
Ga Studio EX 5.0.2 Activator Free Windows Software

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1. Field of the Invention The present invention relates to a semiconductor device, and more particularly, to a semiconductor device including a plurality of output buffers in one package, and a method for testing a semiconductor device.

2. Description of the Related Art A semiconductor device has been improved in terms of functionality as well as integration, and a number of input/output terminals in the semiconductor device has been increased. For this reason, the number of pins has been increased in a package having a plurality of output buffers. As the number of pins of the package is increased, the number of pins of each chip included in the package is also increased. That is, as the number of pins of the package is increased, the number of pins of each chip included in the package is increased, so that manufacturing cost of the package is increased. Thus, a structure for reducing the number of pins of each chip has been proposed. In the structure, as many chips as the number of pins of the package are included in one package to reduce the number of pins of each chip. In a conventional semiconductor device including a plurality of output buffers, an output signal is outputted from one of the output buffers. Thus, even when a plurality of output buffers are included in one package, it is not necessary to test each output buffer, and only one of the output buffers is tested. Thus, the number of pins for testing can be reduced, and manufacturing cost can be reduced. However, in the structure in which one package includes a plurality of chips, the output signals of the chips included in the package are different from one another. Thus, the conventional semiconductor device is problematic in that it is difficult to determine whether all of the chips are good chips or bad chips. When an output signal is not outputted from an output buffer, a failure may be caused in the output buffer. Thus, in order to reduce a possibility of the failure, it is necessary to test the output buffers in the package. Thus, the number of pins for testing can be reduced, and manufacturing cost can be reduced. In a conventional semiconductor device including a plurality of output buffers, the output buffers are tested in a step of testing chips included in a package. Thus, the number of pins for testing can be reduced, and manufacturing cost can be reduced. However, when the output buffers are tested in the package, a testing of the output buffers cannot be performed on the assumption

