

# Dual 800mA Low Quiescent Current High Efficiency Synchronous Buck Regulator-Small Form Factor

## Description

The ISL8088EVAL2Z kit is intended for use by individuals with requirements for Point-of-Load applications sourcing from 2.75V to 5.5V. The ISL8088EVAL2Z board is used to demonstrate the performance of the ISL8088 low quiescent current mode converter.

The ISL8088 is offered in a 3mmx3mm 10 Ld DFN package with 1mm maximum height. The complete converter occupies less than 0.120in<sup>2</sup> area.

## Recommended Equipment

The following materials are recommended to perform testing:

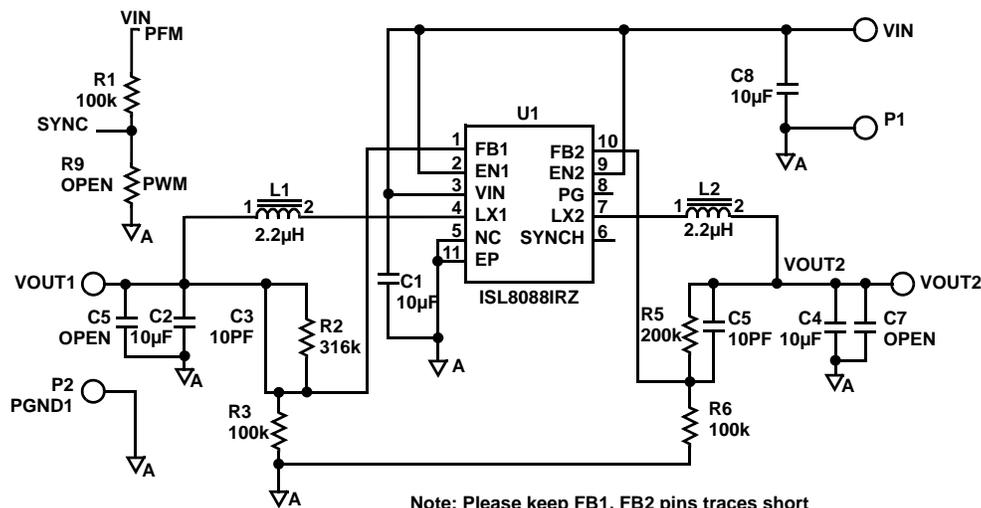
- 0V to 10V Power Supply with at least 3A source current capability or 5V battery
- Electronic Loads capable of sinking current up to 3A
- Digital Multimeters (DMMs)
- 100MHz quad-trace oscilloscope
- Signal generator

## Quick Setup Guide

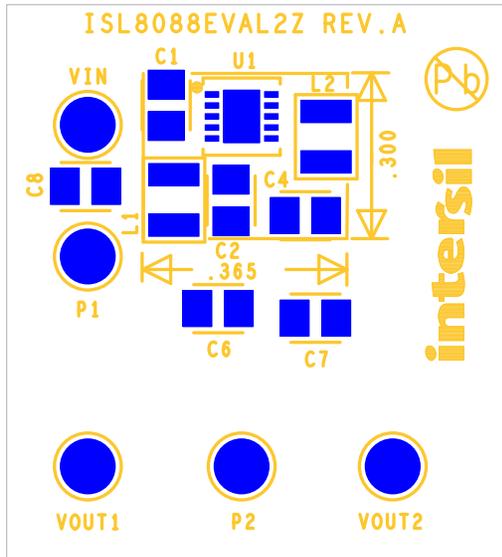
1. Ensure that the circuit is correctly connected to the supply and loads prior to applying any power.
2. Connect the bias supply to VIN. Plus terminal to VIN and negative return to P1.
3. Turn on the power supply.
4. Verify the output voltage is 2.5V for V<sub>OUT1</sub> and 1.8V for V<sub>OUT2</sub>.

## Key Features

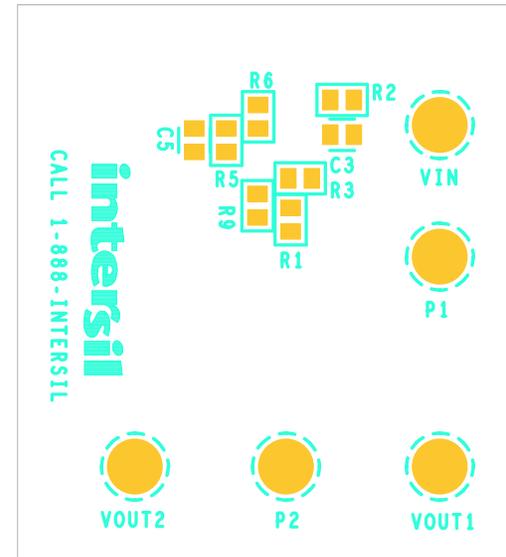
- Dual 800mA High Efficiency Synchronous Buck Regulator with up to 97% Efficiency
- 800mA Guaranteed Output Current per channel
- Power-Goods (PG) output with 1ms Delay
- 2.75V to 5.5V Supply Voltage
- 3% Output Accuracy Over-Temperature/Load/Line
- Start up with Pre-biased Output
- Internal Digital Soft-Start - 2ms
- Soft-Stop Output Discharge During Disabled
- 30µA Quiescent Supply Current in PFM Mode
- Selectable Forced PWM Mode and PFM Mode
- External Synchronization up to 4MHz
- Typical 6.5µA Logic Controlled Shutdown Current
- 100% Maximum Duty Cycle for Lowest Dropout
- Internal Current Mode Compensation
- Peak Current Limiting.
- Over-Temperature Protection
- Independent Enable



**FIGURE 1. ISL8088EVAL2Z SCHEMATIC**



**FIGURE 2. TOP COMPONENTS**



**FIGURE 3. BOTTOM SILK SCREEN**

**TABLE 1. BILL OF MATERIALS**

PART NUMBER	QTY	UNIT	REFERENCE DESIGNATOR	DESCRIPTION	MANUFACTURER	MANUFACTURER PART
ISL8088EVAL2ZREVAPCB	1	ea		PWB-PCB, ISL8088EVAL2Z, REVA, ROHS	IMAGINEERING INC	ISL8088EVAL2ZREVAPCB
GRM21BR60J106KE01-T	4	ea	C1, C2, C4, C8	CAPACITOR, SMD, 0805, 10µF, 6.3V, 10%, X5R	MURATA	GRM21BR60J106KE01L
H1046-DNP	0	ea	C6, C7	CAP,SMD, 0805, DNP-PLACE HOLDER, ROHS		
500R07S100JV4T-T	2	ea	C3, C5	CAP-RF HIQ, SMD, 0402, 10pF, 50V, 5%, COG, ROHS	JOHANSON TECHNOLOGY	500R07S100JV4T
MDT2520-CR2R2M	2	ea	L1, L2	COIL-PWR INDUCTOR, SMD, 2520, 2.2µH, 20%, 1.35A, ROHS	TOKO	MDT2520-CR2R2M
5000	3	ea	VIN, VOUT1, VOUT2	CONN-MINI TEST PT, VERTICAL, RED, ROHS	KEYSTONE	5000
5001	2	ea	P1, P2	CONN-MINI TEST PT, VERTICAL, BLK, ROHS	KEYSTONE	5001
ISL8088IRZ	1	ea	U1	IC-DUAL SYNC. BUCK REGULATOR, 10P, DFN, 3X3, ROHS	INTERISIL	ISL8088IRZ
H2510-01003-1/16W1-T	3	ea	R1, R3, R6	RES, SMD, 0402, 100k, 1/16W, 1%, TF, ROHS	PANASONIC	ERJ2RKF1003
H2510-02003-1/16W1-T	1	ea	R5	RES, SMD,0402, 200k, 1/16W, 1%, TF, ROHS	ROHM	MCR01MZPF2003
H2510-03163-1/16W1-T	1	ea	R2	RES, SMD, 0402, 316k, 1/16W, 1%, TF, ROHS	PANASONIC	ERJ-2RKF3163X
H2510-DNP	0	ea	R9	RES, SMD, 0402, DNP, DNP, DNP, TF, ROHS		

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