DESCRIPTION

Demonstration circuit DC711 is a DC-DC flyback converter using the highly integrated LT3468ES5/ LT3468ES5-1/ LT3468ES-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.

LT is a trademark of Linear Technology Corporation

Table 1. Demo board Assembly versions

ASSEMBLY VERSIONS	U1	I_{SW-PK} (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 Vbatt 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 Vbatt. 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. Vout= 320V.
5. Measure the charge time (VOUT 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.**

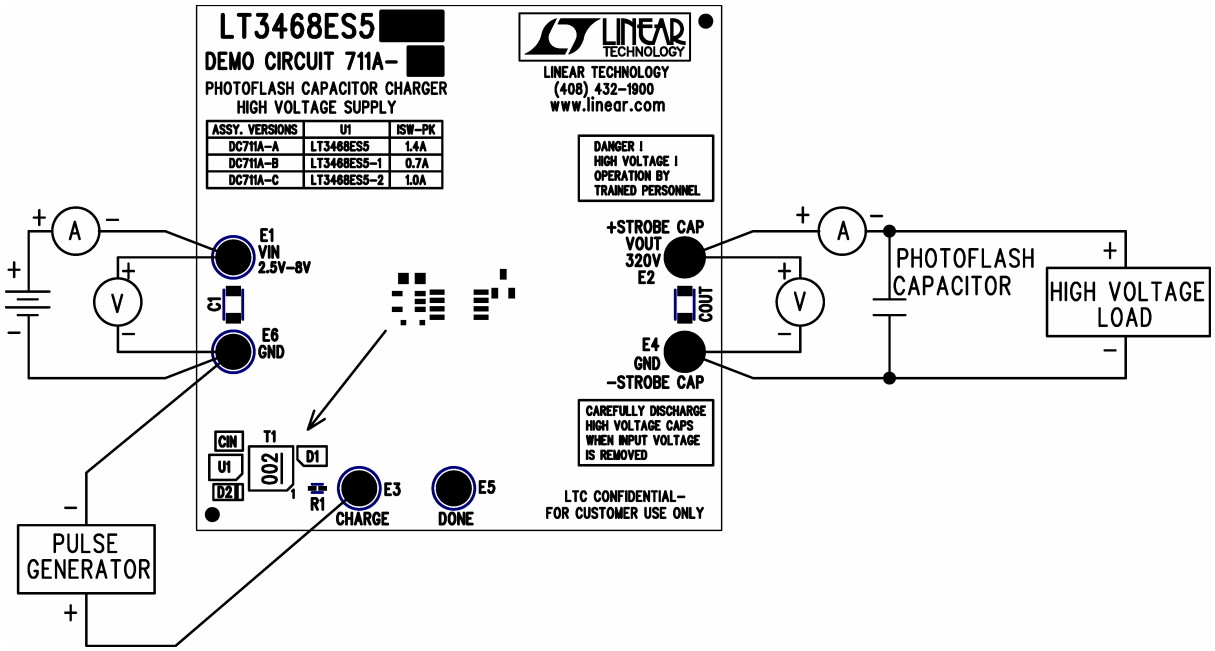


Figure 1. Proper Measurement Equipment Setup

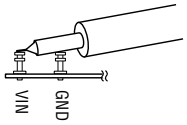
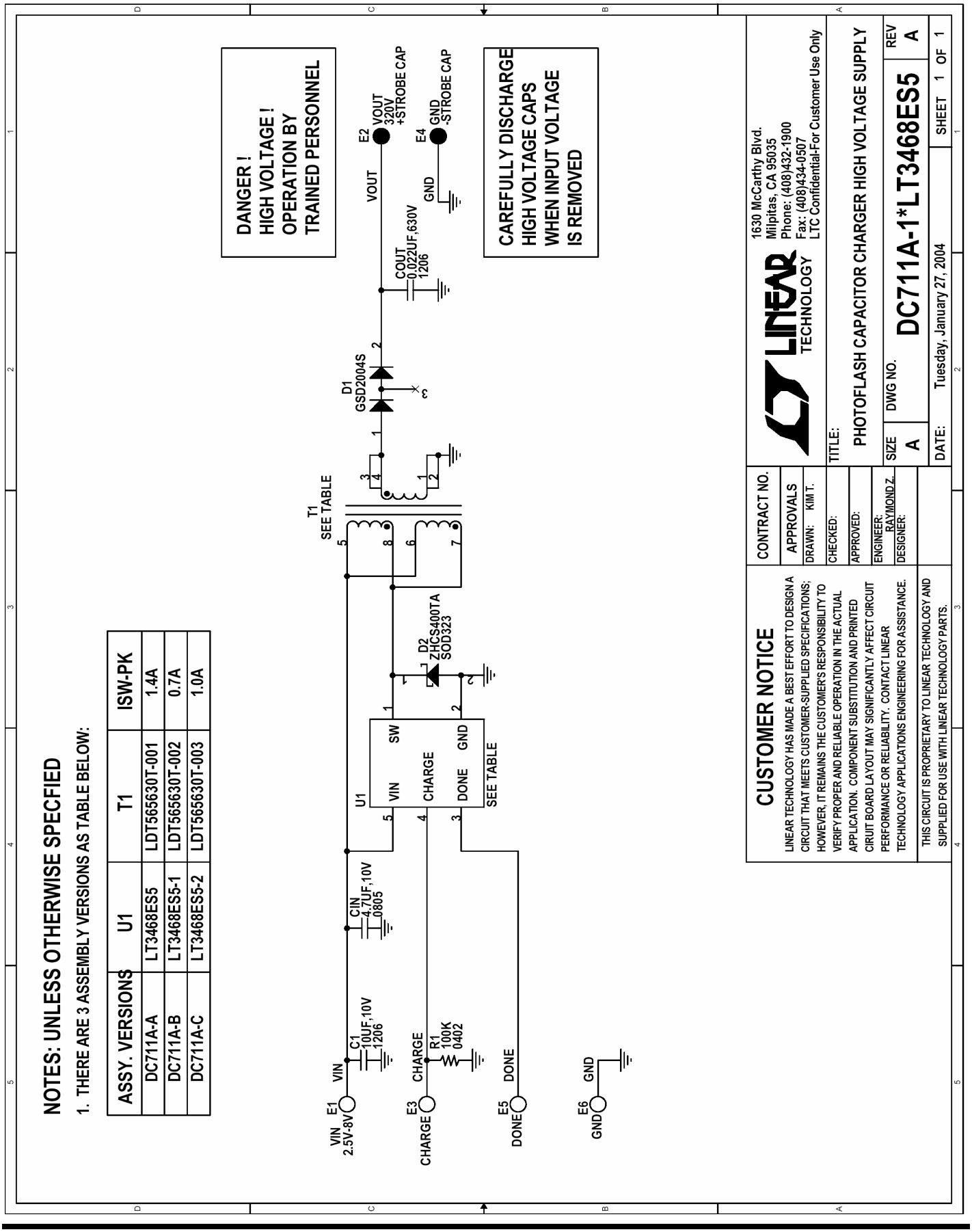


Figure 2. Measuring Input or Output Ripple


NOTES: UNLESS OTHERWISE SPECFIED
1. THERE ARE 3 ASSEMBLY VERSIONS AS TABLE BELOW:
ASSY. VERSION | 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
DANGER !
HIGH VOLTAGE !
OPERATION BY
TRAINED PERSONNEL
CAREFULLY DISCHARGE
HIGH VOLTAGE CAPS
WHEN INPUT VOLTAGE
IS REMOVED
VIN
C1
10UF,10V
1206
CIN
4.7UF,10V
0805
U1
VIN
SW
CHARGE
DONE
GND
SEE TABLE
R1
100K
0402
D2
ZHCS400TA
SOD323
T1
SEE TABLE
D1
GSD2004S
VOUT
COUT
0.022UF,630V
1206
E1 VIN
2.5V-8V
E2 VOUT
320V
+STROBE CAP
E3 CHARGE
E4 GND
-STROBE CAP
E5 DONE
E6 GND
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LTC Confidential-For Customer Use Only
TITLE:
PHOTOFLASH CAPACITOR CHARGER HIGH VOLTAGE SUPPLY
SIZE A
DWG NO. DC711A-1*LT3468ES5
REV A
DATE: Tuesday, January 27, 2004
SHEET 1 OF 1

Mouser Electronics

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DC711A-C DC711A-B DC711A-A