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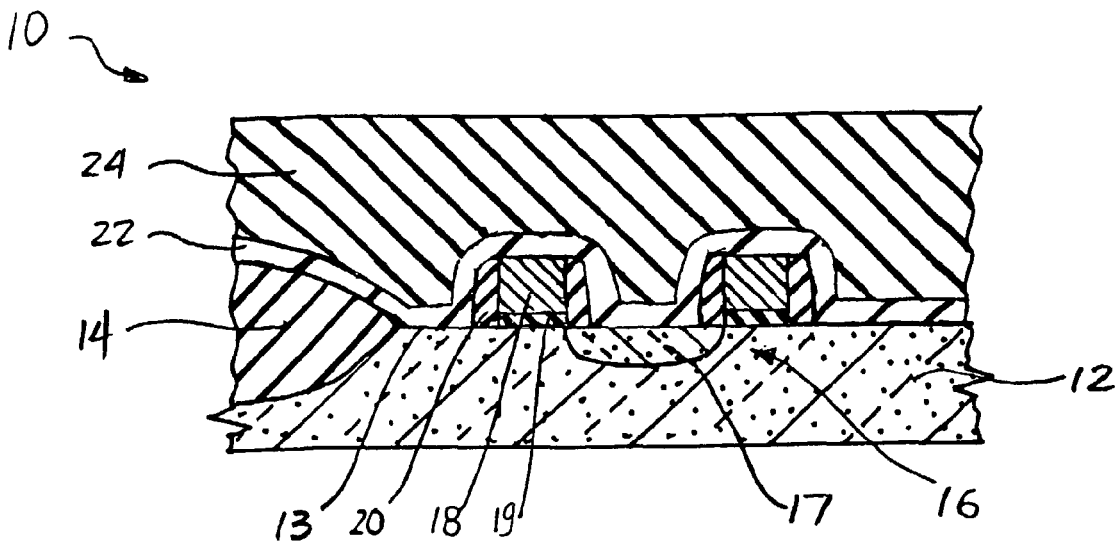
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(54) Title: ETCHANT WITH SELECTIVITY FOR DOPED SILICON DIOXIDE OVER UNDOPED SILICON DIOXIDE AND SILICON NITRIDE, PROCESSES WHICH EMPLOY THE ETCHANT, AND STRUCTURES FORMED THEREBY



(57) Abstract: An etchant including $C_2H_xF_y$, where x is an integer from two to five, inclusive, where y is an integer from one to four, inclusive, and where x plus y equals six. The etchant etches doped silicon dioxide with selectivity over both undoped silicon dioxide and silicon nitride. Thus, undoped silicon dioxide and silicon nitride may be employed as etch stops in dry etch processes which utilize the $C_2H_xF_y$-containing etchant. $C_2H_xF_y$ may be employed as either a primary etchant or as an additive to another etchant or etchant mixture. Semiconductor devices (10) that include structures that have been patterned with an etchant of the present invention or in accordance with the method of the present invention are also disclosed. Specifically, the present invention includes semiconductor devices (10) including doped silicon oxide structures (24) with substantially vertical sidewalls (34) and adjacent undoped silicon oxide or silicon nitride structures (36) exposed adjacent the sidewall (34).

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