

### Device Features

- 94% Efficient Step-Up DC to DC Converter
- Wide Input Range 0.9V to 5.5V
- 1.8V to 5.5V Adjustable Output Voltage
- 1.8MHz Operating Frequency
- 1µA Shutdown Mode
- Suitable with Low ESR Ceramic Capacitors (MLCC)
- Over Current Protection
- Over Temperature Protection
- MSOP-10L: Available in “Green” Molding Compound (No Br, Sb)
- Lead Free Finish/ RoHS Compliant

### Description

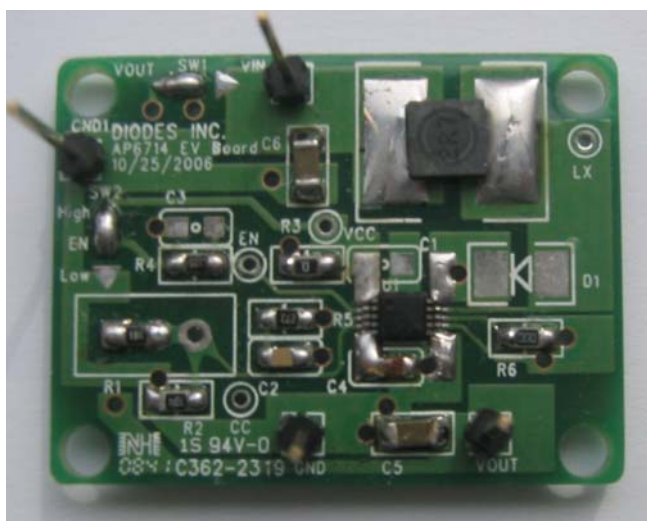
The AP6714 provides a complete power supply solution for all one-cell, two-cell, three cell, alkaline, NiCd or NiMh or single-cell Lithion battery powered products. They improve performance and reduce component count and size compared to conventional controllers, lithium-ion (Li+) designs. The on-chip MOSFETs provide up to 94% efficiency for critical power supplies. This optimizes overall efficiency and cost, while also reducing board space. Operate at one fixed frequency of 1.8MHz to optimize size, cost, and efficiency. Other features include soft-start and overload protection. AP6714 is available in space-saving 10-pin MSOP package.

### EVM Features

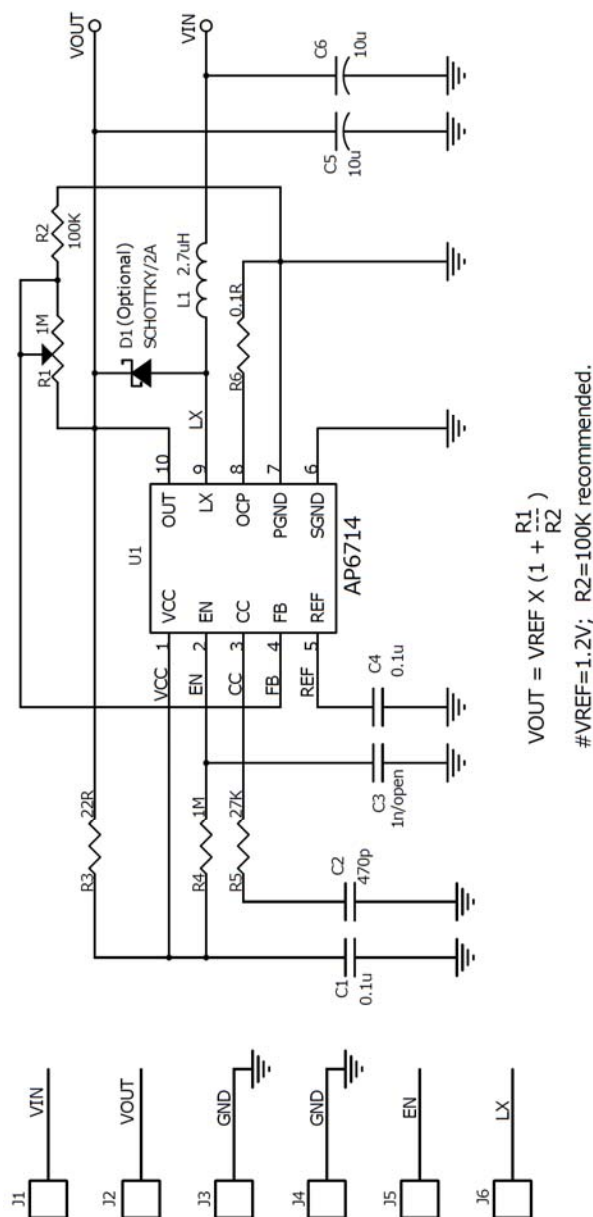
- Input voltage : 0.9V to 5.5V
- Output voltage : up to 5.0V
- Output current : up to 0.5A

### Ordering Information

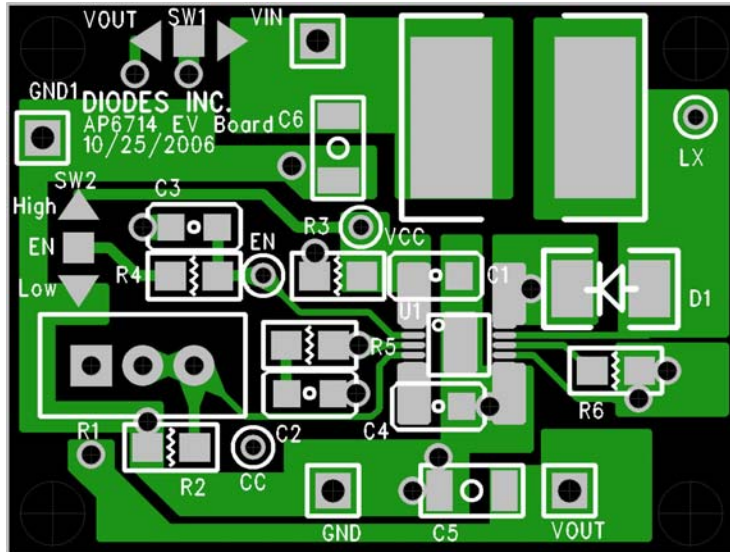
Device	Package Code	Packaging	EVM Part Number
AP6714M10G	M10	MSOP-10L	



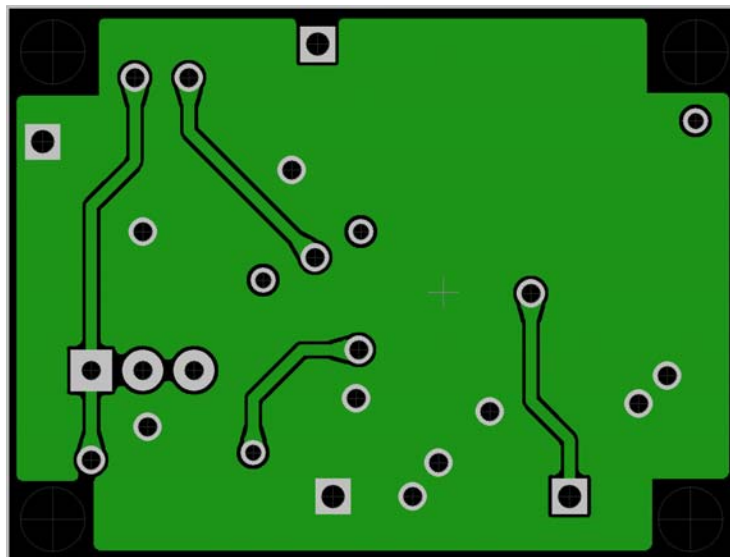
### Schematic



## PCB Layout



Top Layer Layout of AP6714-EVM



Bottom Layer Layout of AP6714-EVM

### Bill of Material

#### Bill of Material for AP6714 EVM

Ref	Count	Size	Mfr	Part Number	Description
C1, C4	2	0805	STD	STD	0.1 $\mu$ F ceramic capacitor
C2	1	0805	STD	STD	470 pF ceramic capacitor
C3	1	0805	STD	STD	Not populated
C5, C6	1	1210	STD	STD	10 $\mu$ F ceramic capacitor
R1	1	0805	STD	STD	Resistor or potentiometer
R2	1	0603	STD	STD	100 k $\Omega$ resistor
R3	1	0603	STD	STD	22 $\Omega$ resistor
R4	1	0603	STD	STD	1 M $\Omega$ resistor
R5	1	0603	STD	STD	27 k $\Omega$ resistor
R6	1	0603	STD	STD	0.1 $\Omega$ resistor
L1	1	8x10mm			2.7 $\mu$ H inductor
D1	1	SMA	Diodes	B220A	2A/20V Schottky diode (not populated)
U1	1	MSOP10	Diodes	AP6714	1.8MHz synchronous boost converter

### I/O Terminals and Test Points

#### Terminals and Jumpers for AP6714 EVM

I/O and Test Points	Description	Comments
J1, J3	Input and Ground	Connect to the input power supply
J2, J4	Output and Ground	Connect to the load
J5	Enable	Open to enable the operation; connect to GND to disable the device
J6	LX	Output terminal of the integrated MOSFET

---

**Quick Start Guide**

---

1. Leave the Enable pin open.
2. Connect a +3.6V power supply between the VIN and GND terminals. Make sure the power supply is turned off.
3. Connect an adjustable current or resistive load to the OUT and GND terminals (up to 0.5A).
4. Turn on the power supply. Measure the output voltage. Vout should be about 5V (for the Vout=5V EVM).
5. Increase the load current and monitor the output voltage.
6. Vary the input voltage between 2.8V and 4.5V and monitor the output voltage.