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## LM3409HV High Voltage LED Buck Controller Evaluation Board

(ACTIVE) LM3409HVEVAL

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## · AN-1953 LM3409HV Evaluation Board (Rev. D) (PDF 696 KB)

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### Description

a DC input voltage (V<sub>IN</sub> = 48V). The switching frequency (f<sub>SW</sub> = 400 kHz) is targeted for the nominal operating point, however fsw varies across the entire operating range. The circuit can accept an input voltage of 6V-75V. However, if the input voltage drops below

the regulated LED string voltage, the converter goes into dropout and  $V_0 = V_W$  ideally. The evaluation board showcases all features of the LM3409HV including analog dimming using

This evaluation board showcases the LM3409HV PFET controller for a buck current regulator. It is designed to drive 12 LEDs ( $V_0 = 42V$ ) at a maximum average LED current (ILED = 1.5A) from

the IADJ pin and internal PWM dimming using the EN pin. High frequency external parallel FET shunt PWM dimming can also be evaluated. The board has a header (J1) with a removable jumper, which is used to select the PWM dimming method. The evaluation board has a right angle connector (J2) which can mate with an external LED load board allowing for the LEDs to be mounted close to the driver. This reduces potential ringing when there is no output capacitor. Alternatively, the LED+ and LED- turrets can be

used to connect the LED load. Since the board contains a buck regulator designed for 48V input, the efficiency is very high at input voltages near or less than 48V. The switching

frequency increases as input voltage increases, yielding lower efficiency at higher input voltages. The evaluation board circuit can be redesigned to target the same switching frequency and LED current at a higher nominal input voltage. This design odification will increase the efficiency at high input voltage.

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#### Part Number

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