An Integrated Circuit Switch

A multi-chip integrated circuit switch consisting of a GaAs photon-emitting diode in close proximity with Si phototransistor is described in this Tech Brief. A Si transistor is mounted on a heat sink with the GaAs diode being bonded to the transistor with a high-refractive-index coupling glass. Designing the transistor so that it has a high forward common-emitter current gain (about 500), a relatively high current gain is obtained. Larger current gains are obtained at temperatures under 100°C than at high temperatures.

Notes:
1. This item could be used extensively in isolation of digital circuits (such as computers) to eliminate common anode coupling and electromagnetic interference problems.

2. Documentation is available from:
   Clearinghouse for Federal Scientific and Technical Information
   Springfield, Virginia 22151
   Price $3.00
   Reference: TSP 69-10326

Patent status:
No patent action is contemplated by NASA.

Source: Edward L. Bonin of Texas Instruments Incorporated under contract to NASA Pasadena Office (NPO-11073)