Leading China-Based Analog IC Provider

BCD Overview

Founded in 2000, BCD is a leading China-based provider of analog IC's, specializing in power management to the large, expanding Asian electronics industry. As revenues rose over the last decade, BCD expanded IC offerings beyond standard linear products and into higher performance solutions. To deliver greater volumes of more advanced devices, it added capacity while enhancing process capabilities with new BiCMOS and BCDMOS technologies.

With in-house design and manufacturing capabilities in China, BCD combines analog semiconductor expertise and proprietary process technologies, cost effective manufacturing and local sales and support to improve the quality and performance of products, lower costs and accelerate time-to-market.

BCD devices are incorporated into products sold by leading motherboard, LCD television manufacturers, as well as into chargers sold by the world's leading mobile phone manufacturers.

BCDMain Office in China

Fast Facts

Location:	Shanghai, China
Fabs:	Fab One, Fab Two
Employees:	1,287
Major Markets:	Power analog IC's for computing, consumer & communications
Processes Run:	Bipolar, CMOS, BiCMOS, BCDMOS
Parametric Testers:	Reedholm (8)

The China Advantage

Asia is the largest market for semiconductor consumption. There are very few analog providers and even fewer power management IC vendors in the region. OEM's and ODM's frequently look to BCD to provide system-level insight as well as design and technical support to reduce time-to-market.

The Fab Is a Competitive Strength

The design and fabrication of power management IC's present significant technical challenges for semiconductor suppliers. The BCD manufacturing infrastructure enables it to develop specialized processes built on bipolar, CMOS, BiCMOS and BCDMOS technologies.

BCD IC's often operate in rigorous environments while providing high voltages and high currents. They must operate with low error levels while delivering and managing power across an electronic device. By maintaining control over these process technologies, BCD is able to efficiently optimize product performance and reduce production costs.

Having a fab in China provides BCD with production flexibility and allows it to avoid the additional layer of markup costs that fabless and other analog vendors face.

Parametric Test at BCD

BCD uses Reedholm systems for PCM test. Each system is interfaced to EG2001X probers and used 24/7 for production testing of process control monitors for CMOS, DMOS, and bipolar processes. The Reedholm systems are installed in a lab inside a clean room. Access requires wearing a full bunny suit, boots, facemask, and gloves. The systems are networked to a file server, which contains the test plans and probing patterns.

One of the Reedholm Systems at BCD

Typically, 100 to 150 parameters per site are tested, with roughly 50% of the parameters used for pass/fail criteria. For the most complex BiCMOS processes, 200 to 250 parameters are monitored, of which 80 to 100 are critical. The test library contains nearly 1,000 unique devices.

The parametric test function is one of the responsibilities of Qiu Bin, a Senior Manager of Process Integration. Over the last decade, BCD engineers have seen lots of changes and anticipate new challenges on the horizon for parametric test.

Qiu Bin, Sr. Manager

25% Gain While Optimizing Results

"One nice improvement has been how friendly the software interface has become. Engineering tools and documentation delivered with software enables BCD to effectively ramp up new processes quickly," according to Qiu Bin.

That software helps address the continuing challenge of achieving stable, precise, and accurate results. BCD and Reedholm engineers work together to speed up testing, while reducing the variability. At one installation, a representative set of tests was worked on without adversely affecting test results or repeatability of the measurements. The purpose was to identify how individual tests could be optimized for throughput, accuracy, and repeatability. When finished, a 25% speed gain was achieved.

These gains made Reedholm significantly faster than alternative systems without sacrificing the accurate, stable results that BCD engineers need to make informed process control decisions in the fab.