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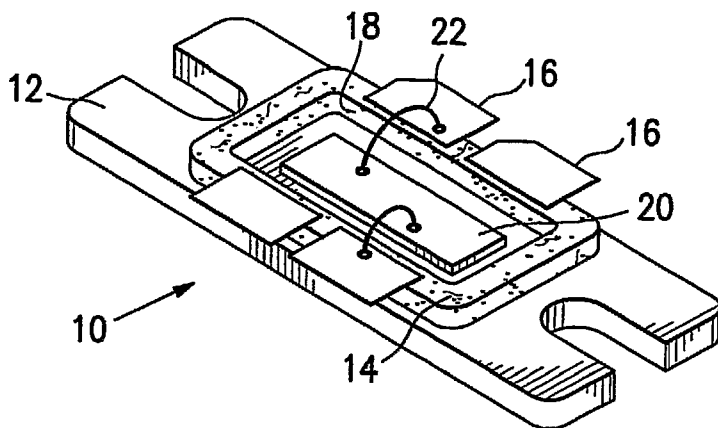
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(54) **Title:** SEMICONDUCTOR PACKAGE HAVING NON-CERAMIC BASED WINDOW FRAME



(57) **Abstract:** A semiconductor for power transistors and the like has a heat sink flange with at least one die mounted thereon, a non-ceramic window frame mounted thereon adjacent to the die, and a plurality of leads mounted on the window frame and electrically coupled to the die by wire bonds. The non-ceramic based window frame is thermally matched to copper or other highly conductive material typically used for the flange, to facilitate assembly of the semiconductor package at high temperatures. The non-ceramic based window frame is flexible and is thermally matched to the highly conductive flange so as to expand and contract at a rate similar to the flange to prevent failure during assembly of the

semiconductor package. The non-ceramic based material of the window frame includes a matrix of principally organic material, such as polytetrafluorethylene, filled with fibers which may be glass fibers or ceramic fibers. The matrix is clad in a metal such as copper or aluminum, and may be coated with nickel and gold to facilitate bonding of the window frame to the flange and the leads with gold/germanium solder. The window frame may also be bonded to the flange using epoxy. Cladding of the window frame may be performed by laminating copper or other cladding material on the matrix in a sufficient thickness so as to form the flange. The flange may be provided with a pedestal extending upwardly from an upper surface at a central position thereof to define a die attach area and forming a barrier to brazing material used to join the window frame to the flange.

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