# Abstracts

## Application of digital PGA technology to 20 GHz microwave packages

*Hongwei Liang, J. Laskar, H. Barnes and D. Estreich. "Application of digital PGA technology to 20 GHz microwave packages." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 1051-1054.*

We apply for the first time a low cost microwave pin grid array (PGA) packaging technology for 20 GHz applications. While PGA is proven to be a very mature and reliable technology in digital systems, it provides several advantages over traditional deep well packages for microcircuits and multi-chip assemblies which use horizontal glass-to-metal seals. This paper presents the design of a PGA package with a novel right angle RF interconnect. A low cost soldered pin interconnect produces a transition with better than 20 dB return loss to 8 GHz. Full wave analysis and time-domain reflectometry (TDR) measurement are combined to demonstrate that a new bonded transition can suppress the parasitic capacitance associated with the soldered transition. The measurement data shows that the second generation transition using a bonded interconnect has a 20 dB return loss to 20 GHz.

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