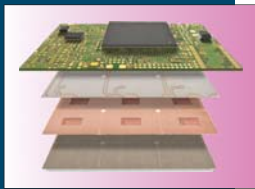
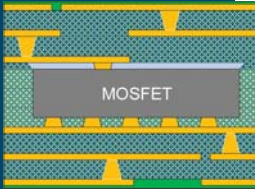


New Packages and Materials for Power Devices

Power devices are experiencing strong growth driven by demand in a variety of areas. Applications include energy generation and infrastructure, electric and hybrid vehicles, electric vehicle charging, datacenters, industrial automation, smart cities and buildings, home appliances, and transportation. While many companies continue to expand production of silicon-based power devices, there is also demand for devices based on new wide band gap (WBG) materials such as silicon carbide (SiC) and gallium nitride (GaN). Driven by the need for increased power density and system efficiency, these WBG materials are being adopted in many applications. The ramp of WBG devices will push operating temperatures to 200°C and beyond, and require new materials and assembly processes. Market projections for leadframe (including Cu clip) and embedded die packages are provided. Critical needs for packaging and assembly are identified. New developments in die attach materials are described, with a focus on Pb-free options. A set of PowerPoint slides is included with the detailed analysis.



Executive Summary

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- 1.1 Wide Band Gap Devices
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 - 1.1.4 GaN Power Device Issues
- 1.2 Packaging Developments and Drivers

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 - 2.4.1 Computing and Telecommunication
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 - 3.1.4 Company Developments
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3.2 Embedded Die Packages

- ACCESS, ASE, AT&S, EmPower, GE, Infineon, NCAP, Schweizer Electronic, TI

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- 3.5.2 Mechanical Scribe and Break
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New Packages and Materials for Power Devices

4.3 Advanced Die Attach Materials

Alpha Advanced Materials, Bando Chemical, Dowa Electronics Materials, EMD Performance Materials, Engineered Materials Systems, Henkel Electronic Materials, Heraeus Electronics, Hitachi Chemical, Indium, Kyocera, Kuprion, Mitsui Mining & Smelting, Namics, Napra, Nihon Handa, Nihon Superior, Sekisui Chemical, Senju Metal Industry, Tanaka Denshi Kogyo

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