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# Full Custom Analog ASIC Capabilities

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Calogic designs and manufactures Bipolar Junction Isolated (JI) and Dielectrically Isolated (DI) products. SPICE models, layout, DRC and ERC are available. These processes are executed in Calogic's state of the art wafer fabrication facility located in Fremont, California.

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## FEATURES OF CALOGIC'S CUSTOM CAPABILITIES INCLUDE:

### J1 LINEAR BIPOLAR PROCESS

#### FEATURES

- 26V Process
- Programmable components can be configured as either NPN or PNP transistors, using only a single layer of metal.
- Layouts can be based on the total number of transistors required, without regard to polarity.
- There are upwards of 30-50% more components per unit area than on so-called "master" chips.
- Mixed analog/digital designs are achievable.
- Completed layouts can be captured and reused - at other locations on the same chip, or on other chips in the family.

### DI COMPLEMENTARY BIPOLAR PROCESS

#### FEATURES

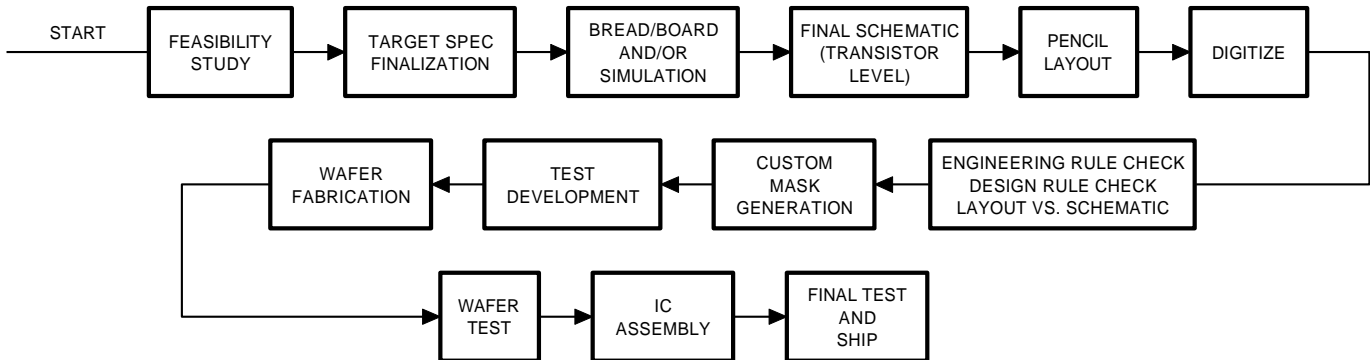
- Cell-Based Structure
- 90V Process
- Complementary Bipolar NPN and PNP Transistors
- Dielectrically-Isolated Active and Passive Components
- Poly-Silicon Resistors - for Accuracy and Matching
- Optional Silicon-Chromium Thin-Film Resistors - for Added Precision
- Optional On-Chip MOS Capacitors

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## CALOGIC OFFERS:

- Mixed Analog/Digital Design Capability
- Customer Design or Calogic Design or a Joint Project
- Development Between Customer's and Calogic's Engineering
- Quick Turn-Around
- Silicon-Efficiency
- Software Tools Support the Design Effort
- Kit Parts Available
- SPICE Models Available

## TYPICAL PROJECT FLOW



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## Q: WHAT KIND OF CIRCUITS CAN BE IMPLEMENTED ON CUSTOM AND SEMI-CUSTOM BIPOLAR ARRAYS?

- A:**
- Current Sources
  - Amplifiers
  - Operational Amplifiers
  - Comparators
  - Voltage Regulators
  - Voltage-to-Current Converters
  - Translinear Circuits
  - Gain Control/Variable Impedance
  - Flip Flops, Gates, and Schmitt Triggers
  - Oscillators and Timers
  - Phase Detectors and Phase-Locked Loops
  - Sample and Hold, Clamp, and Signal Switching Circuits
  - Rectifiers, Detectors, and D.C. Restorers
  - Output Stages
  - Low Voltage Circuits
  - Miscellaneous Circuits