

i3AxxA-C01-EVK-S1; i6AxxA-C01-EVK-S1; i367X-C01-EVK-S0

Evaluation Kit Manual for i3A, i6A and RGA Non-Isolated DC-DC Series

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1. Introduction

This evaluation kit has been designed to provide an easy way to characterize the product performance and its features. It is intended to aid customers and determine the product suitability for the target application. The evaluation board incorporates the required external components to demonstrate the complete product functionality. It also includes other components (e.g. test points, etc...) to facilitate a successful end user experience. Not all these external components are required if the product features are not needed. Details of the external components, schematics, and PCB layout are provided in this documentation for reference only. Final design and qualification needs to be verified at customer's end system level.

2. Ordering Information

TDK-Lambda offers a wide variety of non-isolated dc-dc power modules in the [i3A](#) / [i6A](#) series. Not every product is currently available in an evaluation kit. The table below includes description and ratings which should help in selecting the most applicable evaluation kit.

Evaluation Kit Part Number	Non-Isolated DC-DC Module (Included and Mounted on the Evaluation Board)					
	DC-DC Module Part Number	Type	I/P Range	O/P Range	O/P Current (max)	O/P Power (Max)
i3A05A-C01-EVK-S1	i3A4W005A150V-001-R	Buck	9 – 53 V	5.0 – 30 V	4.5 A	100 W
i3A08A-C01-EVK-S1	i3A4W008A033V-001-R	Buck	9 – 53 V	3.3* – 16.5 V	8 A	100 W
i6A10A-C01-EVK-S1	i6A4W010A033V-001-R	Buck	9 – 53 V	3.3* – 40 V	10 A	250 W
i6A14A-C01-EVK-S1	i6A24014A033V-001-R	Buck	9 – 40 V	3.3* – 24 V	14 A	250 W
i6A20A-C01-EVK-S1	i6A4W020A033V-001-R	Buck	9 – 53 V	3.3* – 15 V	20 A	250 W
i367X-C01-EVK-S0	No Module Installed	Evaluation board can be used for the RGA Series.				

* Evaluation kit output trim adjustment configuration is limited to 3.6 V minimum. Contact technical support at tla.powersolutions@tdk.com if lower voltage is needed.



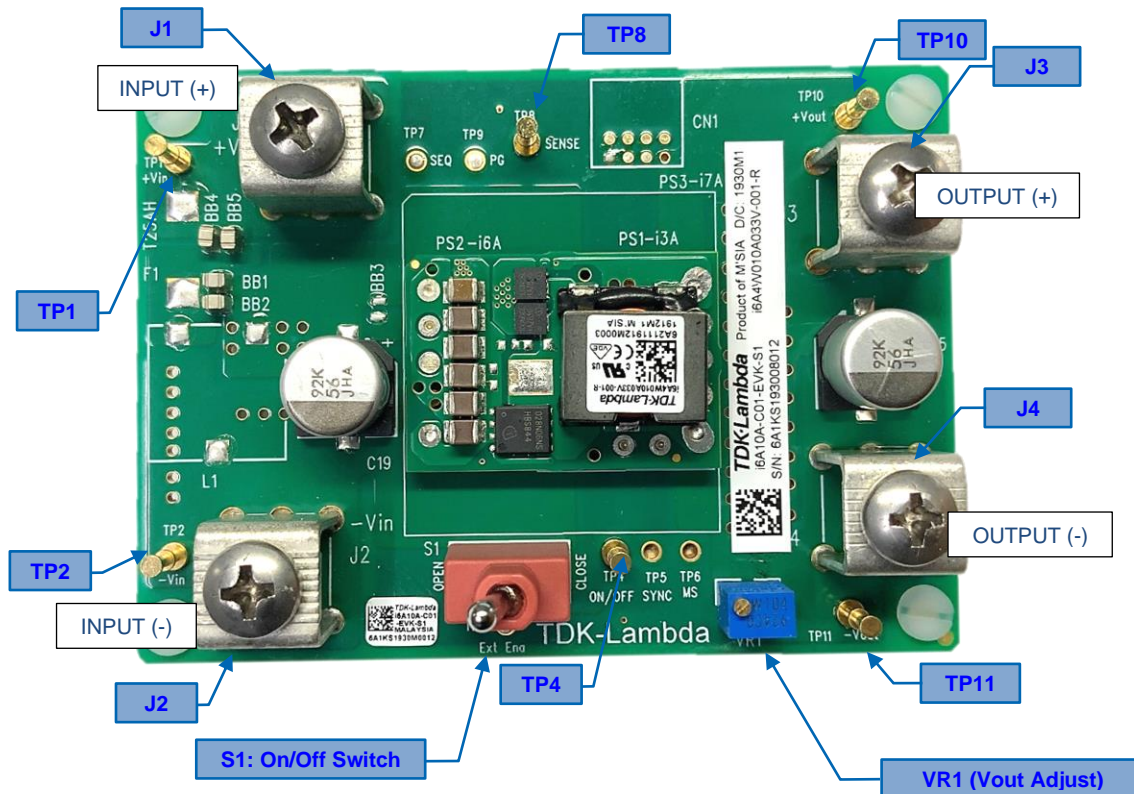
IMPORTANT INFORMATION

- Observe proper safety and laboratory procedures when testing electronic products. This list serves as general guide only and not a substitute for common sense and best practices.
- Before applying power, double check and ensure all connections to the evaluation board interface are correct (e.g. Input source polarity connections, etc...).
- This evaluation board is not populated with an input fuse. An input fuse can be populated in PCB location F1. Check the product specifications for the input fuse ratings and the evaluation board schematics included this manual. Make sure the existing jumper connections, BB4 and BB5, are removed when adding the fuse.
- Although highly efficient, these high-power density modules can dissipate significant amounts of power, especially at heavy load. Care should be taken to ensure adequate cooling is provided and the modules are operated within the thermal specifications outlined in the product data sheets. Heat sink and base plate versions of the [i7A](#) / [i7C](#) family, ruggedized and enclosed [RGA](#), [RGB](#) and [RGC](#) series are available for use in demanding environments.
- This evaluation kit is designed for general laboratory use. It is not intended for installation in end customer product or equipment.
- Please check the pertinent product (DC-DC Module) datasheets and specifications for complete information.

3. General Features

- Screw Terminals for secured input and output connections
- Toggle switch for Remote ON/OFF
- Test points / Scope probe hook-ups for ease of measurement
- Trim Potentiometer for adjusting the output voltage setting
- Component PCB pad provisions for: Input fuse, input inductor, additional input and output capacitance*, output header connector for optional features and signals.

* Note the output capacitor value may need to be adjusted to meet transient response or ripple requirements of the final application. Refer to product data sheet for a range of acceptable values.



Test Point	Description	Test Point	Description
TP1	Vin (+)	TP8	SENSE +
TP2	Vin (-) / GND	TP9	<i>Not Populated</i>
TP3	<i>Not Populated</i>	TP10	Vout (+)
TP4	ON / OFF	TP11	Vout (-) / GND
TP5	<i>Not Populated</i>		
TP6	<i>Not Populated</i>		

Please double check the individual product series datasheets for the features that it supports.

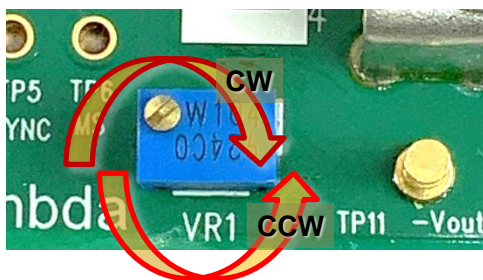
Screw Terminal	Description	Screw Terminal	Description
J1	Vin (+)	J3	Vout (+)
J2	Vin (-) / GND	J4	Vout (-) / GND

4. Turn-on / Turn-off module by switch



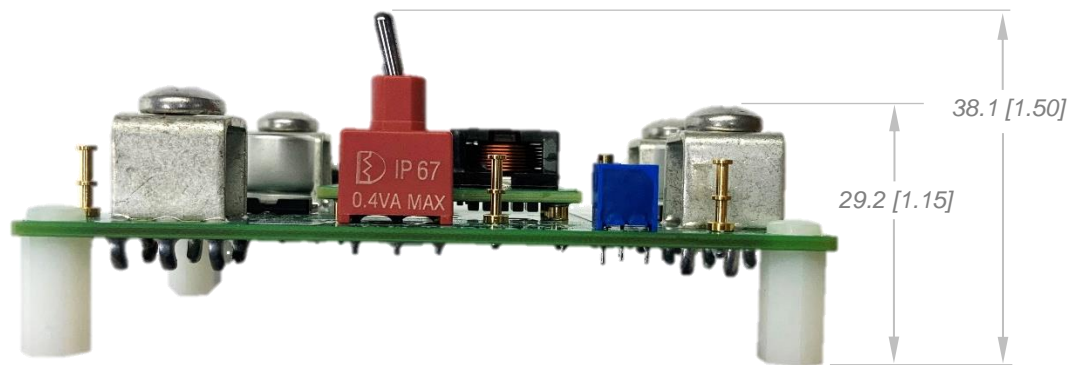
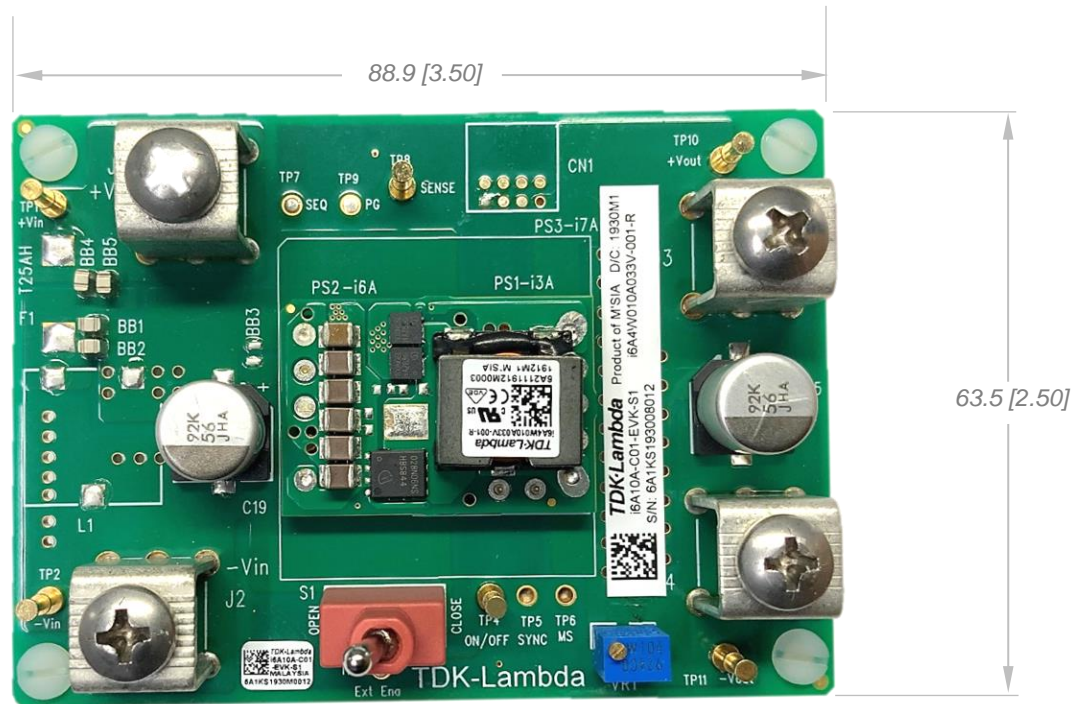
Change position of toggle switch "S1" to "CLOSE" turns-on the power supply unit.

5. Change Output Voltage

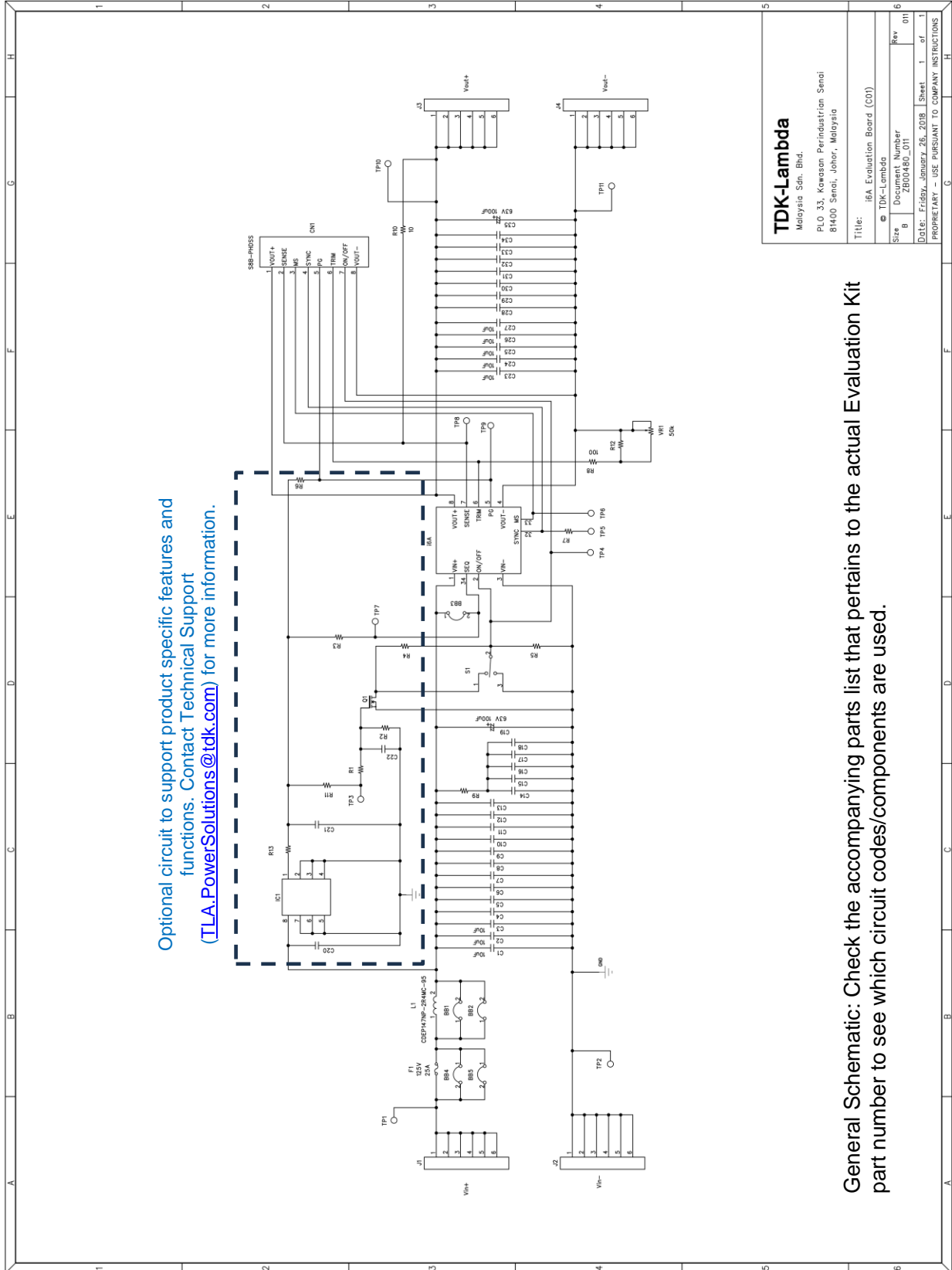


Turn screw on trimmer pot "VR1" to change the output voltage.
Turn clockwise to increase output voltage.
Turn counterclockwise to decrease output voltage.

6. Mechanical Outline [mm /in]



7. Schematic



Optional circuit to support product specific features and functions. Contact Technical Support (TLA.PowerSolutions@tdk.com) for more information.

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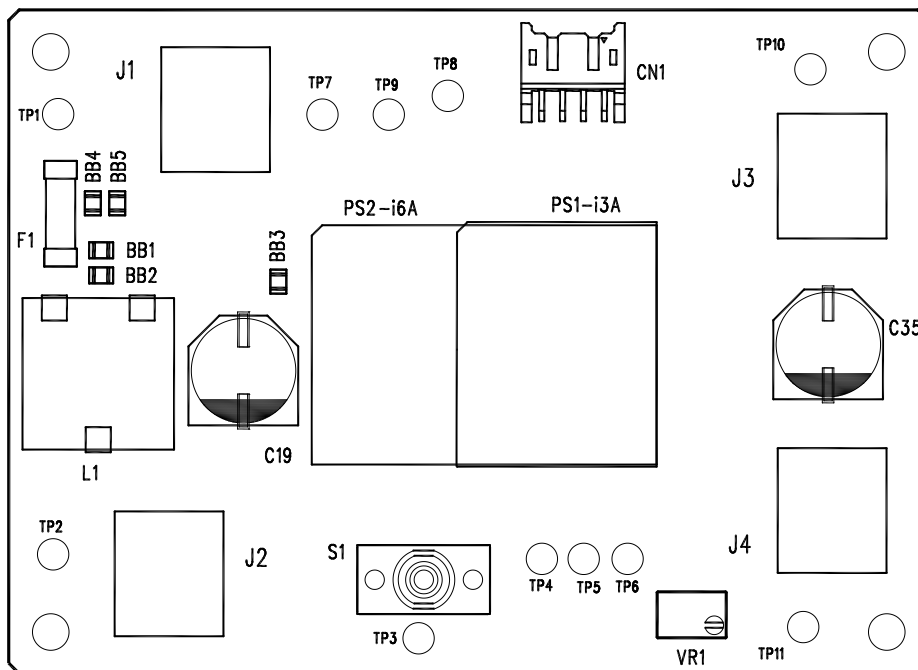
Malaysia Sdn. Bhd.
 PLO 33, Kawasan Perindustrian Senai
 81400 Senai, Johor, Malaysia

General Schematic: Check the accompanying parts list that pertains to the actual Evaluation Kit part number to see which circuit codes/components are used.

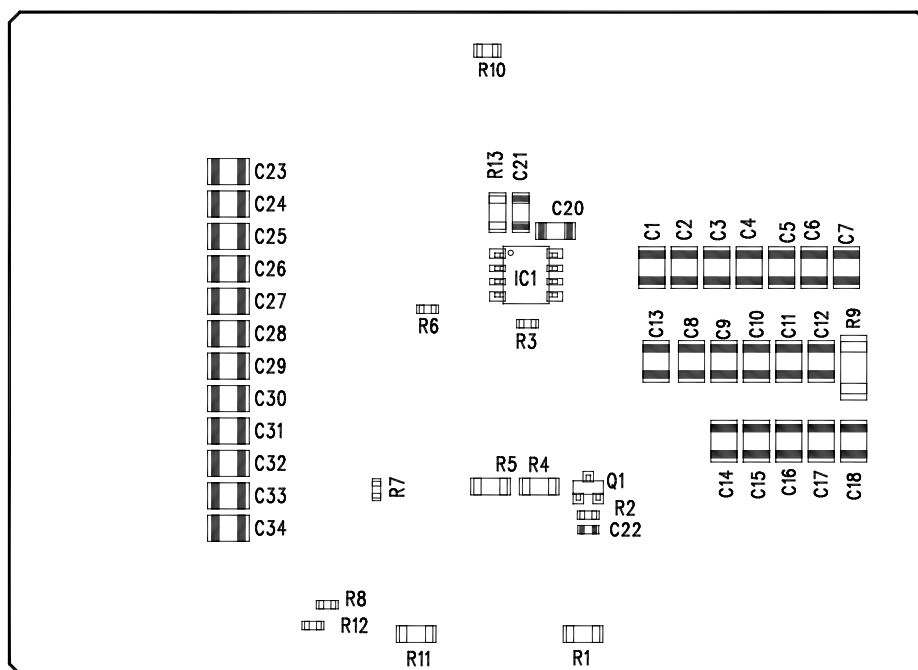
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© TDK-Lambda			
Size	Document Number	Rev	
B	ZB00480_01	011	
Date: Friday, January 26, 2018		Sheet	1 of 1
PROPRIETARY - USE PURSUANT TO COMPANY INSTRUCTIONS			

8. PCB Layout

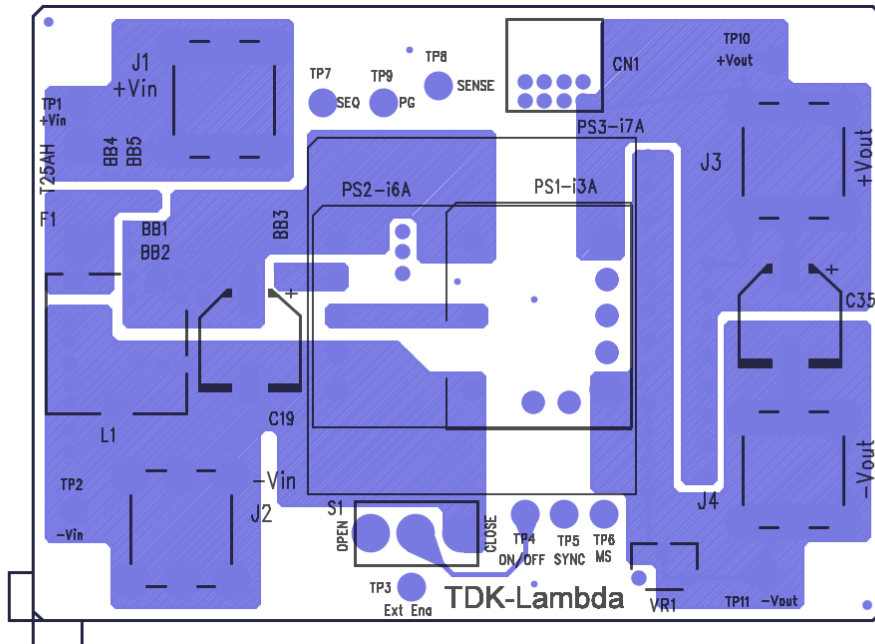
Component Layout (Top)



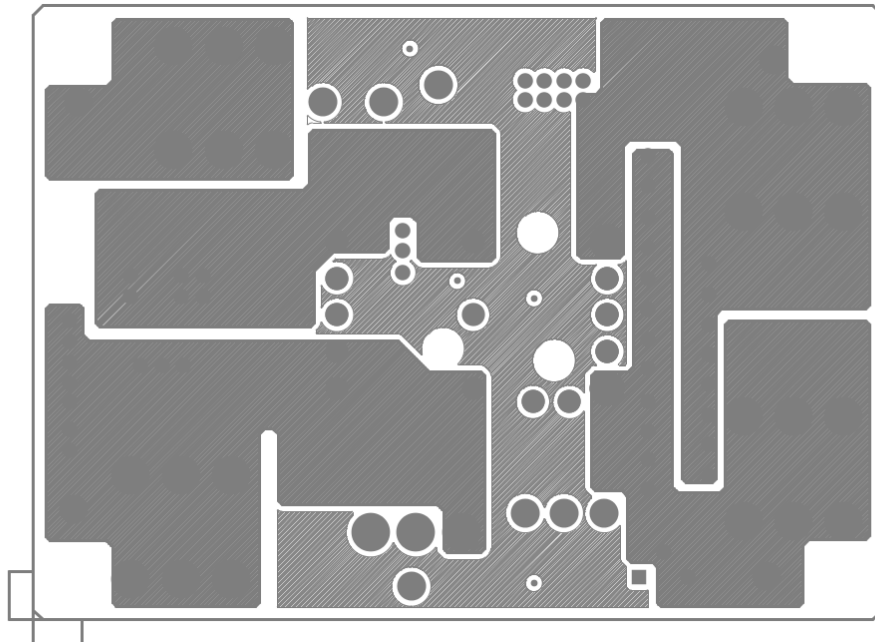
Component Layout (Bottom)



PCB Top Layer

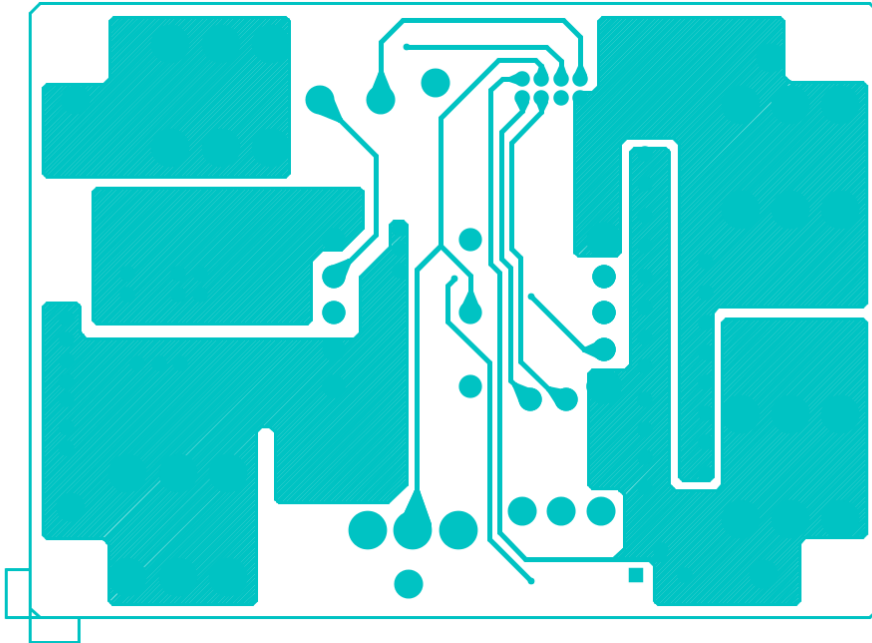


PCB Layer 2

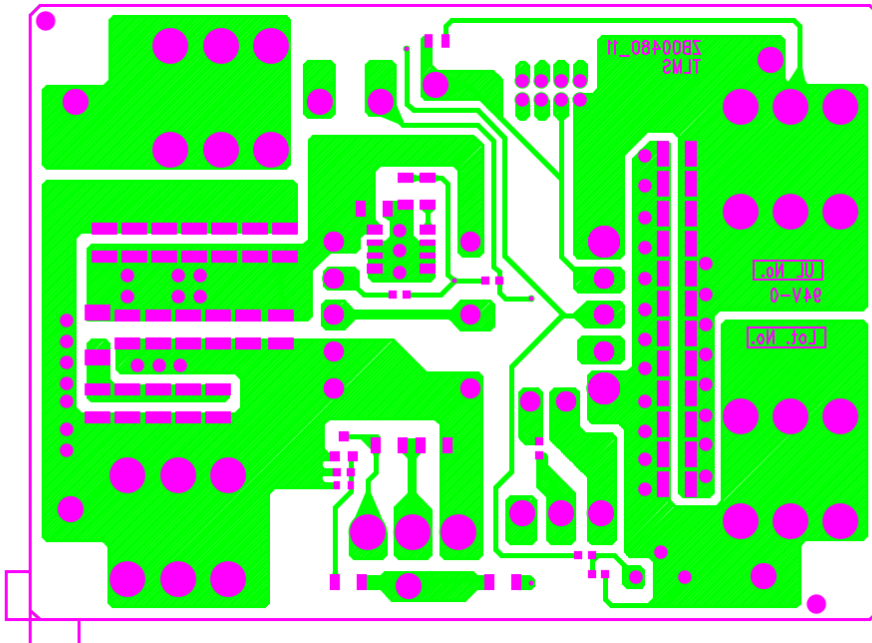


PCB Layout (continued)

PCB Layer 3



PCB Bottom Layer



9. Parts List: i3AxxA-C01-EVK-S1

Evaluation Kit Part Number		i3A05A-C01-EVK-S1		i3A08A-C01-EVK-S1	
Schematic Circuit Code	Part Type	Manufacturer (Mfr)	Mfr Part No.	Manufacturer (Mfr)	Mfr Part No.
PS1	DC-DC Module	TDK Lambda	i3A4W005A150V-001-R	TDK Lambda	i3A4W008A033V-001-R
C1, C2, C3, C23, C24, C25, C26, C27	Capacitor	MURATA	GRM32ER71J106MA12L	<--	<--
C19, C35	Capacitor	NI-CHEMI	HHXA630ARA560MJA0G	<--	<--
R8	Resistor	KOA	RK73H1JTTD1000F	<--	<--
R10	Resistor	KOA	RK73H2ATTD10R0F	<--	<--
VR1	Trim Resistor	BOURNS	3266W-1-503LF	<--	<--
S1	Switch	LIGHT COUNTRY	1AS3T2B4M2RE	<--	<--
BB1, BB2, BB4, BB5	Bus Bar	TDK Lambda	ZP00185	<--	<--
J1, J2, J3, J4	Terminal	KEYSTONE	8196	<--	<--
TP1, TP2, TP4, TP8 TP10, TP11	TEST PIN	MAC8	WT-2-2	<--	<--

10. Parts List: i6AxxA-C01-EVK-S1

Evaluation Kit Part Number		i6A10A-C01-EVK-S1		i6A14A-C01-EVK-S1		i6A20A-C01-EVK-S1	
Schematic Circuit Code	Part Type	Manufacturer (Mfr)	Mfr Part No.	Manufacturer (Mfr)	Mfr Part No.	Manufacturer (Mfr)	Mfr Part No.
PS1	DC-DC Module	TDK Lambda	i6A4W010A033V-001-R	TDK Lambda	i6A24014A033V-001-R	TDK Lambda	i6A4W020A033V-001-R
C1, C2, C3, C23, C24, C25, C26, C27	Capacitor	MURATA	GRM32ER71J106MA12L	<--	<--	<--	<--
C19, C35	Capacitor	NI-CHEMI	HHXA630ARA560MJA0G	<--	<--	<--	<--
R8	Resistor	KOA	RK73H1JTTD1000F	<--	<--	<--	<--
R10	Resistor	KOA	RK73H2ATTD10R0F	<--	<--	<--	<--
VR1	Trim Resistor	BOURNS	3266W-1-104LF	BOURNS	3266W-1-503LF	<--	<--
S1	Switch	LIGHT COUNTRY	1AS3T2B4M2RE	<--	<--	<--	<--
BB1, BB2, BB4, BB5	Bus Bar	TDK Lambda	ZP00185	<--	<--	<--	<--
J1, J2, J3, J4	Terminal	KEYSTONE	8196	<--	<--	<--	<--
TP1, TP2, TP4, TP8 TP10, TP11	TEST PIN	MAC8	WT-2-2	<--	<--	<--	<--

11. Parts List: i367X-C01-EVK-S0

Evaluation Kit Part Number		i367X-C01-EVK-S0	
Schematic Circuit Code	Part Type	Manufacturer (Mfr)	Mfr Part No.
PS1	DC-DC Module	TDK Lambda	None
C1, C2, C3, C23, C24, C25, C26, C27	Capacitor	MURATA	GRM32ER71J106MA12L
C19, C35	Capacitor	NI-CHEMI	HHXA630ARA560MJA0G
R8	Resistor	KOA	RK73H1JTTD1000F
R10	Resistor	KOA	RK73H2ATTD10R0F
VR1	Trim Resistor	BOURNS	3266W-1-503LF
S1	Switch	LIGHT COUNTRY	1AS3T2B4M2RE
BB1, BB2, BB4, BB5	Bus Bar	TDK Lambda	ZP00185
J1, J2, J3, J4	Terminal	KEYSTONE	8196
TP1, TP2, TP4, TP8 TP10, TP11	TEST PIN	MAC8	WT-2-2



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