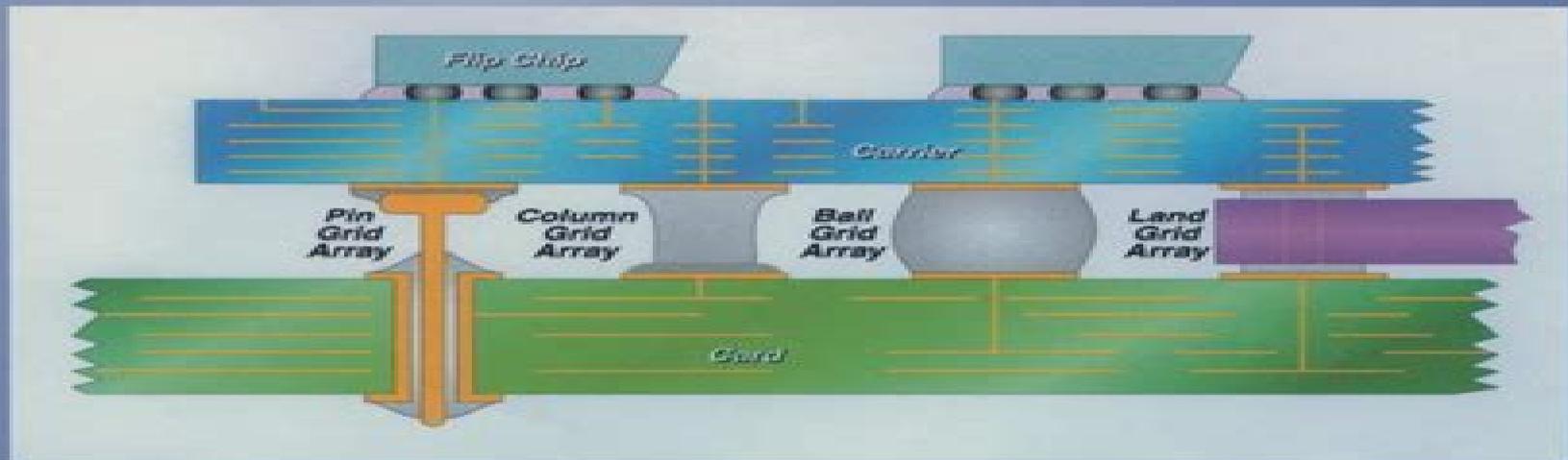


AREA ARRAY INTERCONNECTION HANDBOOK



*Karl Puttlitz
Paul A. Totta*

Kluwer Academic Publishers

Area Array Interconnection Handbook

Ken Gilleo



Area Array Interconnection Handbook:

Area Array Interconnection Handbook Karl J. Puttlitz, Paul A. Totta, 2012-12-06 Microelectronic packaging has been recognized as an important enabler for the solid state revolution in electronics which we have witnessed in the last third of the twentieth century Packaging has provided the necessary external wiring and interconnection capability for transistors and integrated circuits while they have gone through their own spectacular revolution from discrete device to gigascale integration At IBM we are proud to have created the initial simple concept of flip chip with solder bump connections at a time when a better way was needed to boost the reliability and improve the manufacturability of semiconductors The basic design which was chosen for SLT Solid Logic Technology in the 1960s was easily extended to integrated circuits in the 70s and VLSI in the 80s and 90s Three I O bumps have grown to 3000 with even more anticipated for the future The package families have evolved from thick film SLT to thin film metallized ceramic to co fired multi layer ceramic A later family of ceramics with matching expansivity to silicon and copper internal wiring was developed as a predecessor of the chip interconnection revolution in copper multilevel submicron wiring Powerful server packages have been developed in which the combined chip and package copper wiring exceeds a kilometer All of this was achieved with the constant objective of minimizing circuit delays through short efficient interconnects *Electronic Enclosures, Housings and Packages* Frank Suli, 2018-11-01 *Electronic Enclosures Housings and Packages* considers the problem of heat management for electronics from an encasement perspective It addresses enclosures and their applications for industrial electronics as well as LED lighting solutions for stationary and mobile markets The book introduces fundamental concepts and defines dimensions of success in electrical enclosures Other chapters discuss environmental considerations shielding standardization materials selection thermal management product design principles manufacturing techniques and sustainability Final chapters focus on business fundamentals by outlining successful technical propositions and potential future directions [Electronic Packaging and Interconnection Handbook](#) Charles A. Harper, 2000 Covering every aspect of electronic packaging from development and design to manufacturing facilities and testing *Electronic Packaging and Interconnection Handbook* Third Edition continues to be the standard reference in its field Here in this single information packed resource are all the data and guidelines you need for all types and levels of electronic packages interconnection technologies and electronic systems No other book treats all of the subjects covered in this handbook in such an integrated and inter related manner a treatment designed to help you achieve a more reliable more manufacturable and more cost effective electronic package Here s everything you need to know about materials thermal management mechanical and thermomechanical stress behavior wiring and cabling soldering and solder technology integrated circuit packaging surface mount technologies rigid and flexible printed wiring boards And with over 60% new material this third edition brings you thoroughly up to speed on a new generation of packaging technologies single chip packaging ball gridarrays chip scale packaging low cost flip chip technologies direct chip attach and more

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Multichip Module Technology Handbook Philip E. Garrou,Iwona Turlik,1998 MCMs are electronic components that house multiple integrated circuits ICs upon a single chip

Their use in design allow systems that are faster hotter and more reliable than those built with standalone ICs More and more the speed needs of electronic systems require MCMs This comprehensive handbook aims to provide designers with the knowledge needed to understand and work with MCMs **Semiconductor Manufacturing Handbook 2E (PB)** Hwaiyu Geng,2017-10-06 Thoroughly Revised State of the Art Semiconductor Design Manufacturing and Operations Information Written by 70 international experts and reviewed by a seasoned technical advisory board this fully updated resource clearly explains the cutting edge processes used in the design and fabrication of IC chips MEMS sensors and other electronic devices Semiconductor Manufacturing Handbook Second Edition covers the emerging technologies that enable the Internet of Things the Industrial Internet of Things data analytics artificial intelligence augmented reality and and smart manufacturing You will get complete details on semiconductor fundamentals front and back end processes nanotechnology photovoltaics gases and chemicals fab yield and operations and facilities Nanotechnology and microsystems manufacturing FinFET and nanoscale silicide formation Physical design for high performance low power 3D circuits Epitaxi anneals RTP and oxidation Microlithography etching and ion implantations Physical chemical electrochemical and atomic layer vapor deposition Chemical mechanical planarization Atomic force metrology Packaging bonding and interconnects Flexible hybrid electronics Flat panel flexible display electronics and photovoltaics Gas distribution systems Ultrapure water and filtration Process chemicals handling and abatement Chemical and slurry handling systems Yield management CIM and factory automation Manufacturing execution systems Advanced process control Airborne molecular contamination ESD controls in clean room environments Vacuum systems and RF plasma systems IC manufacturing parts cleaning technology Vibration and noise design And much more **Proceedings** ,2000 **Choice** ,2001 *Microvias: For Low Cost, High Density Interconnects* John H. Lau,Ricky S. W. Lee,2001-05-21 State of the art introduction to high density interconnect technology The first ever book on this hot topic Microvias Low Cost High Density Interconnects gives you a thorough look at the technology that s changing the nature of printed circuit boards and driving the mobile electronic revolution A must for electronics and mechanical engineers John Lau and Ricky Lee s intensive introduction to microvia technology expertly covers all major techniques You get important details on mechanical NC drilling laser drilling photo defined chemical and plasma etching and conductive ink formation You also get a survey of the work of leading companies and their products including Canon Compaq Fujitsu Limited Gore Hitachi Chemical Co Ibsiden IBM JCI JVC K S X Lam Kyocera JME Matsushita Mitsubishi NEC Samsung Sheldahl Shinko Toshiba **Proceedings of the International Conference on Integration and Commercialization of Micro and Nanosystems, 2007: Micro and nano fluidics ; Micro and nano manufacturing ; Metrology and control ; Commercialization of micro and nano technology ; General** ,2007 **Robust Electronic Design Reference Book** John R. Barnes,2004-03-31 If you design electronics for a living you need Robust Electronic Design Reference Book Written by a working engineer who has put over 115 electronic products into production at Sycor IBM and

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