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Advanced MEMS Packaging



Synopsis

A comprehensive guide to 3D MEMS packaging methods and solutions Written by experts in the field, Advanced MEMS Packaging serves as a valuable reference for those faced with the challenges created by the ever-increasing interest in MEMS devices and packaging. This authoritative guide presents cutting-edge MEMS (microelectromechanical systems) packaging techniques, such as low-temperature C2W and W2W bonding and 3D packaging. This definitive resource helps you select reliable, creative, high-performance, robust, and cost-effective packaging techniques for MEMS devices. The book will also aid in stimulating further research and development in electrical, optical, mechanical, and thermal designs as well as materials, processes, manufacturing, testing, and reliability. Among the topics explored: Advanced IC and MEMS packaging trends MEMS devices, commercial applications, and markets More than 360 MEMS packaging patents and 10 3D MEMS packaging designs TSV for 3D MEMS packaging MEMS wafer thinning, dicing, and handling Low-temperature C2C, C2W, and W2W bonding Reliability of RoHS-compliant MEMS packaging Micromachining and water bonding techniques Actuation mechanisms and integrated micromachining Bubble switch, optical switch, and VOA MEMS packaging Bolometer and accelerameter MEMS packaging Bio-MEMS and biosensor MEMS packaging RF MEMS switches, tunable circuits, and packaging

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Customer Reviews

Advanced MEMS packaging is perhaps the most difficult technical challenge facing the electronics industry. It combines some of the still-unsolved riddles of 3D packaging with the difficulties of hermetic cavity packaging and the demands of non-electronic signal sensing. This 550-page book is an exhaustive examination of the current state of leading-edge MEMS packaging, the major directions that are being followed, and the research that might lead to solutions. It includes in-depth chapters on enabling technologies, with case studies. Eight following chapters cover detailed applications in Optical MEMS, Bio-MEMS, RF MEMS, and Accelerometers. In summary, this book offers a good mix of background, theory, practice, and projection. It should be a valuable aid for anyone associated with or considering advanced MEMS research, production, or use.

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