

Texas Instruments Power Topologies



TEXAS INSTRUMENTS

ti.com/power/topologies

Topology	Circuit Diagram	Equations	Waveforms
Boost		$D = \frac{V_{out} - V_{in}}{V_{in}}$ $V_{out} = \frac{V_{in}}{1-D}$	
Synchronous Buck		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Buck		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Inverting Buck-Boost		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = -D \cdot V_{in}$	
Step-Up		$D = \frac{V_{out} - V_{in}}{V_{in}}$ $V_{out} = \frac{V_{in}}{1-D}$	
Cuk		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Zeta		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Fly-Back™		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Two Switch Flyback		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Active Clamp Forward		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Single Switch Forward		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Two Switch Forward		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Push-Pull		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Wobbling		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Half-Bridge		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Full-Bridge		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	
Phase Shifted Full-Bridge		$D = \frac{V_{out}}{V_{in}}$ $V_{out} = D \cdot V_{in}$	