For $r \geq 3$, let $f_r: [0, \infty) \to [1, \infty)$ be the unique analytic function such that $f_r\left(\binom{k}{r}\right) = \binom{k-1}{r-1}$ for any integer $k \geq r - 1$. We prove that the spectral radius of an $r$-uniform hypergraph $H$ with $e$ edges is at most $f_r(e)$. The equality holds if and only if $e = \binom{k}{r}$ and $H$ is the union of a complete $r$-uniform hypergraph $K^r_k$ and some possible isolated vertices. This result generalizes the classical Stanley’s theorem on graphs. (Received July 31, 2017)