## Power Supply Topologies

### Type of Converter

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**Type of Converter:**
- **BUCK:** Buck converters are used to increase the voltage of a lower voltage source.
- **BOOST:** Boost converters are used to increase both the voltage and current of a lower voltage source.
- **BUCK BOOST:** Buck-boost converters are used to increase both the voltage and current of a lower voltage source.
- **SEPIC:** SEPIC converters are used to increase or decrease the voltage of a lower voltage source.
- **FLYBACK:** Flyback converters are used to increase the voltage of a lower voltage source.
- **FORWARD:** Forward converters are used to increase the voltage of a lower voltage source.
- **2 SWITCH FORWARD:** Two-switch forward converters are used to increase the voltage of a lower voltage source.
- **ACTIVE CLAMP FORWARD:** Active clamp forward converters are used to increase the voltage of a lower voltage source.
- **HALF BRIDGE:** Half bridge converters are used to increase the voltage of a lower voltage source.
- **PUSH PULL:** Push pull converters are used to increase the voltage of a lower voltage source.
- **FULL BRIDGE:** Full bridge converters are used to increase the voltage of a lower voltage source.
- **PHASE SHIFT ZVT:** Phase shift zero voltage transition converters are used to increase the voltage of a lower voltage source.

**Circuit Configuration:**
- **Input:** The input source of the converter.
- **Output:** The output source of the converter.
- **Diode:** The diode used in the converter.

**Ideal Transfer Function:**
- **VIN:** Input voltage.
- **VOUT:** Output voltage.
- **ID1:** Diode current.

**Diode Reverse Voltage:**
- **VD1:** Diode reverse voltage.

**Diode Current:**
- **VD1:** Diode current.

**Voltage and Current Waveforms:**
- **VIN:** Input voltage.
- **VOUT:** Output voltage.
- **IL:** Output current.

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*Note: Each circuit diagram represents a specific type of converter and its corresponding waveforms.*

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**Texas Instruments Trademark:**
- The platform bar is a trademark of Texas Instruments.

**IdealTransfer Configuration Type:**
- **Drain Voltage:**
- **Diode Reverse Diode Current:**

**Average Diode Current:**
- **IL:** Average diode current.

**Diode Reverse Voltage:**
- **VD1:** Diode reverse voltage.

---

**Power Supply Topologies:**
- **Continuous conduction mode:**
- **Discontinuous mode:**

**Discontinuous Mode:**
- **VIN:** Input voltage.
- **VOUT:** Output voltage.
- **ID1:** Diode current.
- **IQ1:** output diode current.

---

**Ideal Transfer Function:**
- **VIN:** Input voltage.
- **VOUT:** Output voltage.
- **ID1:** Diode current.

**Diode Reverse Diode Current:**
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**Voltage and Current Waveforms:**
- **VIN:** Input voltage.
- **VOUT:** Output voltage.
- **IL:** Output current.
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