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DT 04-4

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Using monolithic high voltage gate drivers

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INTRODUCTION

The purpose of this paper is to highlight the most common subjects driving a half bridge power stage in motor drive applications (with monolithic IC gate driver) and to suggest appropriate solutions to solve the issues.
In the following sections different topics are discussed: the sizing of some fundamental components, as bootstrap circuit and on/off gate resistors; the half bridge parasitic elements are presented with their effects and some possible solutions are proposed. In the end section some layout tips are presented.
All the situations and the solutions proposed are, where it's not specified, for a typical IR monolithic gate driver with floating bootstrap supply.