

## Choosing the Right TPS6420x Buck Controller

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### ABSTRACT

This application note provides a table to aid in selecting the right TPS6420x option for your specific application.

**Table 1. Selection Table**

Device	Minimum On Time	Minimum Off Time	$V_{IN} \approx V_O \rightarrow$ Minimum Off Time Determines $f_{SW}$	$V_{IN} \gg V_O \rightarrow$ Minimum On Time Determines $f_{SW}$
TPS64200	1.6 $\mu$ s	600 ns	Optimized for highest overall efficiency but higher ripple (and worse load regulation) at light load due to lowest $f_{SW}$	Optimized for highest overall efficiency but higher ripple (and worse load regulation) at light load due to lowest $f_{SW}$
TPS64201	1.6 $\mu$ s (stepped down to 800 ns, 400 ns, then 200 ns if necessary to avoid audio frequency range)	600 ns	Same as TPS64200 except steps down $f_{SW}$ to avoid audible frequencies and thus provide lower $V_O$ ripple ( and better load regulation) at light load	Same as TPS64200 except steps down $f_{SW}$ to avoid audible frequencies and thus provide lower $V_O$ ripple ( and better load regulation) at light load
TPS64202	1.6 $\mu$ s (stepped down to 800 ns, 400 ns, then 200 ns if necessary to avoid audio frequency range)	300 ns	Same as TPS64201 except optimized for high $f_{SW}$ at higher loads (and therefore smaller inductor) and lower ripple ( and better load regulation) at light load	Functional but not the best choice
TPS64203	600 ns	600 ns	Functional but not the best choice	Same as TPS64201 except optimized for high $f_{SW}$ at higher loads (and therefore smaller inductor)

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