### Switching Power Supply Development History

**About 1960**
Stabilized power supplies using vacuum tubes were common at this time. America’s NASA began developing switching power supplies for use in space craft.

**About 1965**
Development of semiconductor elements for switching power supplies begins.

**About 1970**
TDK and Nippon Electronic Memory Industry Co. Ltd. (predecessor to Nemic-Lambda) enter the switching power supply business.

**1972**
Nippon Electronic Memory Industry Co. Ltd. manufactures and markets Japan’s first standard switching power supply. TDK manufactures and markets switching power supplies.

**1974**
Switching power supplies are adopted for use in commercial television games and the switching power supply market expands.

**1976**
TDK manufactures and markets switching power supply transformers.

**1978**
Nemic-Lambda (predecessor to Densei-Lambda) founded, to take over operations of Nippon Electronic Memory Industry Co. Ltd.

**1995**
TDK begins production of DC-DC converters for use in HEVs.

**2000**
TDK launches the RKW and JBW series of switching power supplies.

**2004**
Densei-Lambda (the predecessor to TDK-Lambda) launches the HWS series of switching power supplies.

**2005**
Densei-Lambda joins the TDK Group.

**2006**
Sales of UPS with lithium-ion batteries (lead-free) begin.

**2007**
Sales of TDK-Lambda brand products begin.

**2008**
TDK-Lambda Corporation launched.

---

**Advances in Switching Power Supplies**

- **First generation** (About 1970)
  - Power supplies have undergone amazing miniaturization.
  - Japan’s first standard switching power supply
  - Compliance with global standards
  - 4600cm³

- **Second generation** (1990)
  - 3800cm³

- **Third generation** (2000)
  - 1300cm³

- **Fourth generation** (2010)
  - 1200cm³

- **Fifth generation** (2010)
  - 550cm³

- **Next generation** (2010)
  - Further miniaturization and higher efficiency
  - Compliance with environmental regulations such as the RoHS Directive

---

**Compliance with environmental regulations such as the RoHS Directive**