

This Sheet Has Been Replaced



PACKAGE FOR A SEMICONDUCTOR DEVICE

ABSTRACT

A package (44) for a semiconductor device (10) includes a ceramic base (46) with a mounting surface (50) for supporting the device (10) and a light-transmissive cover (42). A refractory seal ring (70) is fused to the base (46) and to conductive paths (22) thereon. The upper surface (72) of the seal ring (70) is rendered optically flat with a selected angular relationship to the mounting surface (50). The upper and lower faces (76 & 78) of the cover (42) are rendered optically flat with a selected angular relationship to each other, so that with an outer portion of the lower face (78) resting on the upper surface (72) of the seal ring (70), the faces (76, 78) have a selected angular relationship with the mounting surface (50). The package (44) is expedient where the device (10) includes DMD's (30) having deflectable, light-reflective beams. The lower face (78) of the cover (42) includes an annular light-reflective coating (60) surrounding a window (80) overlying the device (10). In some embodiments, the reflective coating (60) is deposited on the walls (56, 58) of a groove (54) formed in the lower face (78) of the cover (42). Facilities (90) seal the cover (42) to the seal ring (70). The reflective coating (60) prevents any unmodulated light which is incident on the beams (32) from entering an optical system associated with the DMD-containing device (10). The sealing facilities (90) include adhesives (90), which may contain microspheres, soft metals (90), glass frits (90), fusion bonding of the cover (42) to the seal ring (70), and solder preforms.

Figure 1