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### HT3328

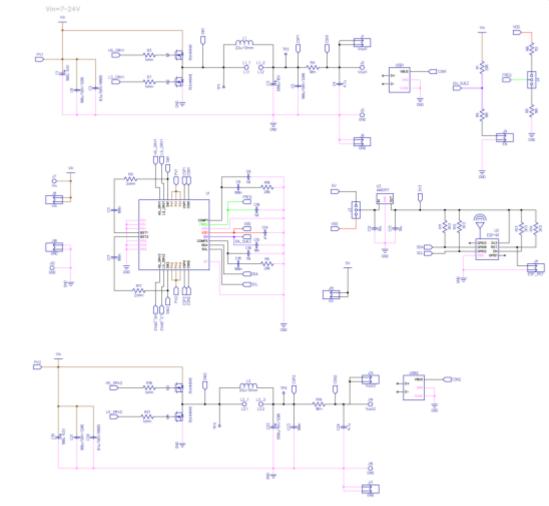
- Part No. : HT3328
- Version: Suez1p3
- Package: QFN32 5mm x 5mm
- Features
  - Dual channel
  - External HS & LS power FET Driver
  - Over Current Protection
  - Over Voltage Protection
  - Internal Vref
  - I2C Control

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### **Evaluation Board – CV Out** Version: HT3328\_R01



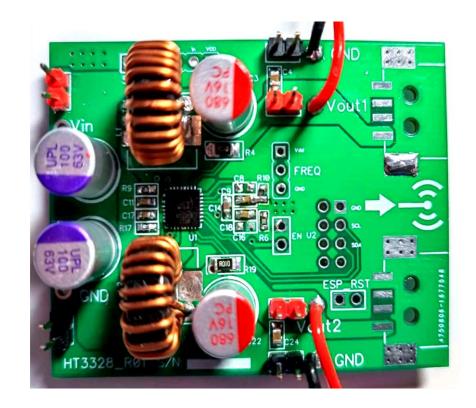
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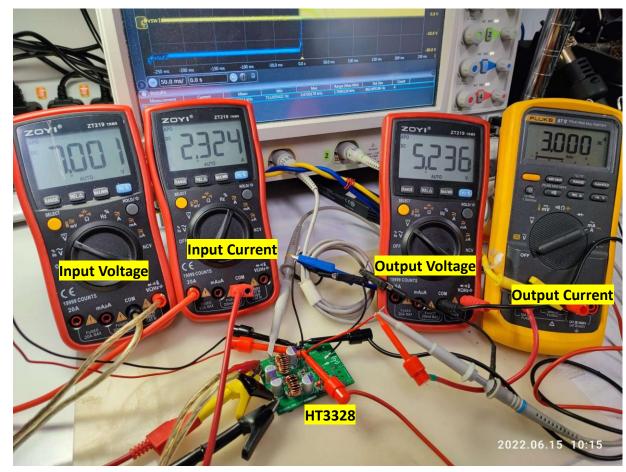


- Test condition (CV out)
  - Vin = 7-30V,
  - Vout = 5V
  - lout = 0-3A
  - L = 22uH
  - Cout = 680uF
  - COMP = 20k + 100nF
  - Fsw = 180 kHz (Z)
  - FREQ = Z





## Measurement Setup



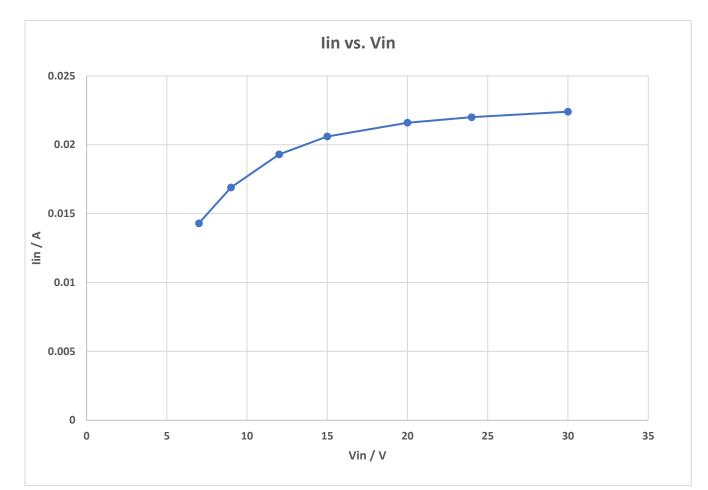
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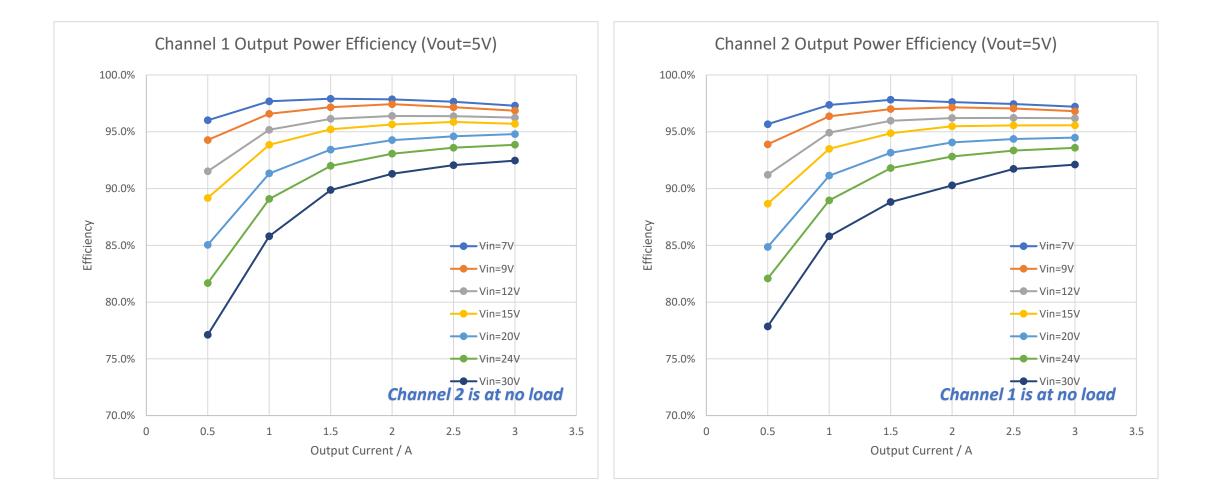
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# Measurement – Quiescent Current at both channels output no loading

Vin /V	lin /A
7	0.0143
9	0.0169
12	0.0193
15	0.0206
20	0.0216
24	0.022
30	0.0224

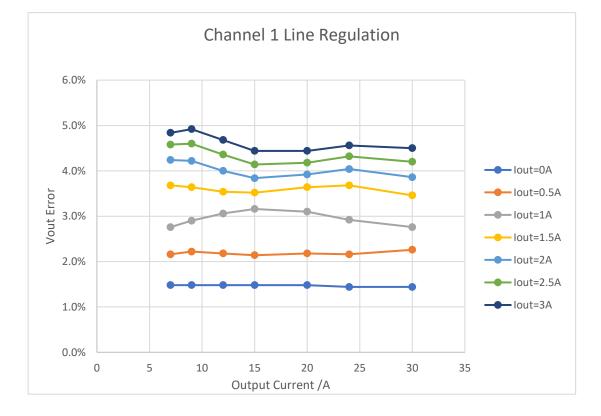


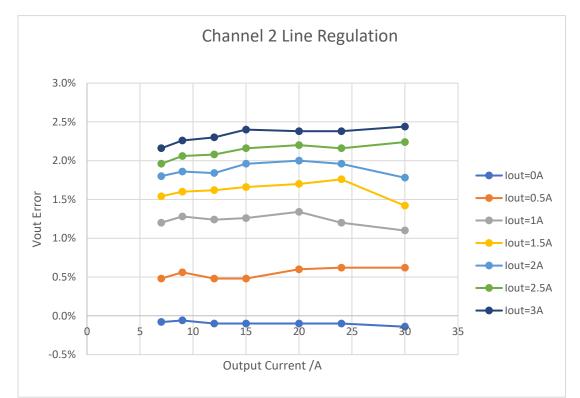
### Measurement - Power Efficiency





### Measurement - Line Regulation





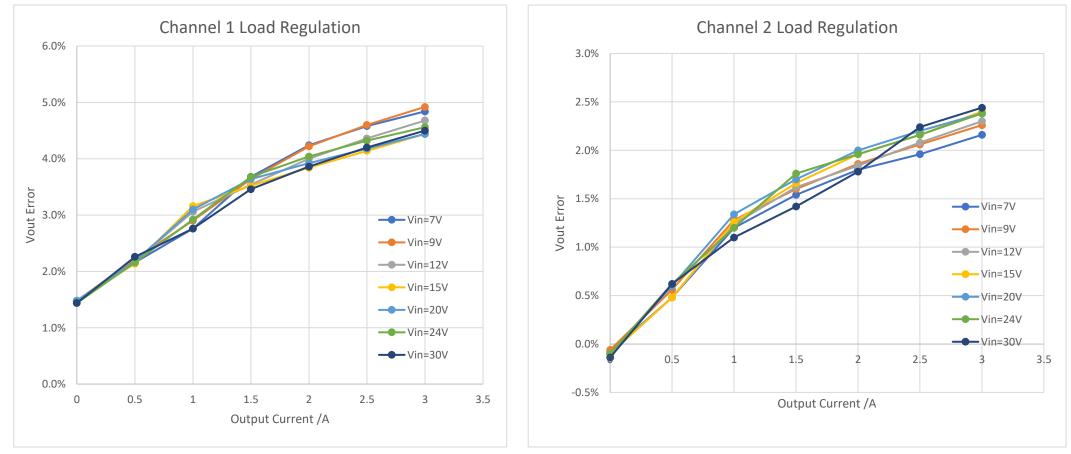
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### Measurement - Load Regulation



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### Reading at Output Full Loading

#### Channel 1 measurement













#### Channel 2 measurement













### Waveforms - Startup (Output at 3A load)



Waveform is captured at channel 1, output is loading at 3A

Yellow: Switch Node Blue:





Keysight Infiniium : Wednesday, June 15, 2012 10:59:10 AM

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### Waveform - Transient Loading

#### **Transient Loading at 0 to 3A**



#### DISCLAIMER Vin=7V, Output ripple ~500mV

#### Vin=30V, Output ripple ~500mV

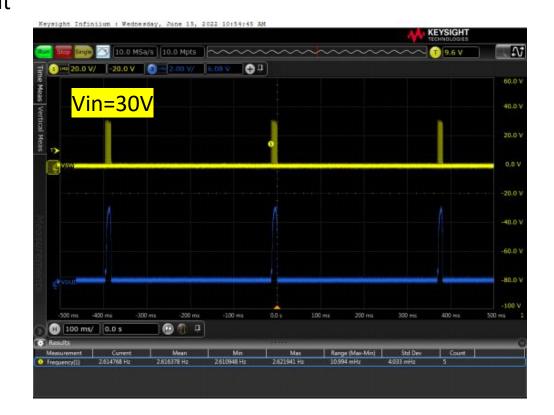
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#### Yellow Trace: Switch Node Blue Trace: DC-DC Output Keysight Infiniium : Wednesday, June 15, 2022 10:55:43 AM KEYSIGHT - 11 3 ING 10.0 V/ -10.0 V 🔕 ING 2.00 V/ 6.08 V 🔂 🕮 30.0 Vin=7V 200 ms 100 ms/ 0.0 s **10 1** Mean Current Min Max Range (Max-Min) Std Dev Count \$32,149911 Hz 993,489457 Hz 2.682571 Hz 2.4740224 kHz 2,4713398 kH

### At Vin=7V, output over current protection is at 3.1A, and then channel 1 runs into hiccup mode.



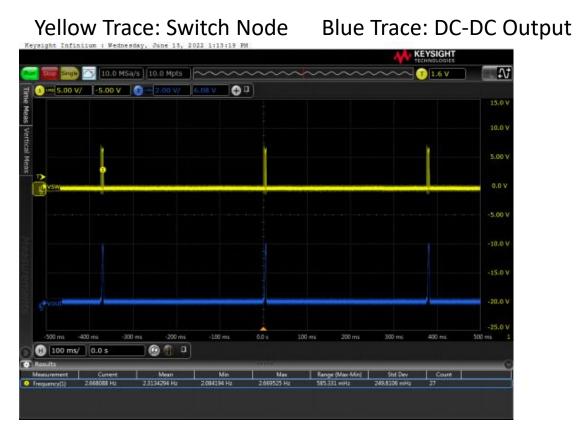
### At Vin=30V, output over current protection is at 3.1A, and then channel 1 runs into hiccup mode.

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At Vin=7V, output over current protection is at 3.16A, and then channel 2 runs into hiccup mode.



At Vin=30V, output over current protection is at 3.16A, and then channel 2 runs into hiccup mode.

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## Summary

- The quiescent current is around 22mA@Vin=30V and 20mA@Vin=12V with switching
- The power efficiency is over 90% at 3A output loading for Vin = 7V to 30V
- The output setpoint of Vout at channel 1 is > 1% and less than 1% at channel 2.
- The line regulation error of 5V Vout is within 1% at different loading condition for both channel 1 and 2
- The load regulation of 5V Vout at channel 1 is around 4% and 3% at channel 2
- The output can start up smoothly at Vin = 12V or 30V with full 3A loading
- The OCP is around 3.1A for both channel 1 and channel 2 outputs.

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