

# QUICK START GUIDE FOR DEMONSTRATION CIRCUIT DC711 PHOTOFLASH CAPACITOR CHARGER, HIGH VOLTAGE SUPPLY

## LT3468ES5/ LT3468ES5-1/ LT3468ES5-2

### DESCRIPTION

Demonstration circuit DC711 is a DC-DC flyback converter using the highly integrated LT3468ES5/ LT3468ES5-1/ LT3468ES5-2 to rapidly charge a photoflash capacitor up to 320V for photoflash applications. It demonstrates a simple application circuit operating in high efficiency and shows appropriate layout techniques for the LT3468ES5/LT3468ES5-1/LT3468ES5-2. The circuit uses small surface mount components and has very

small board space compared to conventional solutions. This demonstration circuit is particularly useful for applications such as camera flash, PDA and cell phone flash and high voltage power supplies that require high efficiency and extremely small size.

**Design files for this circuit board are available. Call the LTC factory.**

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**Table 1. Demo board Assembly versions**

ASSEMBLY VERSIONS	U1	I <sub>SW-PK</sub> (PEAK SWITCH CURRENT LIMIT)
DC711A-A	LT3468ES5	1.4A
DC711A-B	LT3468ES5-1	0.7A
DC711A-C	LT3468ES5-2	1A

### QUICK START PROCEDURE

Demonstration circuit DC711 is easy to set up to evaluate the performance of the LT3468ES5 (LT3468ES5-1/-2). Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

**NOTE:** When measuring the input voltage ripple, care must be taken to avoid a long ground lead on the oscilloscope probe. Measure the input voltage ripple by touching the probe tip directly across the VIN or VOUT and GND terminals. See Figure 2 for proper scope probe technique.

**NOTE:** For safe operation, always shield the circuit when power is on, and always discharge the high voltage output capacitor after power is off.

1. With power off, connect input power source V<sub>batt</sub> to the VIN and GND terminals. Input voltage is limited to between 2.5V to 8V.
2. Connect a function generator to the Charge and GND terminals. Input voltage is limited to between

2.5V to 8V. A low (<0.3V) to high (>1V) transition on the Charge pin will initiate charge cycle.

3. Connect load (such as a 70uF, 330V photoflash capacitor) between the +Strobe Cap and -Strobe Cap terminals.
4. Slowly turn on power source V<sub>batt</sub>. Turn on the pulse generator to send an edge triggered one-shot from low (<0.3V) to high (>1V) to enable charge operation. Check for the proper output voltages. V<sub>out</sub>= 320V.
5. Measure the charge time (V<sub>OUT</sub> rise time from 0V to 320V) from scope. The photoflash capacitor should be pre-charged a few times before the measurement test due to its memory characteristic.
6. For single source operation, connect Charge terminal to VIN through an on/off switch. Toggle the switch to enable charge operation. **Warning: Operate by high voltage trained personnel only.**

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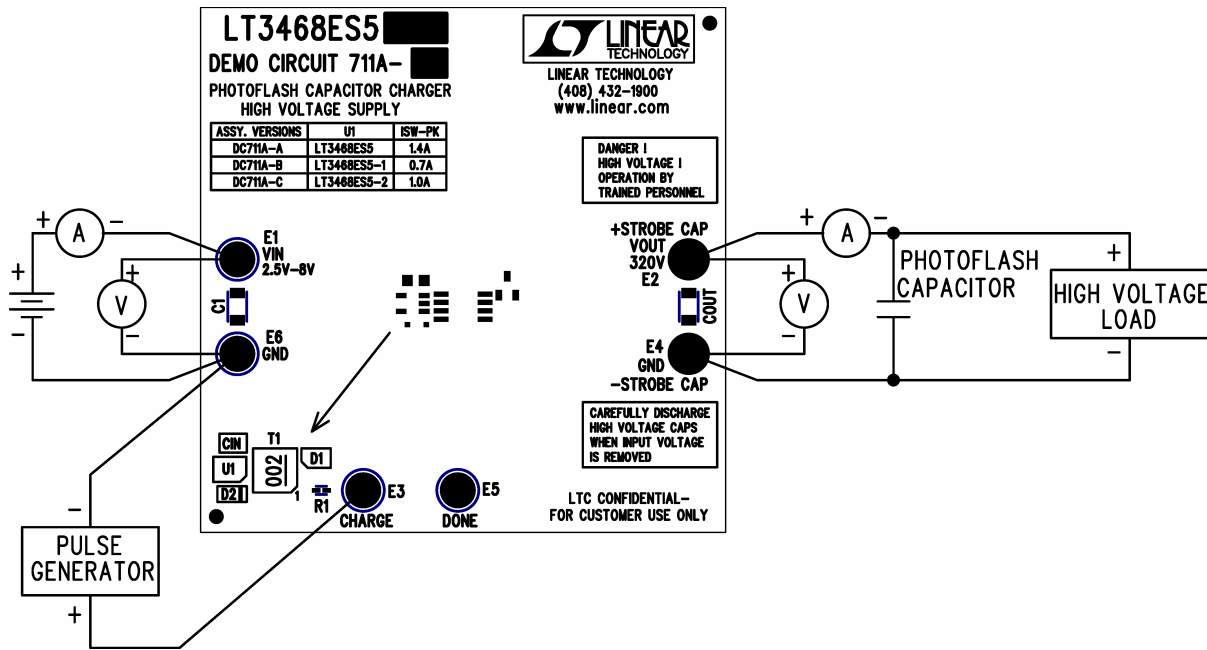


Figure 1. Proper Measurement Equipment Setup

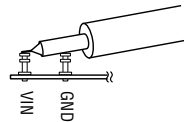


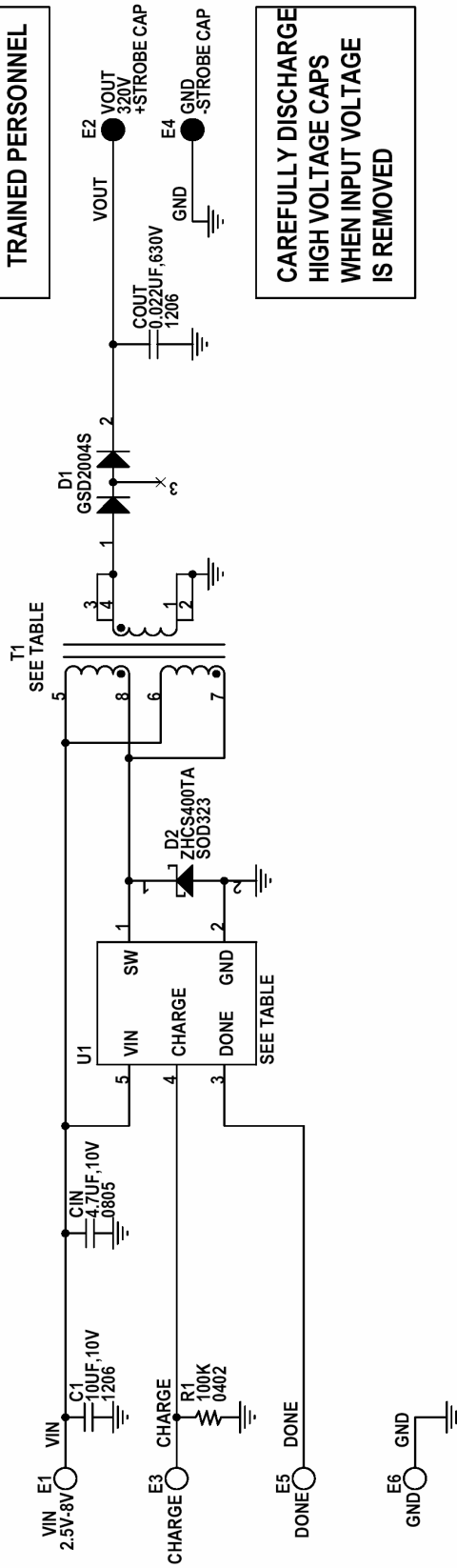
Figure 2. Measuring Input or Output Ripple

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## NOTES: UNLESS OTHERWISE SPECIFIED

1. THERE ARE 3 ASSEMBLY VERSIONS AS TABLE BELOW:

ASSY. VERSIONS	U1	T1	ISW-PK
DC711A-A	LT3468ES5	LDT565630T-001	1.4A
DC711A-B	LT3468ES5-1	LDT565630T-002	0.7A
DC711A-C	LT3468ES5-2	LDT565630T-003	1.0A



## CUSTOMER NOTICE

LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS; HOWEVER, IT REMAINS THE CUSTOMER'S RESPONSIBILITY TO VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.

THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.

CONTRACT NO.

APPROVALS

DRAWN: KIM T.

CHECKED:

APPROVED:

ENGINEER: RAYMOND Z.

DESIGNER:



1630 McCarthy Blvd.  
Milpitas, CA 95035  
Phone: (408)432-1900  
Fax: (408)434-0507  
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TITLE:

PHOTOFLASH CAPACITOR CHARGER HIGH VOLTAGE SUPPLY

SIZE DWG NO. DC711A-1\*LT3468ES5 REV A

DATE: Tuesday, January 27, 2004 SHEET 1 OF 1

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