

TSSOP-VSSOP-ADAPTER-EVM



Abstract

This user's guide contains support documentation for the TSSOP-VSSOP-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 TSSOP-VSSOP-ADAPTER-EVM.

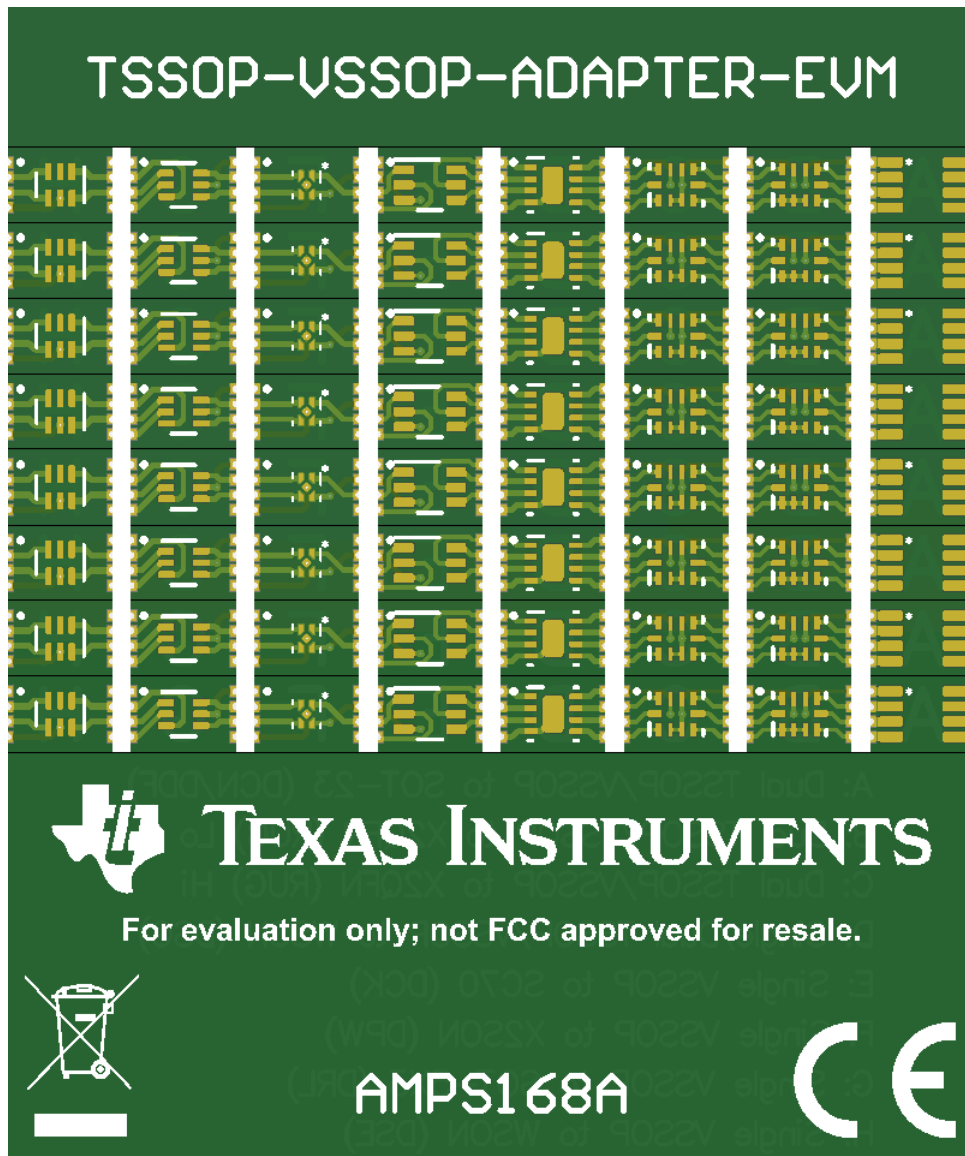


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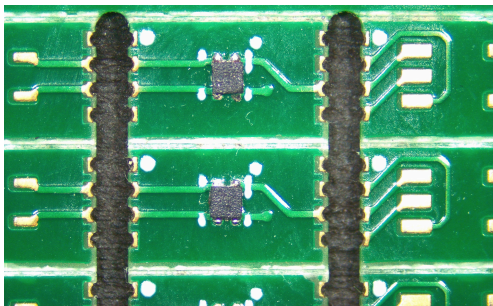
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1 Introduction

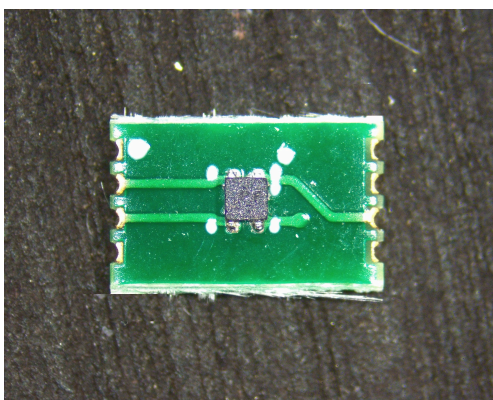
The TSSOP-VSSOP-ADAPTER-EVM allows for evaluation of 8 different packages onto single and dual-channel TSSOP-VSSOP 8-pin footprints of operational amplifiers on existing PCBs. This permits the user to test op amps in different packages without making changes to the existing PCB.

2 How to Use

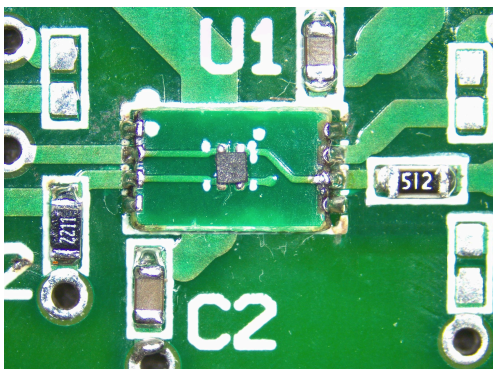
The TSSOP-VSSOP-ADAPTER-EVM comes depopulated. Devices must be ordered separately. To find a specific device in a specific package, use the [Find Product by Package](#) search tool.



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 TSSOP-VSSOP-ADAPTER-EVM allows for numerous packages to be adapted to a TSSOP 8-pin or VSSOP 8-pin footprints. 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	X2QFN	RUG	10
D	WSON	DSG	8
E	SC70	DCK	5/6
F	X2SON	DPW	5
G	SOT-5X3	DRL	5/6
H	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 TSSOP-VSSOP footprint.

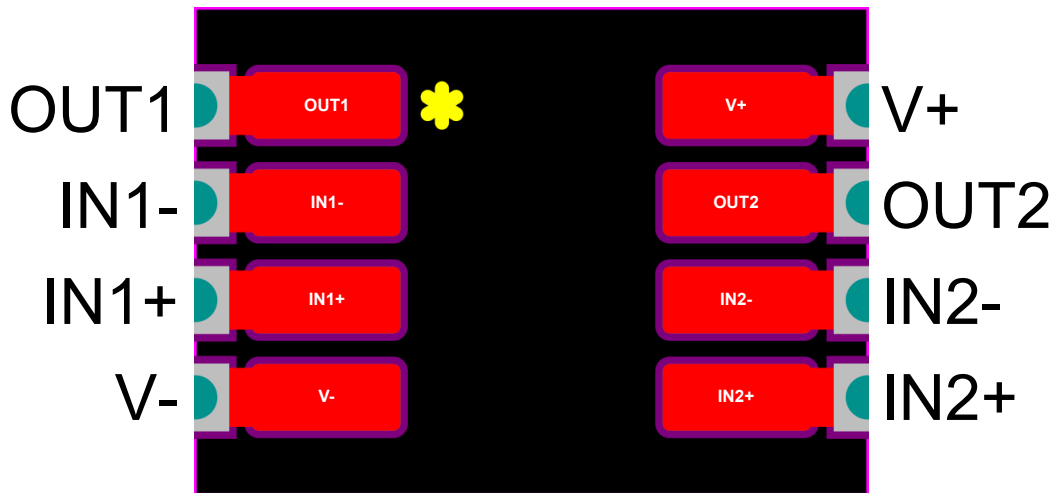


Figure 3-1. Dual TSSOP-VSSOP to SOT-23 (DCN/DDF)

3.2 B: X2QFN (RUG) Low

As shown in [Figure 3-2](#), a X2QFN (RUG) device can be adapted to a dual-channel TSSOP-VSSOP footprint. The shutdown pins found on the X2QFN packages are all pulled low to V-.

To protect the integrity of the signals V+ and OUT1, vias are used to limit the traces being too close to the score line (breaking point).

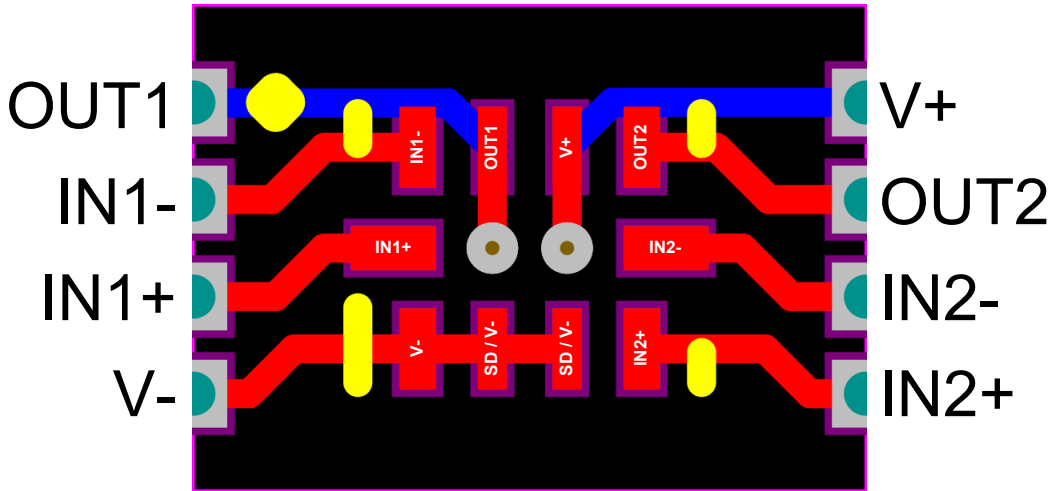


Figure 3-2. Dual TSSOP-VSSOP to X2QFN (RUG) Low

3.3 C: X2QFN (RUG) High

As shown in [Figure 3-3](#), a X2QFN (RUG) device can be adapted to a dual-channel TSSOP-VSSOP footprint. The shutdown pins found on the X2QFN packages are all pulled high to V+.

To protect the integrity of the signals V+ and OUT1, vias are used to limit the traces being too close to the score line (breaking point).

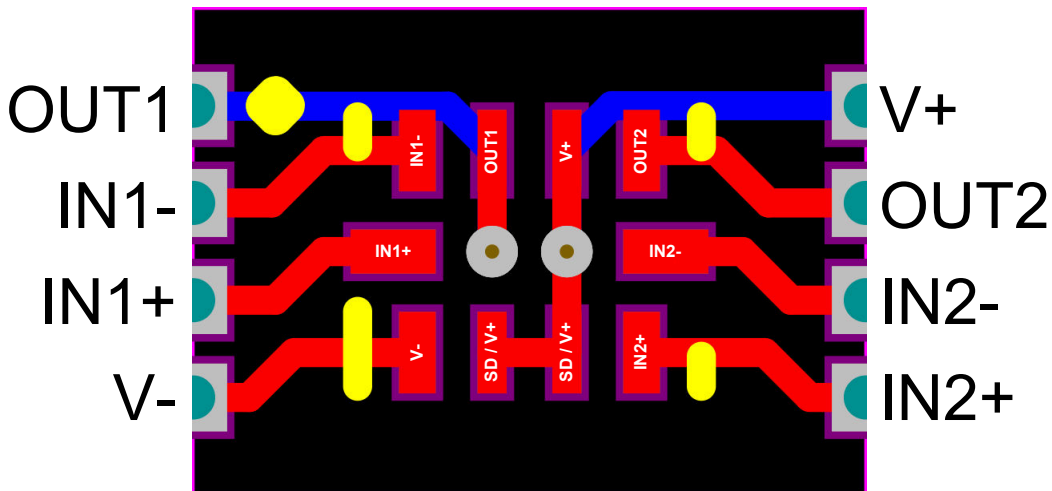


Figure 3-3. Dual TSSOP-VSSOP to X2QFN (RUG) High

3.4 D: WSON (DSG)

The WSON (DSG) board can be used to adapt a dual-channel WSON (DSG) device to dual-channel TSSOP-VSSOP footprint and a single-channel WSON (DSG) device to single-channel VSSOP footprint, as shown in [Figure 3-4](#) and [Figure 3-5](#) respectively. For single-channel WSON (DSG) devices, both the shutdown (SD) and non-shutdown variants are supported.

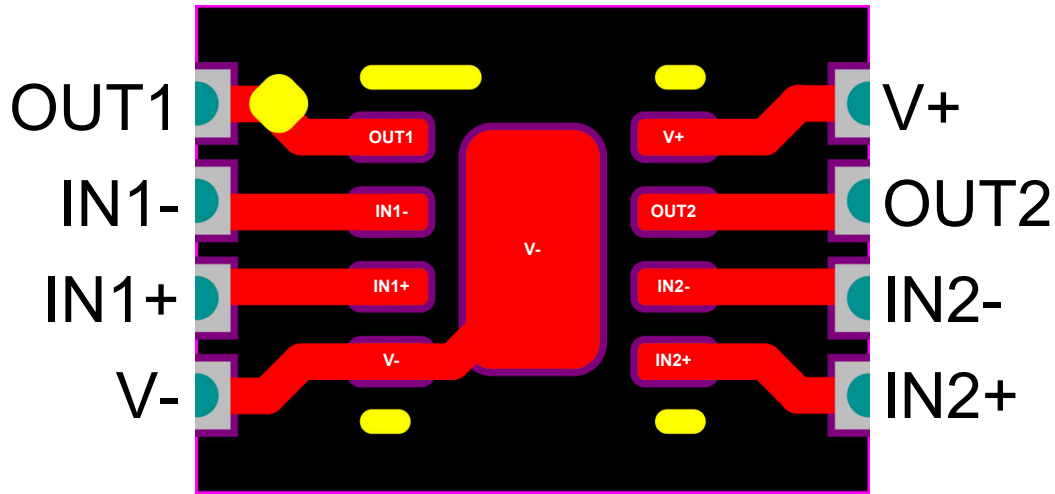


Figure 3-4. Dual TSSOP-VSSOP to WSON (DSG)

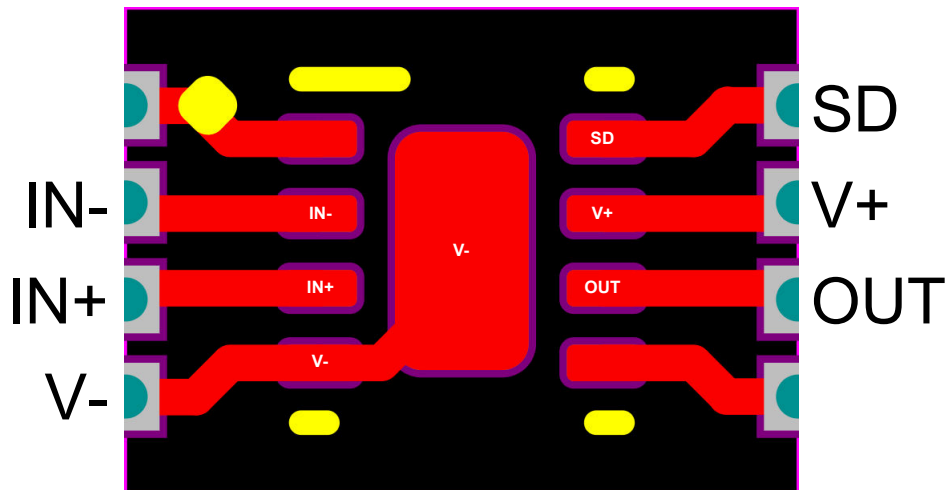


Figure 3-5. Single VSSOP to WSON (DSG)

3.5 E: SC70 (DCK)

As shown in [Figure 3-6](#), a SC70 (DCK) device can be adapted to a single-channel VSSOP footprint. The 5-pin non-shutdown variant of the SC70 package can use this adapter.

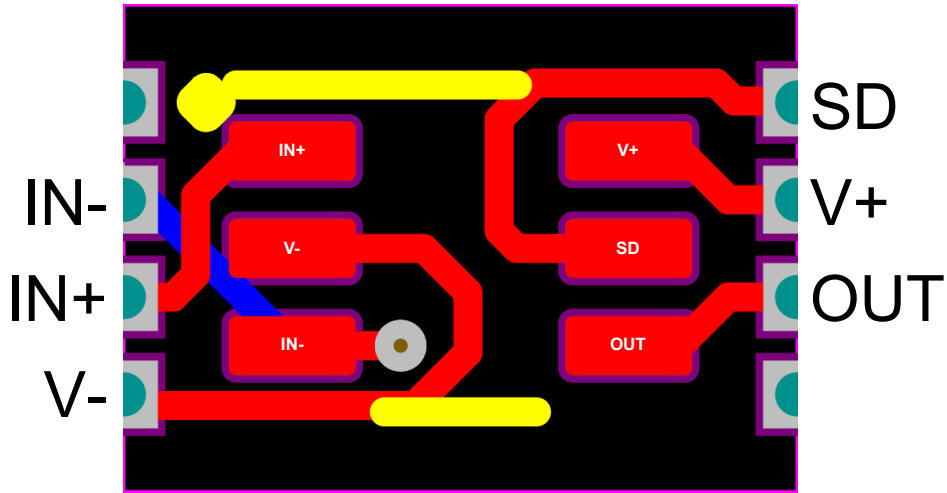


Figure 3-6. Single VSSOP to SC70 (DCK)

3.6 F: X2SON (DPW)

As shown in [Figure 3-7](#), a X2SON (DPW) device can be adapted to a single-channel VSSOP footprint.

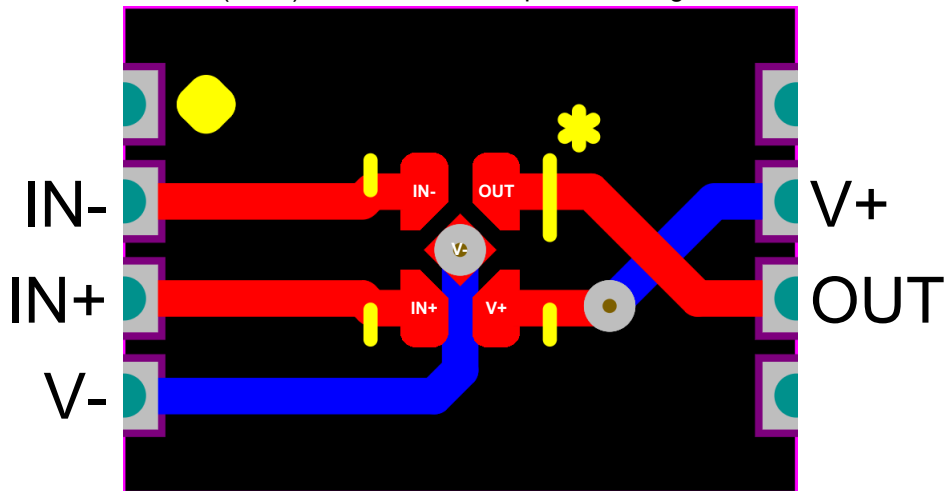


Figure 3-7. Single VSSOP to X2SON (DPW)

3.7 G: SOT-5X3 (DRL)

As shown in Figure 3-8, a SOT-5X3 (DRL) device can be adapted to a single-channel VSSOP footprint. The 5-pin non-shutdown variant of the SOT-5X3 package can use this adapter.

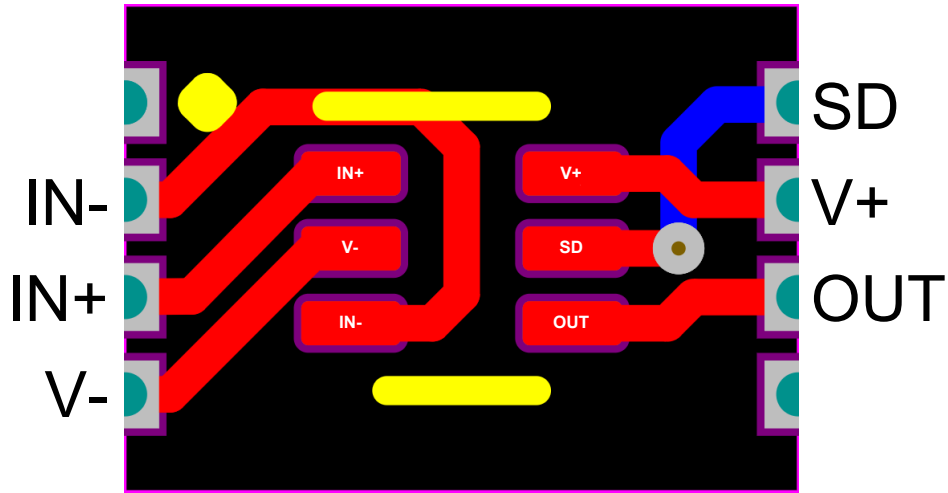


Figure 3-8. Single VSSOP to SOT-5X3 (DRL)

3.8 H: WSON (DSE)

As shown in Figure 3-9, a WSON (DSE) device can be adapted to a single-channel VSSOP footprint.

To protect the integrity of the signal V-, a via is used to limit the trace being too close to the score line (breaking point).

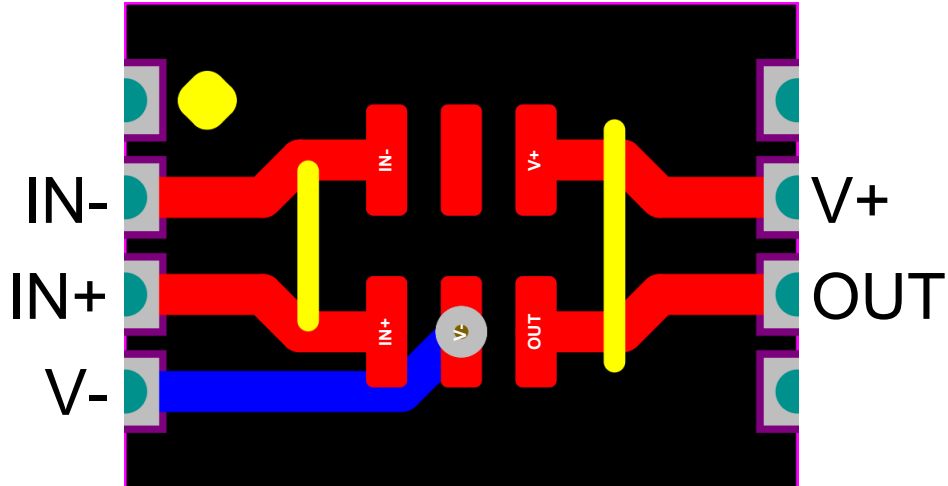


Figure 3-9. Single VSSOP to WSON (DSE)

4 Layout

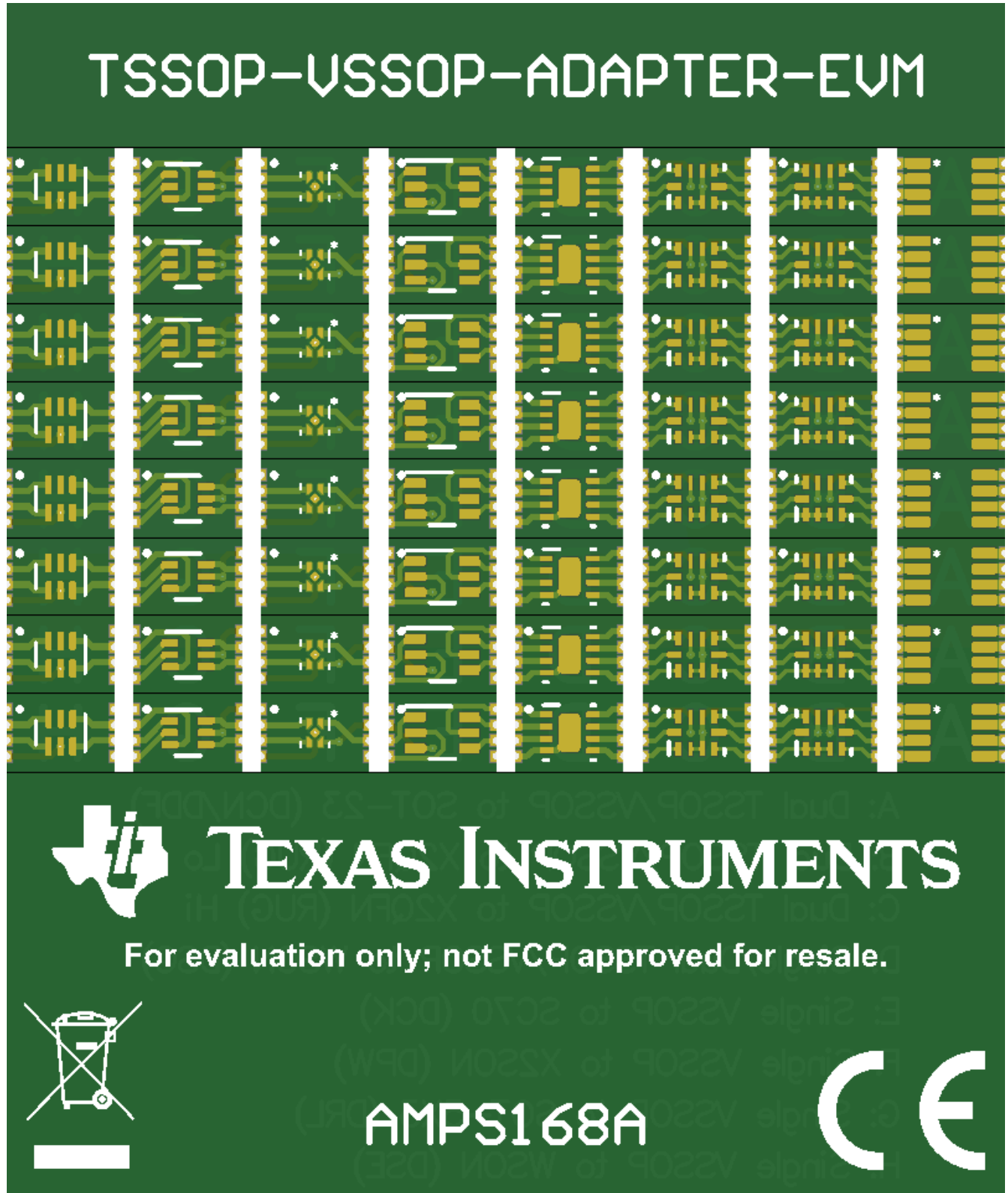


Figure 4-1. PCB Top Layer

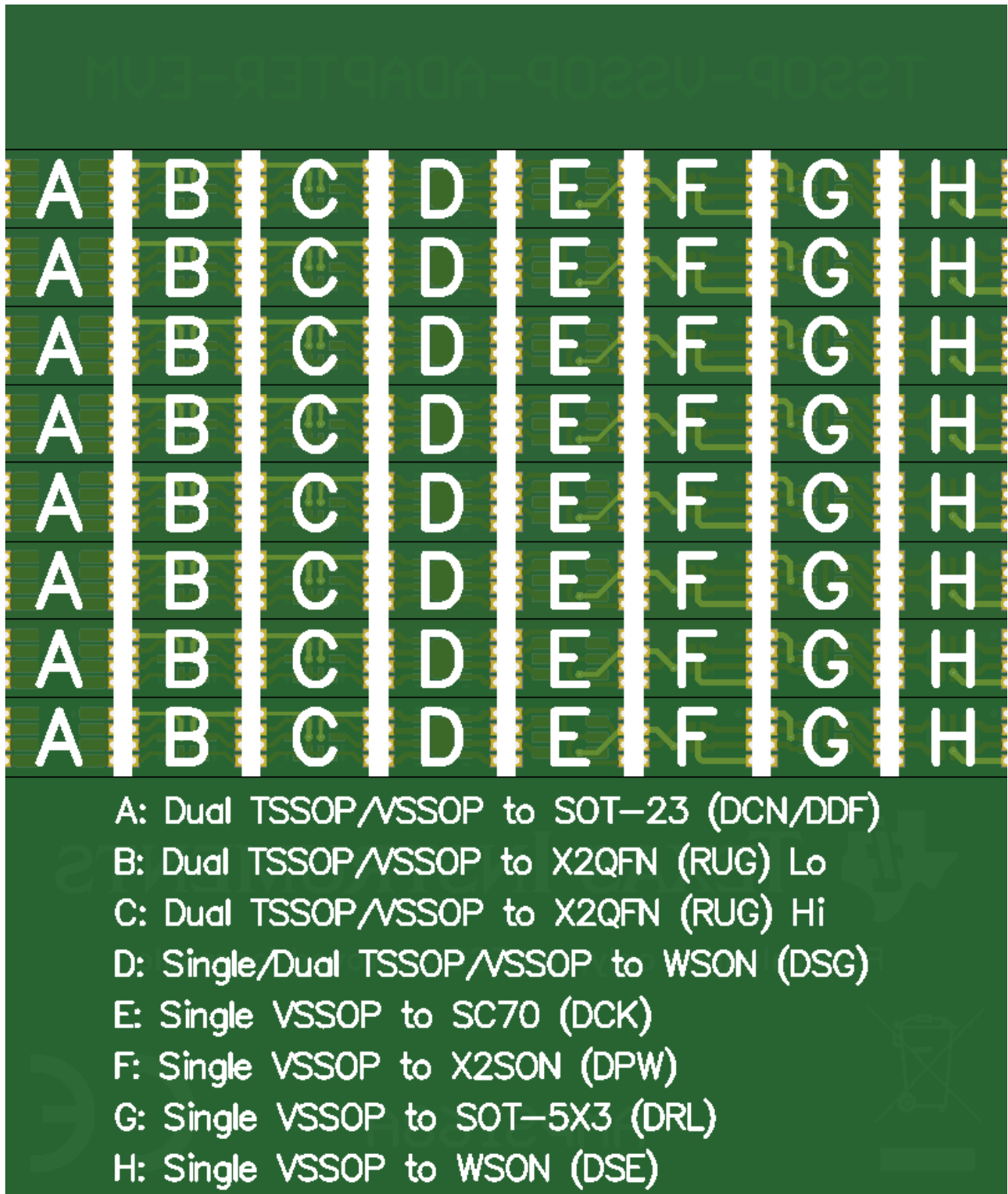


Figure 4-2. PCB Bottom Layer

5 Bill of Materials

Table 5-1. Bill of Materials

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

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