions



■ Figure 6 CXA2677GA Acceptance Pattern Dimensions



■ Figure 7 CXA2676GA Package Dimensions



■ Figure 8 CXA2677GA Package Dimensions