Alpha Unveils InP HBT Process

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Alpha Industries Inc. today introduced its advanced indium phosphide- (InP) based heterojunction bipolar transistor (HBT) process targeted at high-performance wireless and optical applications.

The Woburn, Mass.-based company (nasdaq: AHAA) said InP’s thermal properties, threshold voltages and frequency response rate deliver better performance than competing technologies. InP also enables the integration of optical devices and electronic components, the company said.

“InP extends our semiconductor process technology arsenal, which already includes InGaP HBT, GaAs MESFET, GaAs PHEMT, silicon and ceramics,” said Ding Day, Alpha’s vice president of process development, in a statement. “This enables us to manufacture devices with $f_t$ (current gain cutoff frequency) and $f_{max}$ (maximum frequency of oscillation) above 120GHz, performance that is essential for high-speed data applications.”

Alpha said its InP process uses the automated production line at its Sunnyvale, Calif., wafer fab. Among the first products Alpha intends to develop with its InP HBT technology are ICs for the transmission and receive path in 40 Gbit/sec networks.

“InP technology pushes the envelope beyond our current InGaP (indium gallium phosphide) capabilities,” said Lj Ristic, Alpha’s chief technology officer, in a statement. “We believe that analog circuits for OC-768 fiber-optics, extremely high-speed Ethernet and other high performance wireless applications will be the sweet spot for InP technology, enabling Alpha to effectively penetrate these emerging markets.”