Estimating Power Dissipation and Max Junction Temperature

$Vout := 12V$

$Vinmax := 264V \cdot \sqrt{2}$ $\quad Vinmin := 70V$

$Dmin := \frac{Vout}{Vinmax} = 0.032$ $\quad Dmax := \frac{Vout}{Vinmin} = 0.171$ $\quad Rdson := 14ohm$

$Ipeak := 440mA$ $\quad tr := 50ns$

$Pd\_at\_Vinmin := \left(Ipeak \cdot \sqrt{Dmax}\right)^2 \cdot Rdson + 2 \cdot \frac{Ipeak \cdot Vinmin\, tr \cdot 62kHz}{2} = 0.56W$

$Pd\_at\_Vinmax := \left(Ipeak \cdot \sqrt{Dmin}\right)^2 \cdot Rdson + 2 \cdot \frac{Ipeak \cdot Vinmax\, tr \cdot 62kHz}{2} = 0.596W$

$Rja := \frac{134.4}{W}$

$Tjmax := 125$

$Tjmax = Tamb + Pd \cdot Rja$

$Tjmax - Pd \cdot Rja$

$Tamb\_at\_Vinmin := Tjmax - Pd\_at\_Vinmin \cdot Rja = 49.72$

$Tamb\_at\_Vinmax := Tjmax - Pd\_at\_Vinmax \cdot Rja = 44.848$