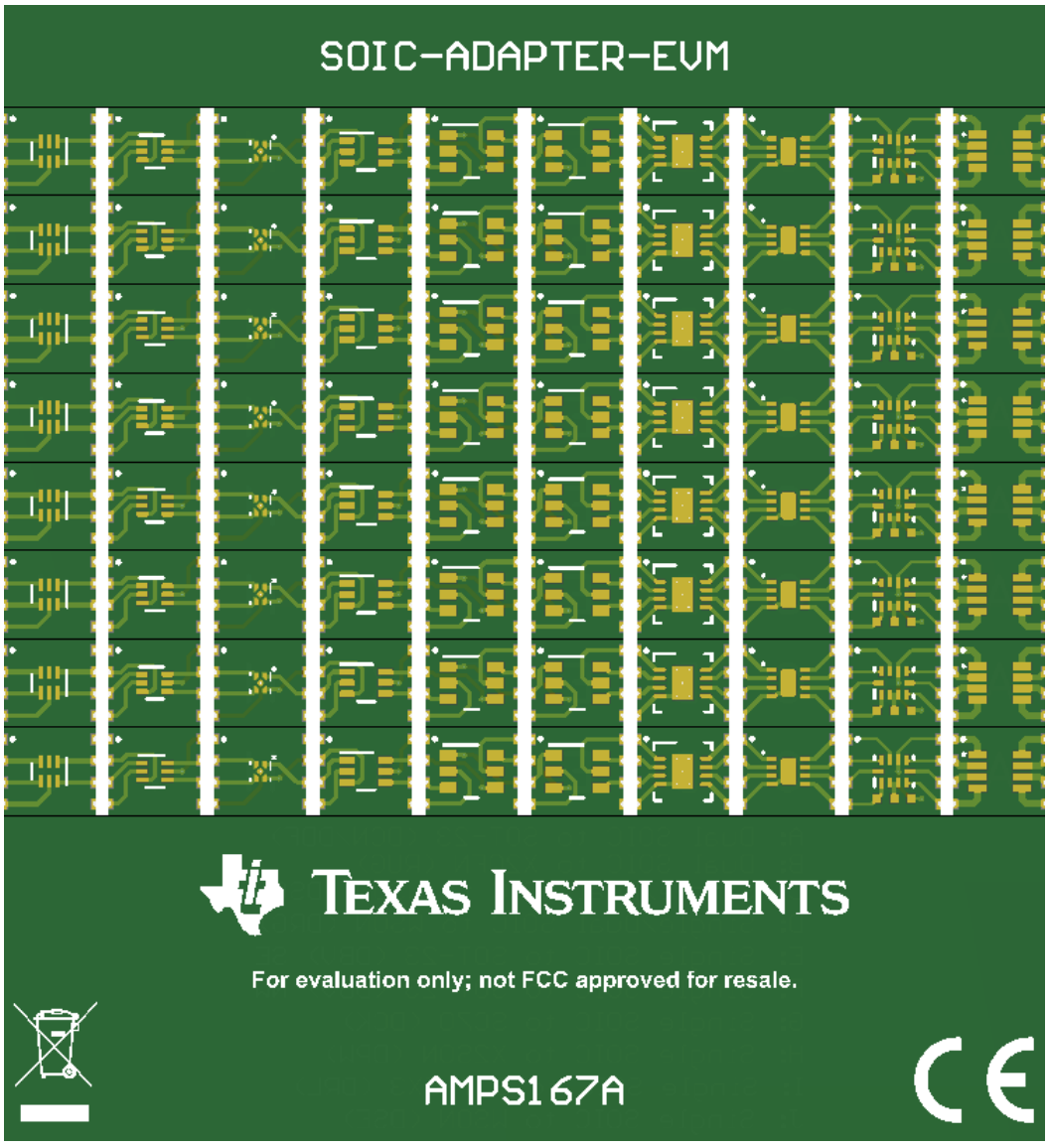
User's Guide

SOIC-ADAPTER-EVM

Abstract

This user's guide contains support documentation for the SOIC-ADAPTER evaluation module (EVM). Included in this document is a description of how to use the EVM, the printed circuit board (PCB) layout, and the bill of materials (BOM) for the SOIC-ADAPTER-EVM.



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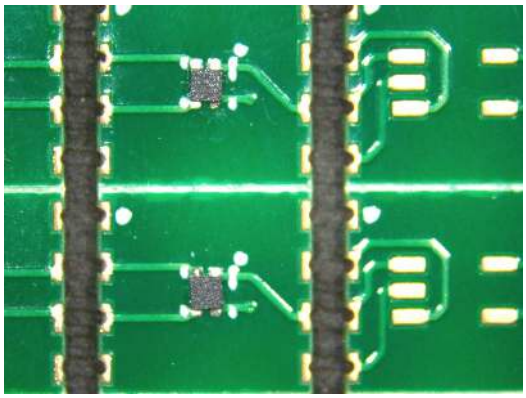
Trademarks

1 Introduction

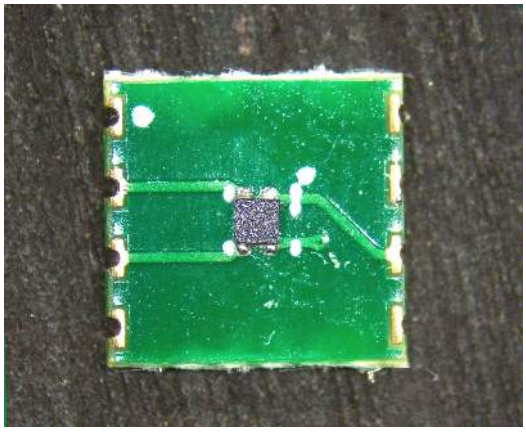
The SOIC-ADAPTER-EVM allows for evaluation of 10 different packages onto single and dual-channel SOIC 8-pin footprints of operational amplifiers on existing PCBs. This permits the user to test op amps in different packages without making changes to the existing PCB.

2 How to Use

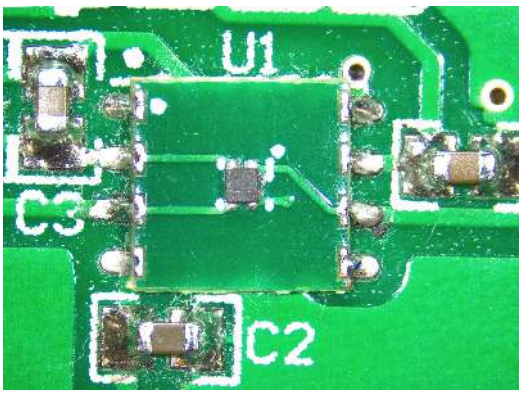
The SOIC-ADAPTER-EVM comes depopulated. Devices must be ordered separately. To find a specific device in a specific package, use the Find Product by Package search tool.



Solder the IC(s) to the adapter PCB. Parts may be hand soldered or attached with hot air reflow techniques.



Gently flex panel at score lines to separate adapter boards.



Position the adapter board carefully over the footprint and solder it on.

3 Adapter Options

The SOIC-ADAPTER-EVM allows for numerous packages to be adapted to a SOIC 8-pin footprint. Each adapter option has a corresponding letter on the back of the PCB to help better identify them. Table 3-1 shows each corresponding board label, package designator, TI package designator, and pin count.

Table 3-1. Device Recommendations

Board Labeled on the Back	Package Designator	TI Package Designator	Pin Count
A	SOT-23	DCN/DDF	8
B	X2QFN	RUG	10
C	WSON	DSG	8
D	WSON	DRG	8
E	SOT-23	UDBV	5/6
F	SOT-23	DBV	5/6
G	SC70	DCK	5/6
H	X2SON	DPW	5
I	SOT-5X3	DRL	5/6
J	WSON	DSE	6

3.1 A: SOT-23 (DCN/DDF)

As shown in Figure 3-1, a SOT-23 (DCN/DDF) device can be adapted to a dual-channel SOIC footprint.

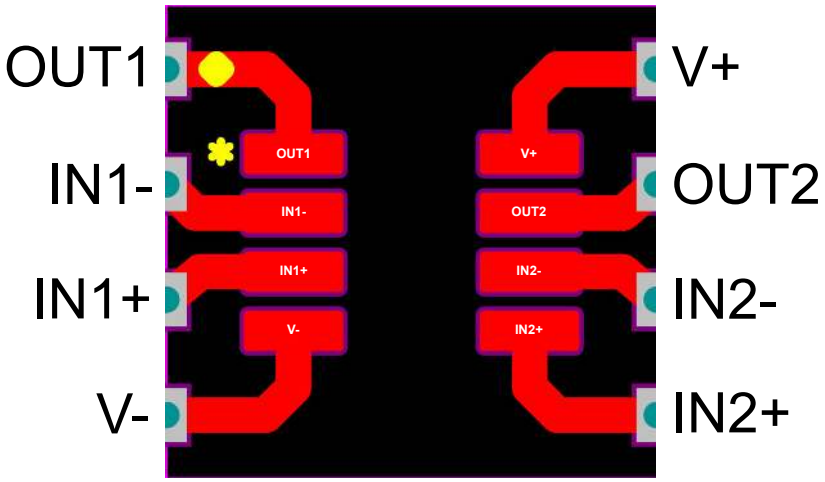


Figure 3-1. Dual SOIC to SOT-23 (DCN/DDF)

3.2 B: X2QFN (RUG)

As shown in Figure 3-2, a X2QFN (RUG) device can be adapted to a dual-channel SOIC footprint.

The X2QFN adapter board has three additional pads for a 0402 resistor to allow the shutdown (SD) pins to be tied to either V+ or V-. These pads are provided since many op amps require an external pull-up or pull-down resistor to bring the op amp out of shutdown.

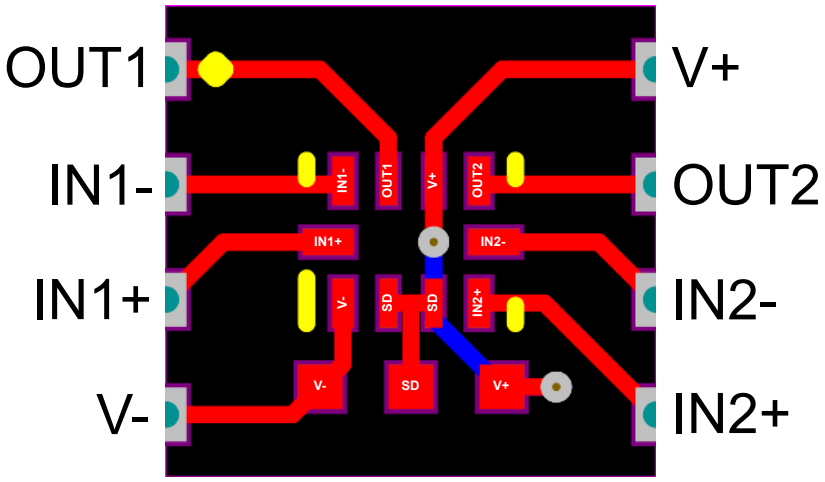


Figure 3-2. Dual SOIC to X2QFN (RUG)

3.3 C: WSON (DSG)

The WSON (DSG) board can be used to adapt a dual-channel WSON (DSG) device to dual-channel SOIC footprint and a single-channel WSON (DSG) device to single-channel SOIC footprint, as shown in Figure 3-3 and Figure 3-4 respectfully. For single-channel WSON (DSG) devices, both the shutdown (SD) and non-shutdown variants are supported.

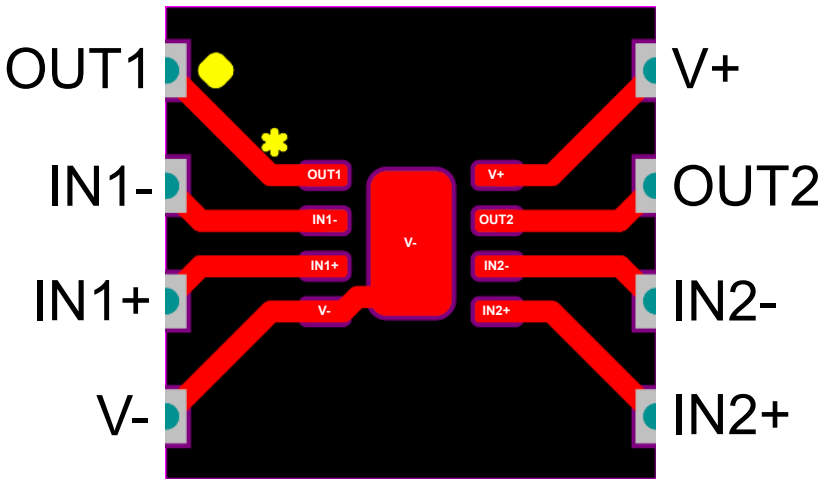


Figure 3-3. Dual SOIC to WSON (DSG)

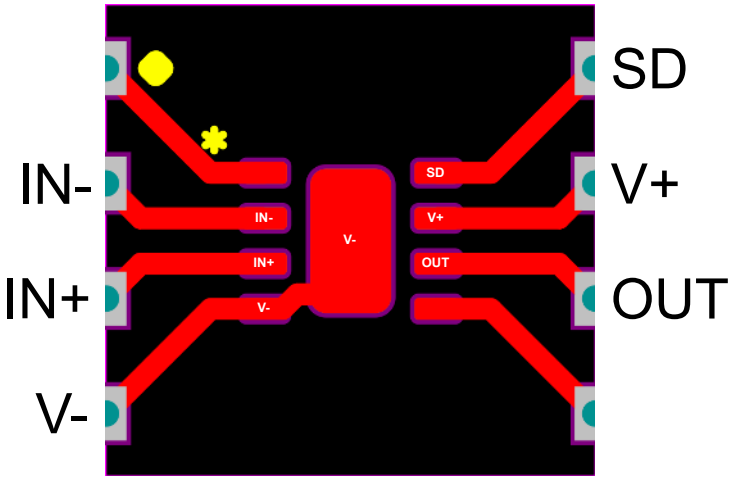


Figure 3-4. Single SOIC to WSON (DSG)

3.4 D: WSON (DRG)

The WSON (DRG) board can be used to adapt a dual-channel WSON (DRG) device to dual-channel SOIC footprint and a single-channel WSON (DRG) device to single-channel SOIC footprint, as shown in Figure 3-5 and Figure 3-6. For single-channel WSON (DRG) devices, both the shutdown (SD) and non-shutdown variants are supported.

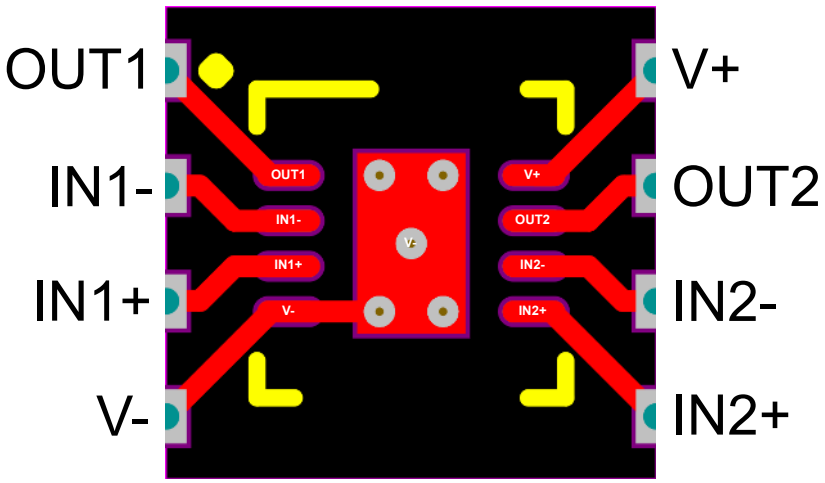


Figure 3-5. Dual SOIC to WSON (DRG)

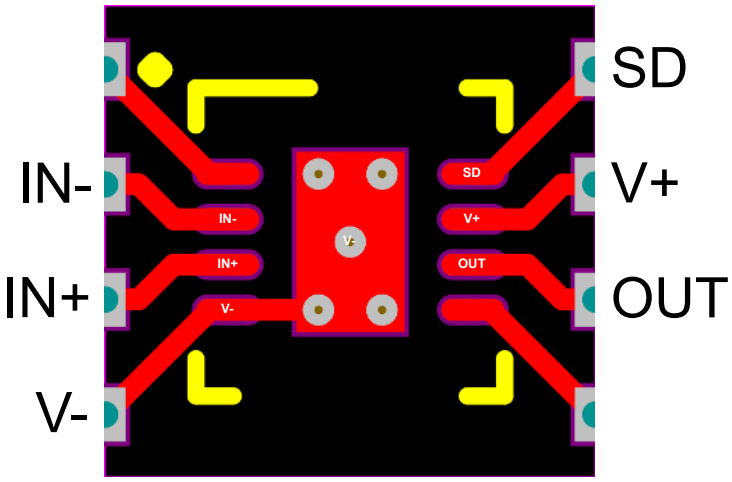


Figure 3-6. Single SOIC to WSON (DRG)

3.5 E: SOT-23 (UDBV)

As shown in Figure 3-7, a SOT-23 (UDBV) device can be adapted to a single-channel SOIC footprint. The 5-pin non-shutdown variant of the SOT-23 package can use this adapter.

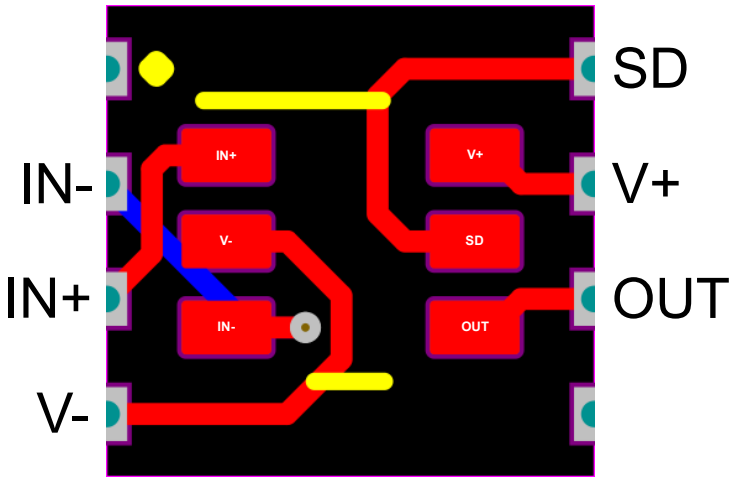


Figure 3-7. Single SOIC to SOT-23 (UDBV)

3.6 F: SOT-23 (DBV)

As shown in Figure 3-8, a SOT-23 (DBV) device can be adapted to a single-channel SOIC footprint. The 5-pin non-shutdown variant of the SOT-23 package can use this adapter.

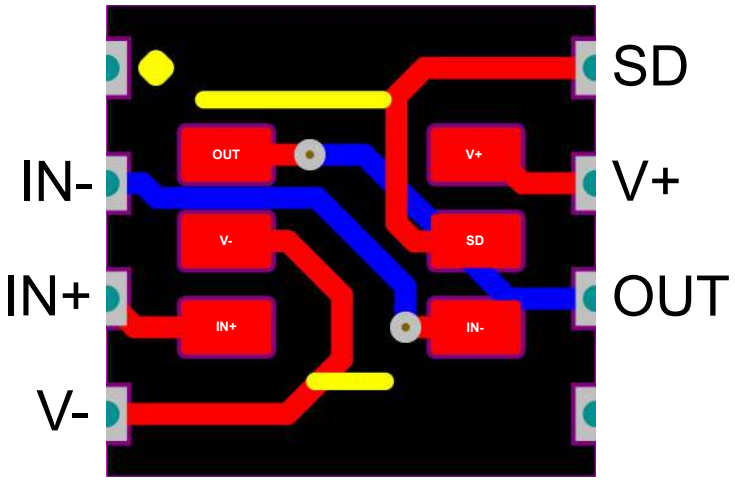


Figure 3-8. Single SOIC to SOT-23 (DBV)

3.7 G: SC70 (DCK)

As shown in Figure 3-9, a SC70 (DCK) device can be adapted to a single-channel SOIC footprint. The 5-pin non-shutdown variant of the SC70 package can use this adapter.

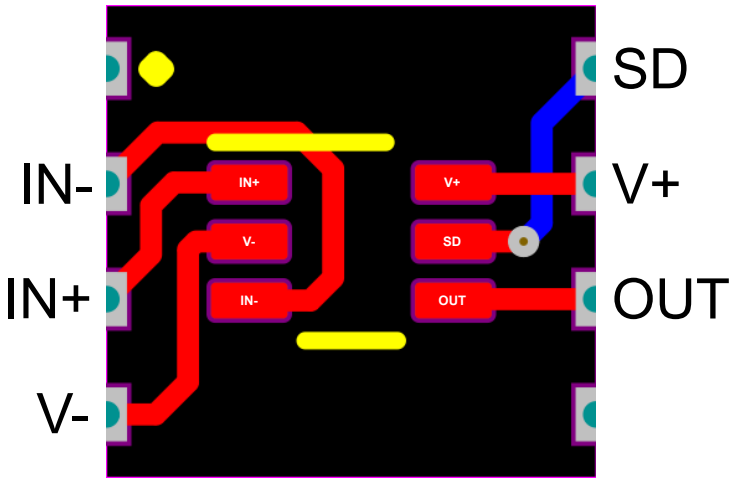


Figure 3-9. Single SOIC to SC70 (DCK)

3.8 H: X2SON (DPW)

As shown in Figure 3-10, a X2SON (DPW) device can be adapted to a single-channel SOIC footprint.

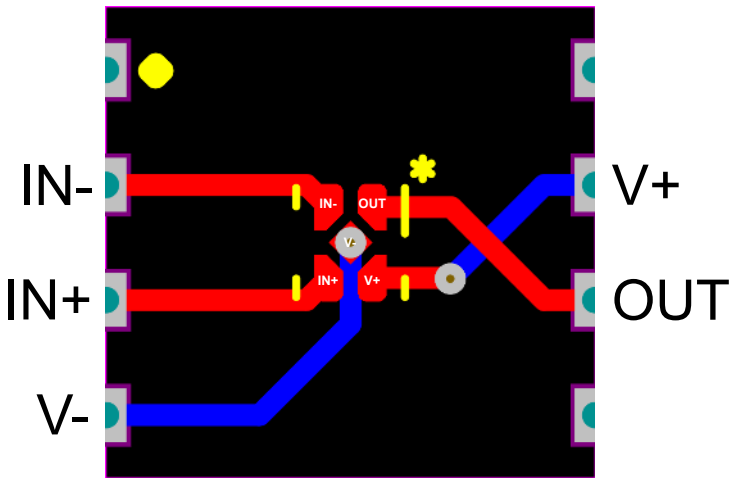


Figure 3-10. Single SOIC to X2SON (DPW)

3.9 I: SOT-5X3 (DRL)

As shown in Figure 3-11, a SOT-5X3 (DRL) device can be adapted to a single-channel SOIC footprint. The 5-pin non-shutdown variant of the SOT-5X3 package can use this adapter.

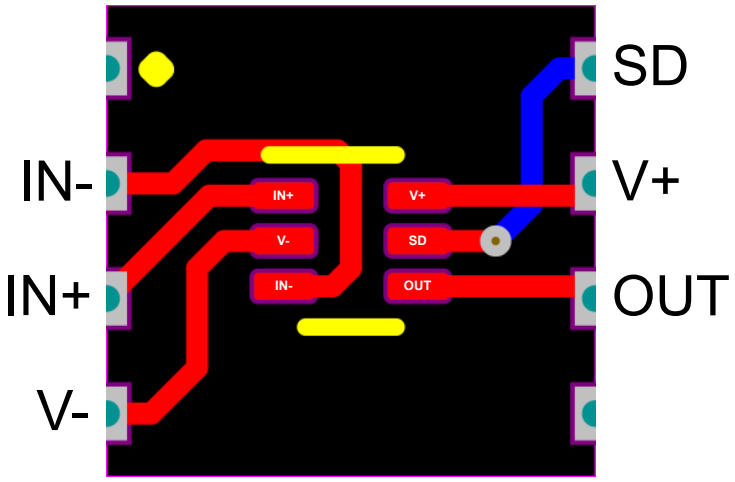


Figure 3-11. Single SOIC to SOT-5X3 (DRL)

3.10 J: WSON (DSE)

As shown in Figure 3-12, a WSON (DSE) device can be adapted to a single-channel SOIC footprint.

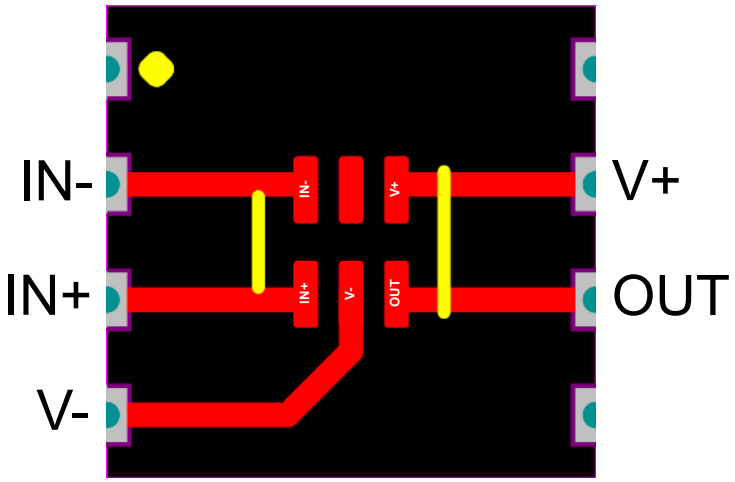


Figure 3-12. Single SOIC to WSON (DSE)

4 Layout

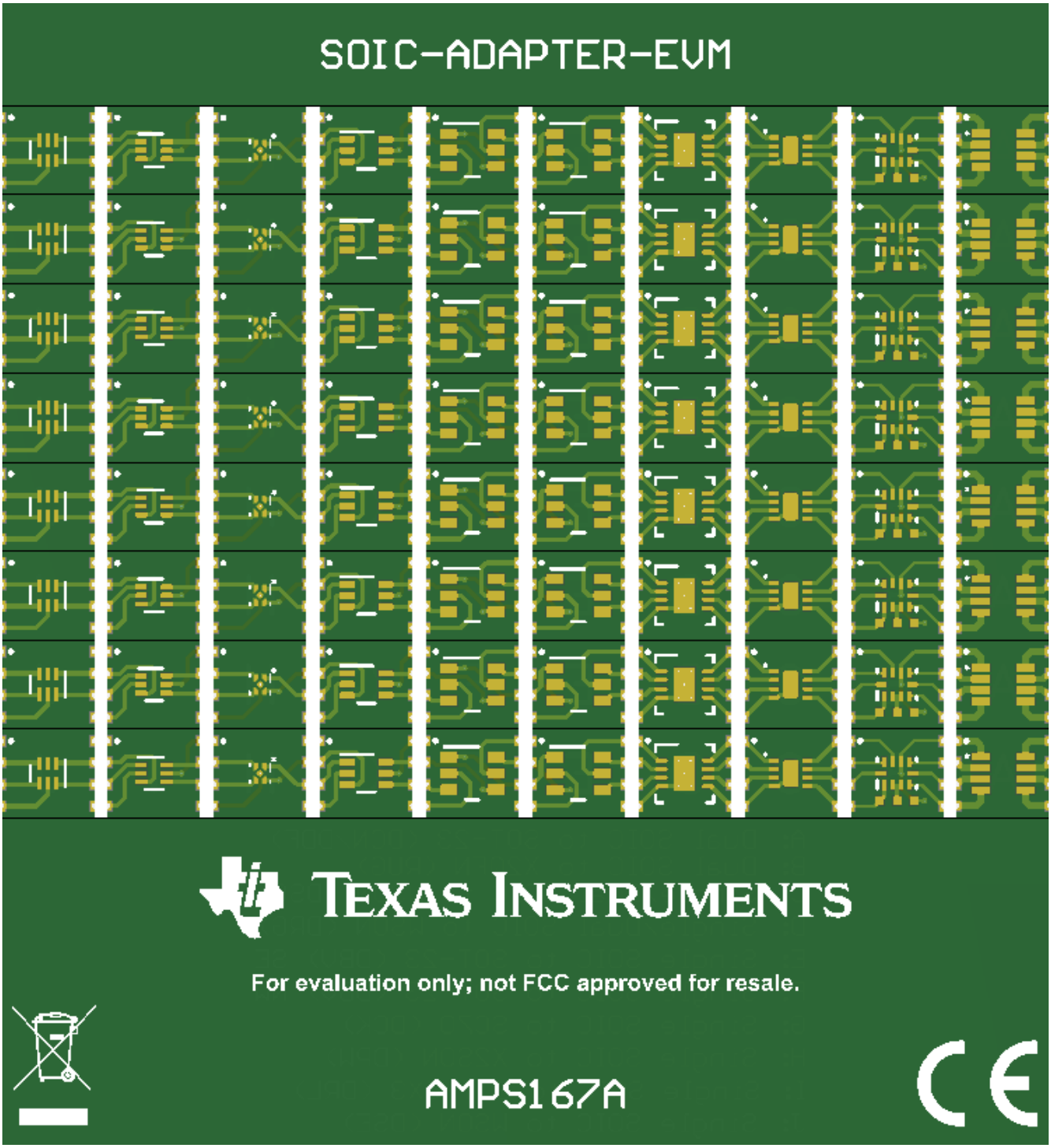


Figure 4-1. PCB Top Layer

Figure 4-2. PCB Bottom Layer

5 Bill of Materials

Table 5-1. Bill of Materials

Designator	Quantity	Description	Part Number
PCB	1	Printed-Circuit Board	SOIC-ADAPTER-EVM

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