Let $M$ be an irreducible algebraic monoid with reductive unit group $G$. There exists an idempotent cross section $\Lambda$ of $G \times G$ orbits that forms a lattice under the partial order $e \leq f \iff GeG \subseteq GfG$, where the closure is in the Zariski topology. This cross section lattice is important in describing the structure of reductive monoids. $M$ is said to be $J$-irreducible when $\Lambda$ has a unique minimal nonzero element. In this case the cross section lattice is completely determined by the type of the minimal element and the Coxeter-Dynkin diagram of $G$. In this talk we will provide some combinatorial properties of distributive cross section lattices of $J$-irreducible monoids. (Received September 16, 2013)