

# PMP7759

*PMP7759 Test Results*



Literature Number:SNVU011

# **Buck Boost Converter**

**TI reference design number: PMP 7759**

**(Formerly National Semiconductor design NSC1030)**

**Input: 6V to 33V**

**Output: 16.7V @1.75A**

**DC-DC Test Results**

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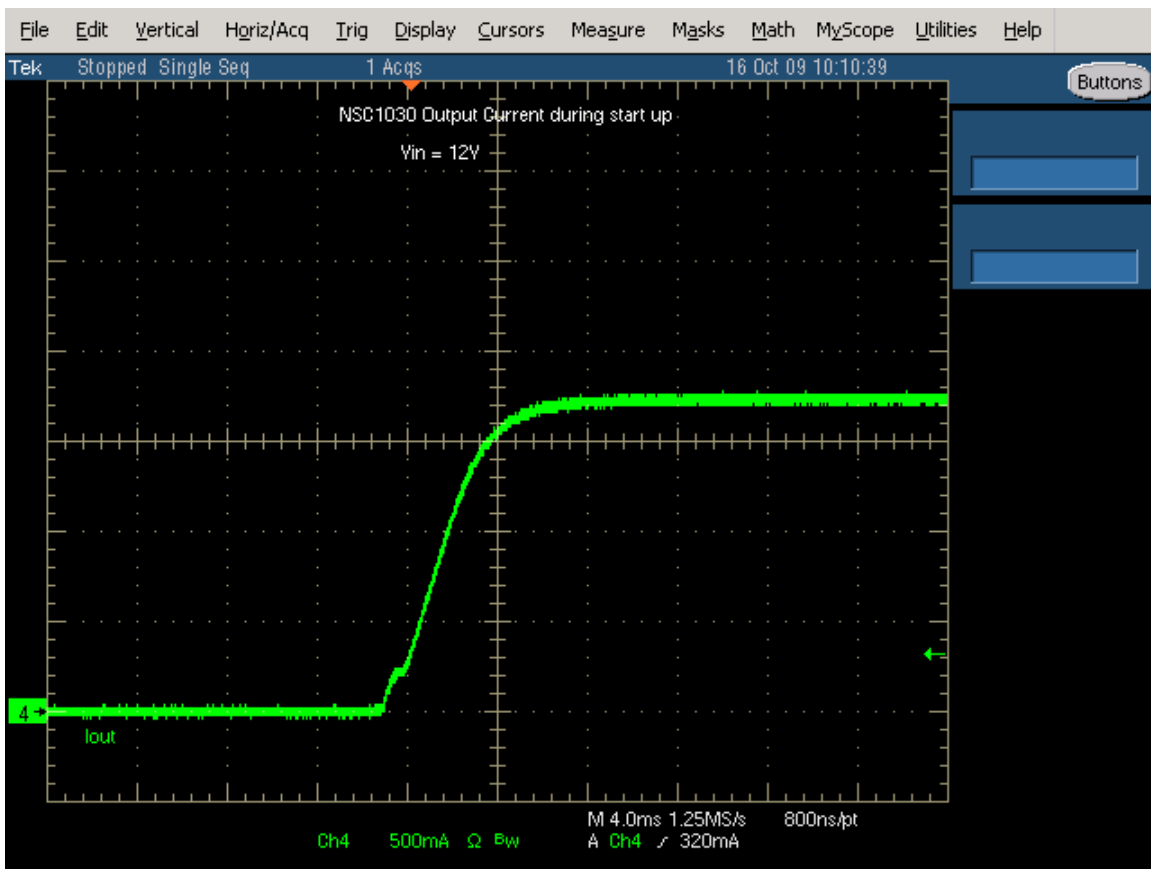
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## 1.0 Circuit Description

It is a Buck Boost configuration where input ranges from 6V to 33V DC. The output has 5 LEDs in the string producing 16.7V in the output. It uses NTC for thermal shutdown thereby protecting the circuit in case of high temperature issues. It can be used in Indoor and Outdoor area SSL, Automotive, General illumination etc.

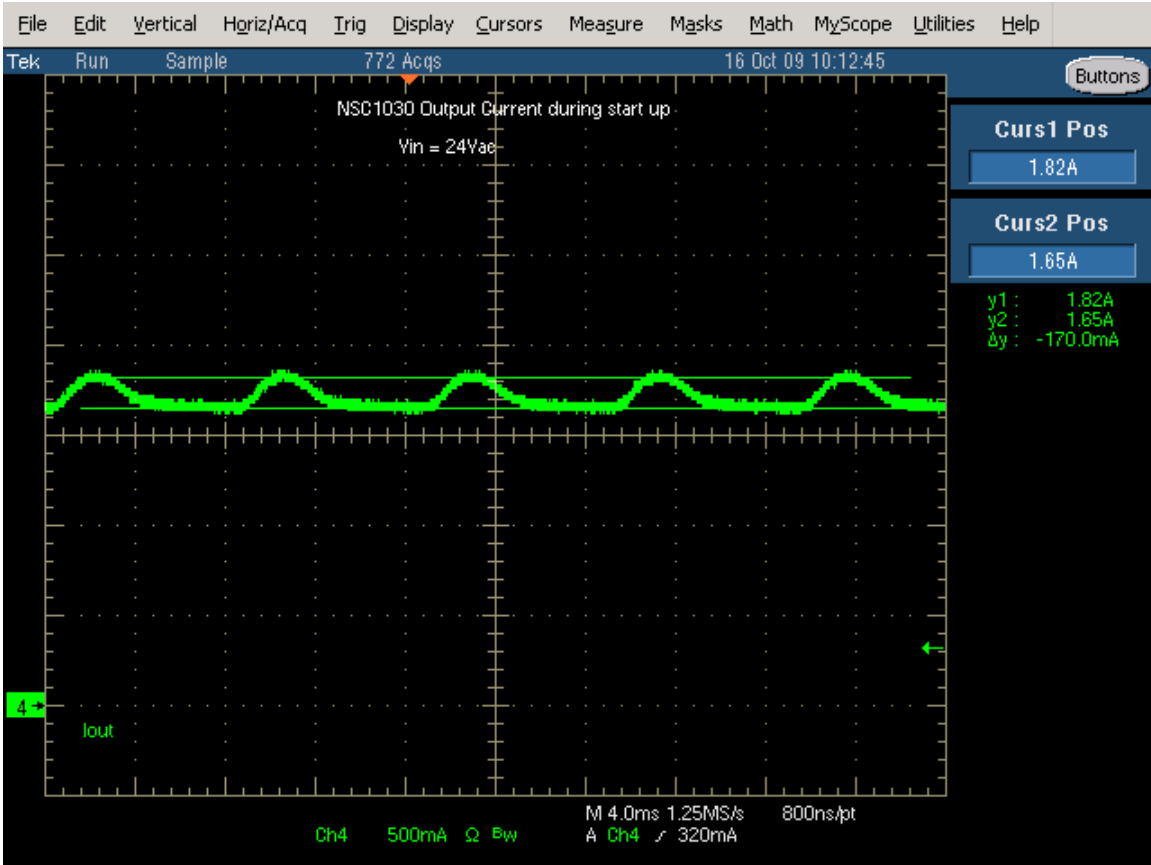
## 2.0 Waveforms

### 2.1 Output Current during startup for $V_{in} = 12V$



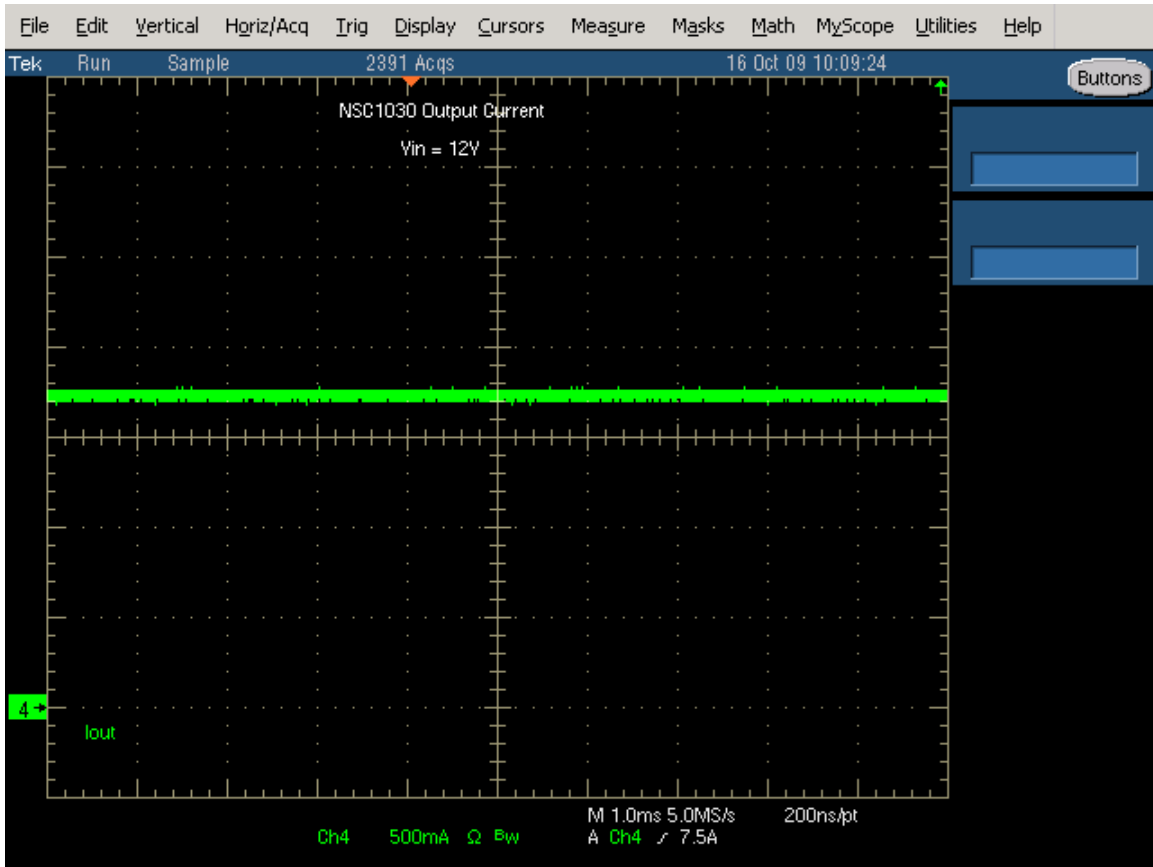
■ Output current

## 2.2 Output Current during startup for Vin = 24V



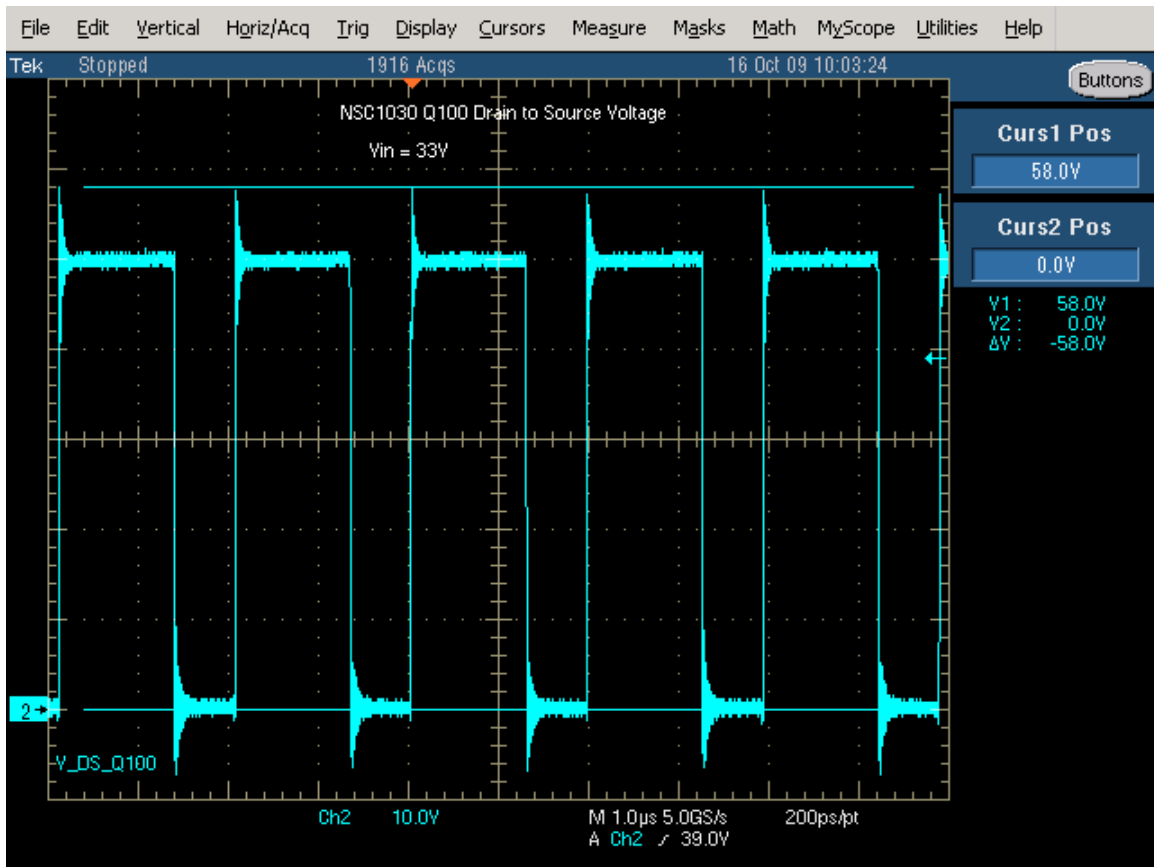
■ Output current

### 2.3 Output Current for Vin = 12V



■ Output current

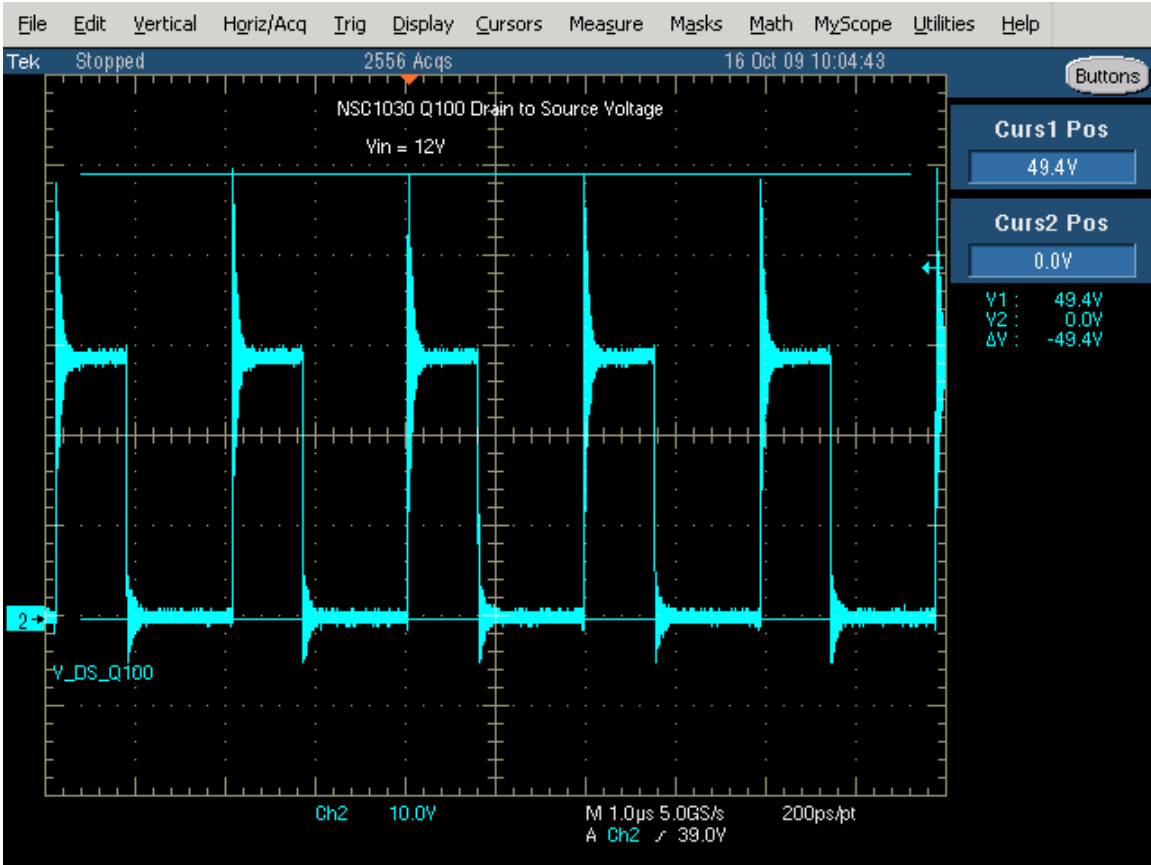
## 2.4 Drain to Source voltage for $V_{in} = 33V$



■ Drain to source voltage



## 2.5 Drain to Source voltage for $V_{in} = 12V$



■ Drain to source voltage

### 3.0 Efficiency results

<b>Efficiency with DC Input</b>				
<b>Vin (Vdc)</b>	<b>Iin (A dc)</b>	<b>Vout (Vdc)</b>	<b>Iout (A dc)</b>	<b>Efficiency</b>
6.025	5.26	16.7	1.57	0.82732
8.003	4.2	16.7	1.76	0.874434
10.023	3.22	16.7	1.75	0.905526
12.075	2.64	16.7	1.752	0.917824
24.023	1.29	16.7	1.72	0.92689
33.02	0.94	16.7	1.71	0.920042
<b>Efficiency with AC Input</b>				
<b>Vin (Vac)</b>	<b>Pin (W)</b>	<b>Vout (Vdc)</b>	<b>Iout (A dc)</b>	<b>Efficiency</b>
23.84	33.09	16.7	1.728	0.872094

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