In the paper, a linear system of ordinary differential equations of the form $Mq + Cq = 0$, where $q \in \mathbb{R}^m$, $M$ is a positive definite symmetric $m \times m$ matrix, and $C$ is an arbitrary $m \times m$ matrix, is considered. The behavior of characteristic curves $\lambda(p)$, where $\lambda$ is an eigenvalue of the problem and $p$ is a real parameter, is studied. Typical modifications (junctions) of the characteristic curves with a change of other problem parameters are described. The quantitative analysis of characteristic curves near junction points is done and used to derive the second-order approximation of the stability boundary in multiple parameter space.

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