



# Alpha Circuit Corporation

*Transition to a new Future*



# Former SEC Management

- Yash Sutariya – V.P. Corporation Strategy
  - Responsibilities Included:
    - Sales
    - Service
    - QC Manager
    - Technology Development Group
    - High Reliability Qualification / Process Maintenance
    - Marketing



# Former SEC Management

- Yash Sutariya – V.P. Corporation Strategy
  - Department Responsibilities Included:
    - Drilling
      - Machines
      - Drill Bits
    - Soldermask
      - Qualification
      - Process Development
    - Multilayer Lamination – Recipe Development
    - QC Troubleshooting

# Company Profile

- Financially Stable
- Established: 1981
- 45,000 sq ft Manufacturing Facility
- 45 employees



# Advanced Technologies

- Now merged with Sister Company Saturn Flex Systems, we can offer not only standard technologies , but an entire breadth of PCB technologies:
  - Fine Line and Spacing
  - Microelectronics (sub-3 mils)
  - Controlled Impedance
  - Heavy Copper
  - PTFE / Hybrid Technologies
  - RF-Microwave Boards
  - Flex / Rigid-Flex PCBs
  - Buried Capacitance / Resistance
  - Aluminum / Metal Core
  - Via-in-Pad Technology
  - Open Face / Internal Cavity
  - Blind / Buried Vias

# Capabilities

	Alpha Circuit	Saturn Flex
<b>Layer Count</b>	1 - 24 +	1 – 30 +
<b>Largest Panel Size:</b>	18" x 24"	18" x 24" std; 30" x 30" special
<b>Smallest Circuit Width/Spacing:</b>	4mil, 3 mil proto	2 mil medium volume production
<b>Material Thickness:</b>	3mil; 200mil	1 mil; 350 mil
<b>Materials:</b>	FR-4; High Td; Teflon; Polyimide; Metal Heat Sinks	Polyimide Flex/Rigid; Rogers; Taconic
<b>Smallest Mech. Drilled Hole</b>	6 mils	3 mils
<b>Hole Size / Dimensional Tolerances:</b>	3mil / 2mil	3mil / 2mil
<b>Finishes:</b>	HASL, Immersion Silver/Gold, Lead-Free HASL	

# Production Capacities

## QUICK-TURN PROTOTYPE

LAYERS	TURNAROUND			
	24 Hrs	2 Days	3 Days	4 Days
2 Layer	50	150	500	1,000
4 Layer	25	40	100	500
6 Layer	-	40	100	300
8 Layer	-	25	50	100

## FAST-TURN PRODUCTION

LAYERS	TURNAROUND		
	5 Days	10 Days	15 Days
2 Layer	1,500	5,000	10,000
4 Layer	1,000	2,500	5,000
6 Layer	500	2,000	5,000
8 Layer	300	1,000	3,000

*Quantities in 18"x24" panels*

### DESIGN VALIDATION

Prototypes employ production processes--test results indicative of production product

### OFFSHORE CONTINGENCY PLANNING

One of the last remaining NA PCB Fabricators capable of quick-turn volume production

# Quality - Current

- TS16949



- ISO9000



- ITAR



- UL





# Quality - Planned

- AS9100 Rev C



- (Both have common requirements so will pursue concurrently)

- Mil-PRF-31032

- Est. Fall 2013

# Systems Management - Current

## **Bacon ERP**

- Quote Database
- Process Flow Management
- Traveler Creation
- ISO Document Control
- PM / Calibration

# Systems Management - Planned

## Sage MAS 500 ERP

### Full lot traceability to:

- Operator
- Machine #
- Materials Lot Information
- Thermal Press Profiles
- 100% Electronic and Real Time Records

## CEBOS MQ1 QMS

Document Mgt for QC certs / systems

Automated Preventive Maintenance

Electronic Form Approval



# Continuing Education

## WEBINARS

Pb-free Cost Reduction  
MCPCBs for LEDs

*Planned for 2013:*

*Bridging the Gap between Design and Fabrication*

## WHITE PAPERS

Basics of (PCB) Thermal Management for LED Applications

## RESOURCE CENTERS

- Lead-free
- Metal Core / LED PCB
- PCB Design Tools
- IPC Standards
- Automotive Electronics
- Clean / Alternative Energy

## ARTICLES

Built Board Tough: Budget DC Copper Plating for High Reliability and Increased Capabilities  
PCB Magazine January 2013

Domestic Fabricators: Round 10 and Still Standing!  
PCB Magazine December 2012

PCB Reliability: Cleaning Up Your Act  
SMT Magazine September 2012

Built Board Tough  
PCB Magazine July 2012

Alternative Materials for LED PCBs  
SMT Magazine June 2012

Latest on Lead-Free Capable Materials  
PCB Magazine February 2012

Strategies for Beating the Heat: Updates on Thermal Management for PCBs  
SMT Magazine July 2011

Materials for High Reliability Applications  
PCB Magazine June 2011

Latest on Lead-Free Capable Materials  
I-Connect007 February 2011



# Value-Add Overseas Sourcing

- High Quality and On Time Delivery
  - Pre-engineering performed at domestic facility
    - Manufacturability
    - Panelization
- First Article inspection on all new lots
- Inventory up to four weeks domestically
- Personnel in China supervise all orders at manufacturing level

# Offshore Sourcing – Contingency Planning

- In the event of a supply chain disruption, we provide insurance that brokers, and even most North America PCB houses, cannot.
- Domestic facility is fully capable to backstop overseas production disruptions

# Alpha

# vs.

# Industry

**Production/TS16949 Certified Domestic Facility as backup**

**Many don't even have a facility, just an office and/or warehouse. Those with facilities are not production/TS16949 certified.**

We audit and approve our suppliers in person per TS16949 audit procedures

Many have not even visited their suppliers. Those that have aren't certified themselves to audit to particular standards

Offshore product shipped to customers under our Quality flag

The vast majority of our competitors lack this certification

All product is automotive certified, regardless of end use

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Alpha guarantees all offshore product with our unmatched 5x guarantee

No published guarantee matches Alpha's

Alpha has personnel on-site in Asia to oversee our and our customers' interests

Majority do not have any staff whatsoever in Asia

Alpha performs all engineering work domestically prior to sending files for offshore manufacture. This ensures customers' requirements are properly communicated .

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Thank You

For your time and we hope you  
consider partnering with  
Alpha Circuit Corporation

