

Optical Pickup Chipset Achieves the Industry's Fastest CD-R/RW Write Speed

# CXA2660N/CXA2663N CXA2652EM/AEM/BEM

The increases in CD-R write speeds have been phenomenal and currently rival playback speeds.

Sony has now developed both a photodetector IC (PDIC) that achieves the industry's fastest write speed and an IC that monitors the laser power during write operations by taking maximum advantage of the process technologies of which Sony is so proud.

These ICs, which provide the top performance level in the industry, enable the implementation of CD-R/RW optical pickups with the industry's highest write speed.

## CXA2660N/CXA2663N

RF/Servo PDIC

- Supports high-speed CD-R writing
- Built-in WRF output function: CXA2660N
- Built-in gain switching function (8 dB): CXA2663N
- Miniature transparent 14-pin molded package (Straight lead and surface mounting packages)

## CXA2652EM/AEM/BEM

Laser Front Monitor

- Built-in chip capacitors (1005)
- Photodetectors in a wide range of sizes
- Miniature 6-pin side through hole COB package

### ■ CXA2660N

The CXA2660N is a photodetector IC (PDIC) that detects the light reflected from the disc. This device provides pulse response characteristics (see table 1) that allow applications to achieve high-speed write operations. One feature of this device is that in addition to an RRF output pin used for RD signal detection during playback, it also provides a WRF output pin used for laser power detection during writing. To improve the FPC (flexible printed circuit) transmission characteristics, this device is provided with a limiter function for amplitude limitation for each servo signal. It is provided in a miniature transparent 14-pin molded package (in

both straight lead and surface mounting versions) and has a structure that can withstand reflow soldering (under stipulated conditions).

### ■ CXA2663N

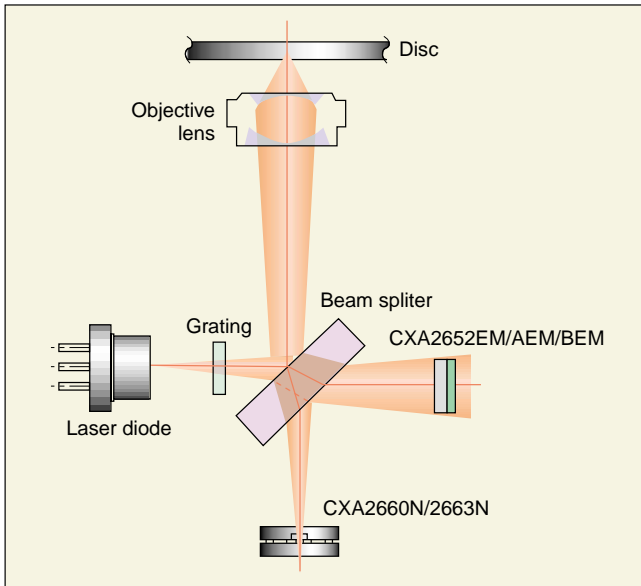
Like the CXA2660N, the CXA2663N is a PDIC that detects light reflected from the disc and provides pulse response characteristics (see table 1) that allow applications to achieve high-speed write operations. This device inherits the gain switching function from the CXA2636N and CXA2637N, and can both prevent output voltage saturation during high-speed writing as well as prevent signal-to-noise ratio degradation in playback mode. This device is also provided in a miniature transparent 14-pin molded package (in both straight lead and surface mounting versions) and has a structure that can withstand reflow soldering (under stipulated conditions).

### ■ CXA2652EM/AEM/BEM

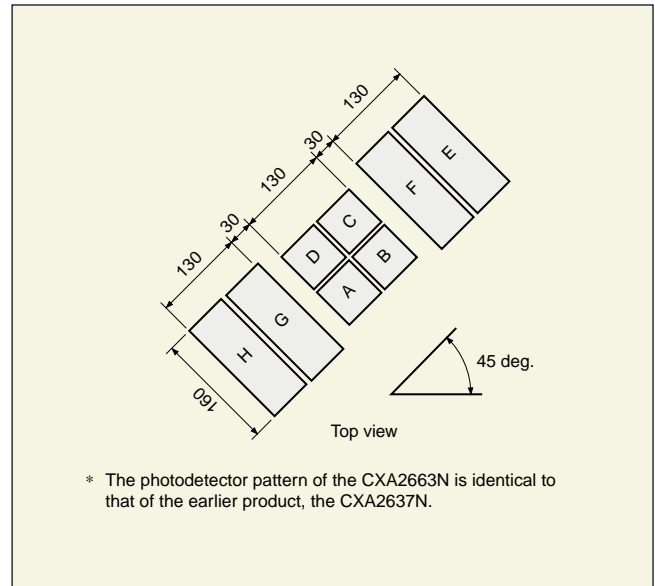
The CXA2652 Series products are photodetectors (front monitors) that are used to monitor the laser power during write operations. Since these devices include a built-in I-V amplifier, they have a low output impedance and provide a stable output. They are provided in a 6-pin side through hole miniature COB (chip-on-board) package (3.2 mm × 4.5 mm). A chip capacitor (1005) is included within the package making these devices optimal for optical pickups, which have limited mounting space.

## V O I C E

We had to work around the clock for each IC in this chip set to create this truly "sleepless" optical pickup chip set, which supports the industry's fastest CD-R drives. We reviewed Sony's previously developed technologies down to the last detail to achieve the highest speeds possible. I strongly recommend that you put this chipset in your next product's "laser spotlight."

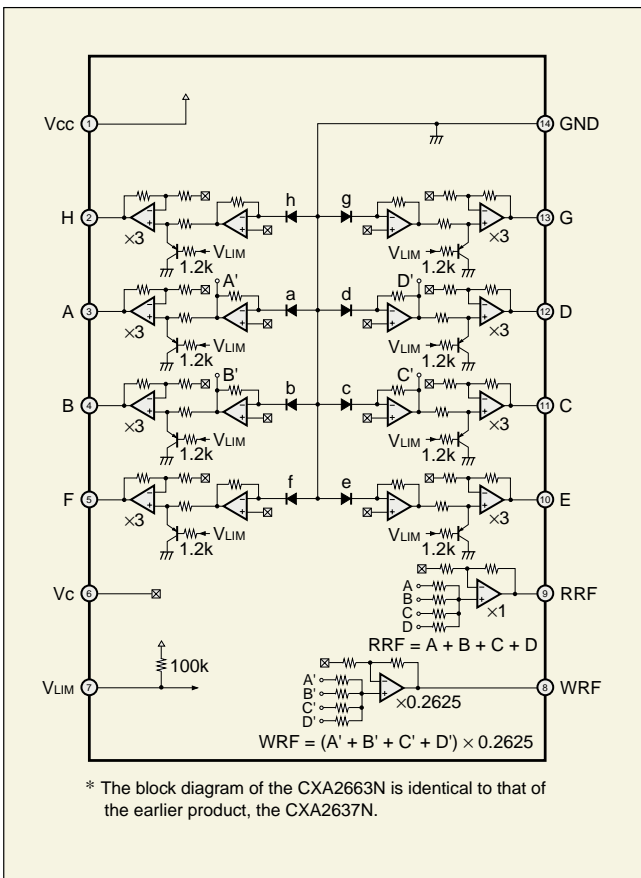


■ Figure 1 Optical Pickup Structure



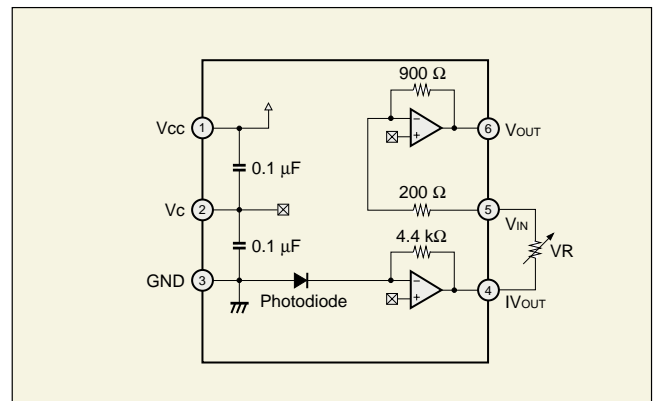
\* The photodetector pattern of the CXA2663N is identical to that of the earlier product, the CXA2637N.

■ Figure 3 CXA2660N Photodetector Pattern Dimensions



\* The block diagram of the CXA2663N is identical to that of the earlier product, the CXA2637N.

■ Figure 2 CXA2660N Block Diagram



■ Figure 4 CXA2652EN/AEN/BEN Block Diagram

■ Table 1 CXA2660N and CXA2663N Pulse Response Characteristics

	Slew rate	Settling
CXA2660N	400 V/μs	12 ns for a 1.9 V amplitude
CXA2663N	350 V/μs	10 ns for a 1.5 V amplitude

■ Table 2 CXA2652EN/AEN/BEN Photodetector Pattern Dimensions (diameter)

CXA2652EM	0.70 mm
CXA2652AEM	0.36 mm
CXA2652BEM	0.47 mm