

10 Gbps EA ドライバIC用ダイヤモンドパッケージの開発

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Diamond Package for 10 Gbps EA Driver IC

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Abstract

By suddenly expansion of the internet communications, signal capacity of communication systems has grown rapidly and the speed of each IC using in the communication systems has been faster, and then the power density of the IC has become lager. On the other hand, the assemble density of IC has been rapidly increased, for example, in the WDM communication systems. So the thermal dissipation performance of the package has become more important. We developed a new concept metal base package using CVD diamond, which has the highest thermal conductivity of all materials, for the 10 Gbps EA driver IC. This IC is one of the most power consumption and highest speed using the light communication. Although the FET temperature of the diamond package reduce to the same as that of a conventional package, we could the size of the diamond package could decreased by 60% in comparison with that of a conventional package. We also ensured that the electrical performance of the diamond package was equivalent to that of the conventional package.

Key Words: CVD Diamond, Metal Base Package, 10 Gbps EA Driver, Thermal and Electrical Characteristics