



## New Product Announcement

AL1677

# AL1677 Universal High-Efficiency High-Accuracy LED Driver Converter

The AL1677 is a universal AC input (85~277 V<sub>AC</sub>), high-efficiency and high-accuracy buck LED driver converter.

The topology provides accurate constant current (CC) line and load regulation, operating at boundary conduction mode (BCM) to assist EMI/EMC qualification and testing to meet the latest regulatory laws.

AL1677 system replaces the auxiliary winding and external high-voltage MOSFET with a few external components to create a low bill of materials (BOM) cost solution.

It has comprehensive protection features to improve the system safety and reliability. The thermal fold-back function reduces the output current when the driver's temperature is higher than the setting value.

The AL1677 is available in SO-8 package.



### The Diodes' Advantage

**The AL1677 provides an extremely cost-effective solution for general illumination LED lamps**

- **Single Inductance**  
Extremely low BOM cost solution
- **Built-in UVLO, OTP, LED short, LED open Protection**  
Provides a complete protection solution
- **Good Line Regulation and Load Regulation**  
One solution can meet full load and universal input voltage application
- **Boundary Conduction Mode (BCM) Operation**  
Achieves higher convert efficiency and reduced EMI issues with fewer components
- **Built-in Thermal Fold-back Function**  
Improves the system's reliability at the high ambient temperature

### Applications

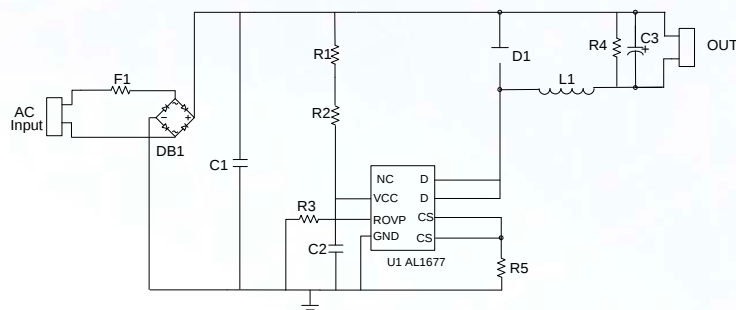
- Retrofit LED lamps
- High-voltage DC-DC LED driver
- General purpose constant current source



# New Product Announcement

## AL1677

### Typical Application: GU10/Bulb LED



### Diodes Off-line LED Drivers

| Part Number          | Max. Output Voltage | Max. LED Current | Current Accuracy | Efficiency | Operating Temp Range | High Power Factor | Triac Dimmable | Topology | Package Outline | Comments                                                                         |
|----------------------|---------------------|------------------|------------------|------------|----------------------|-------------------|----------------|----------|-----------------|----------------------------------------------------------------------------------|
|                      | V                   | mA               | %                | %          | °C                   |                   |                |          |                 |                                                                                  |
| AP1684A              | 80                  | 400              | +/-2             | 90         | -40 ~ 105            | Y                 | N              | Buck     | SO-8            | External MOS For >10W lamps                                                      |
| AP1685               | 80                  | 200              | +/-2             | 90         | -40 ~ 105            | Y                 | N              | Buck     | SO-7            | Internal MOS for <10W Lamps                                                      |
| AL1678-08B/-10B/-20B | 80                  | 120 /180 /240    | +/-3             | 90         | -40 ~ 105            | N                 | N              | Buck     | SO-7            | Integrates 0.8A/500V MOS for <8W<br>1A/500V MOS for <10W<br>2A/500V MOS for <15W |
| AL1677-05B           | 80                  | 100              | +/-3             | 90         | -40 ~ 105            | N                 | N              | Buck     | SO-8            | Integrates 0.5A/500V MOS for <5W                                                 |
| AL1677-08B           | 80                  | 120              | +/-3             | 90         | -40 ~ 105            | N                 | N              | Buck     | SO-8            | Integrates 0.8 A/500V MOS for <8W                                                |
| AL1677-10B           | 80                  | 180              | +/-3             | 90         | -40 ~ 105            | N                 | N              | Buck     | SO-8            | Integrates 1A/500V MOS for <10W                                                  |
| AL1677-20B           | 80                  | 240              | +/-3             | 90         | -40 ~ 105            | N                 | N              | Buck     | SO-8            | Integrates 2A/500V MOS for <15W                                                  |

### Ordering Information

| Part Number    | Package Code | Package | 13" Tape and Reel |                    |
|----------------|--------------|---------|-------------------|--------------------|
|                |              |         | Quantity          | Part Number Suffix |
| AL1677-05BS-13 | S            | SO-8    | 4,000/Tape & Reel | -13                |
| AL1677-08BS-13 | S            | SO-8    | 4,000/Tape & Reel | -13                |
| AL1677-10BS-13 | S            | SO-8    | 4,000/Tape & Reel | -13                |
| AL1677-20BS-13 | S            | SO-8    | 4,000/Tape & Reel | -13                |