

TLV7081EVM

User's Guide



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TLV7081EVM User's Guide

The TLV7081 is a single-channel, low-voltage, low-power comparator packaged in the ultra-small WCSP package measuring 0.7 × 0.7mm. TLV7081EVM is intended to make it easier to evaluate or to integrate the device in the user's prototype system. The shipped EVM board has the TLV7081 installed.

The EVM board provides mounting holes which are compatible to the industry standard DIP package. Either an 8-pin DIP socket or common 0.1-inch pin headers can be installed depending on user's integration requirement.

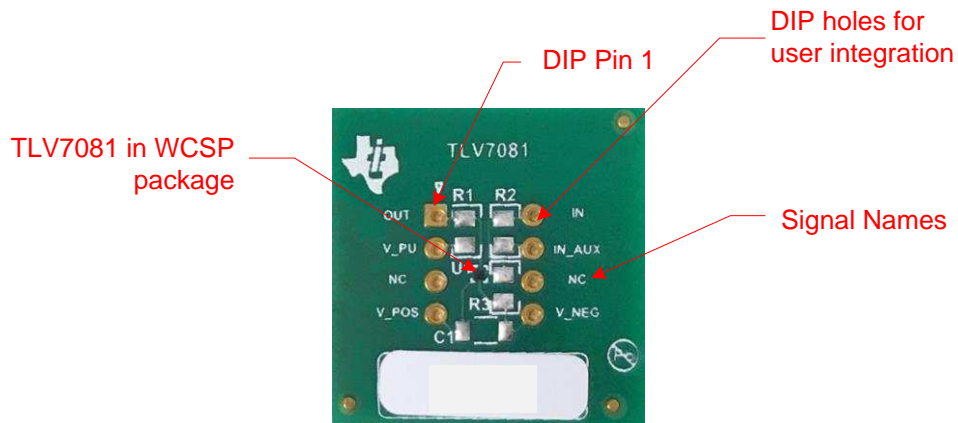


Figure 1. TLV7081EVM Board Top View

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2 TLV7081EVM Block Diagram

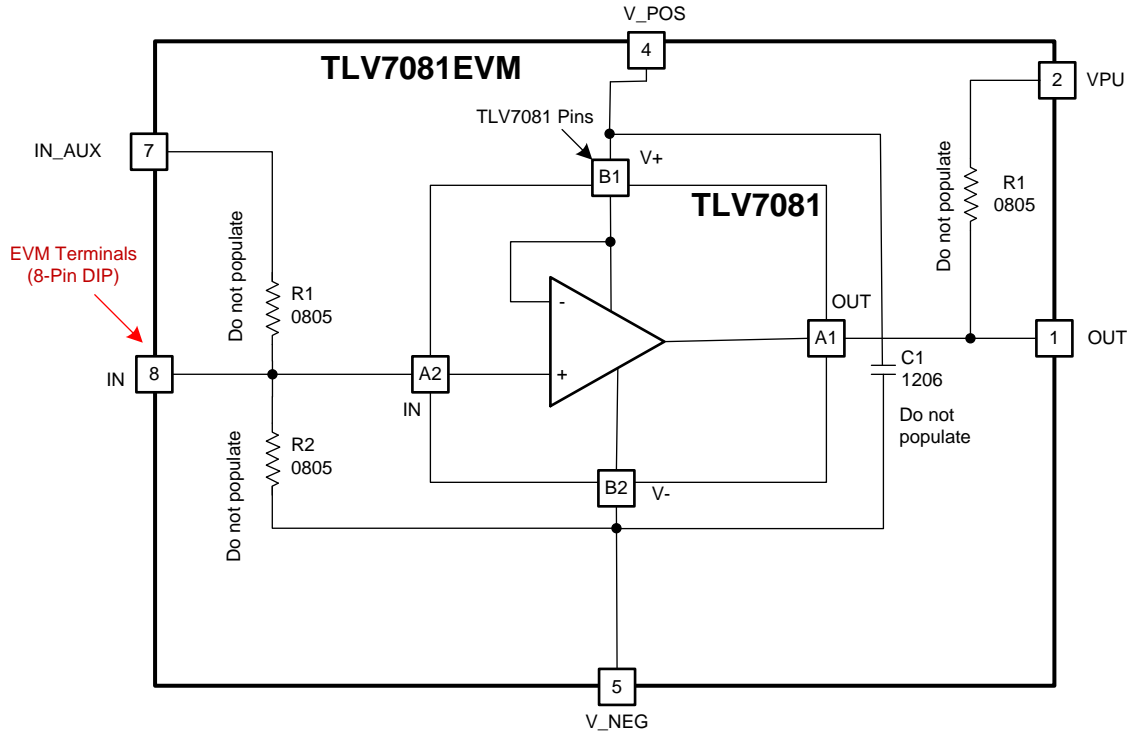


Figure 2. Block Diagram

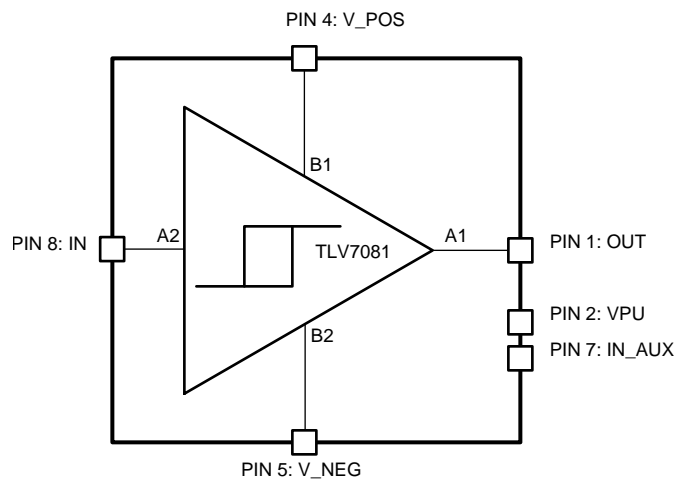


Figure 3. TLV7081EVM Pin Assignments

Table 1. TLV7081 and EVM Board Signals

TL7081 DEVICE		TLV7081EVM DIP HOLES	
PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
A1	OUT	1	OUT
B1	V+	4	V_POS
B2	V-	5	V_NEG
A2	IN	8	IN
		7	IN_AUX
		2	VPU
		3, 6	No Connection

3 How to Use the TLV7081EVM for Evaluation or System Prototypes

TLV7081EVM accepts a bypass capacitor (C1) to be installed by the end user. A 0.1- μF ceramic capacitor (in 0805 package) is recommended. If the application needs to scale down the input voltage to a lower value, a pair of resistors R1 and R2 can be installed by the user. In this case the IN_AUX (DIP PIN 7) instead of IN (PIN 8) should be used as the input terminal.

Depending on the user's setup or requirement, a standard 8-pin DIP socket or 0.1-inch pin headers may be installed. Users may also solder wires directly to the DIP holes.

3.1 Usage Example

Figure 4 shows a typical use case of TLV7081 as an undervoltage monitor. The end-user needs to install 3 resistors (R1 – R3) as well as C1. The configuration detects an overvoltage condition when the input voltage at IN_AUX reaches 6 V or higher. The output pull-up resistor R1 is connected to a 1.8-V supply through the VPU terminal.

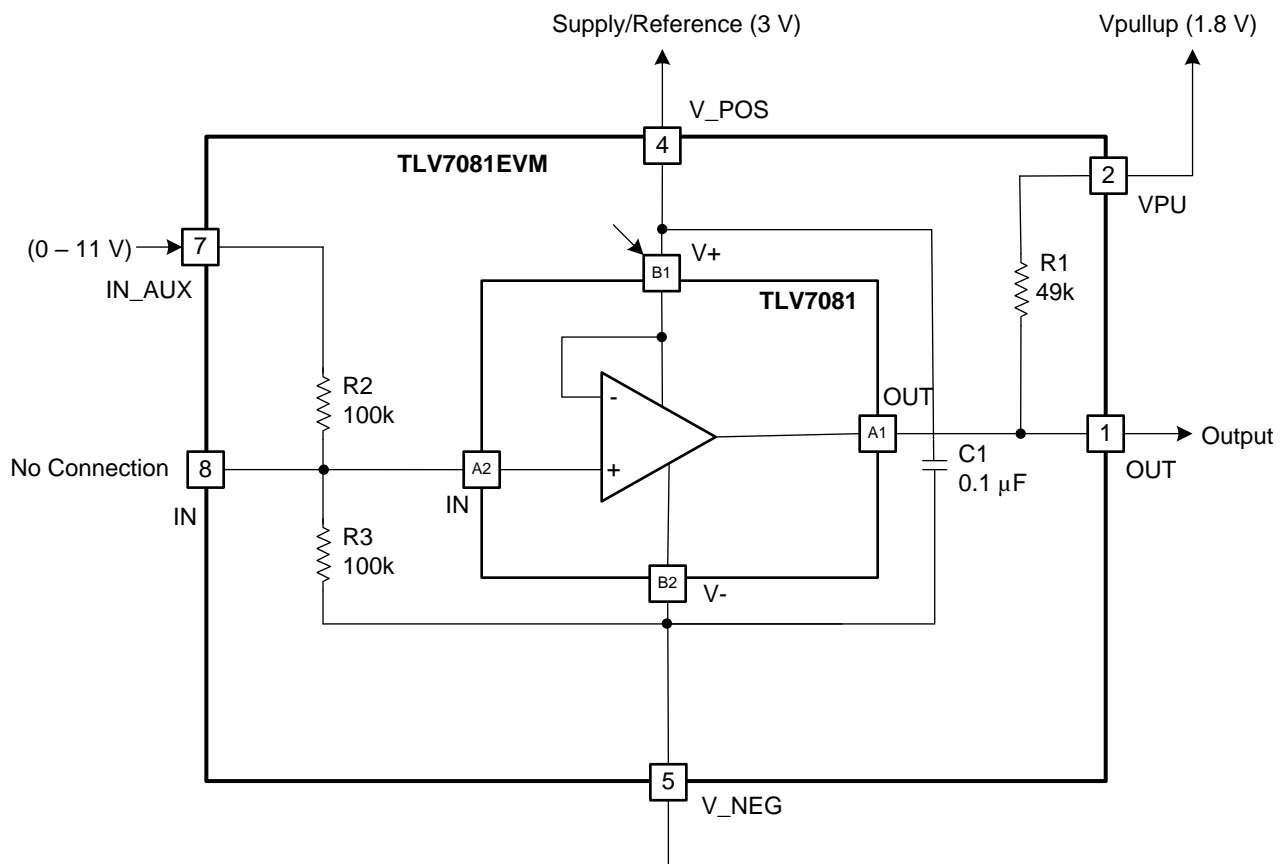
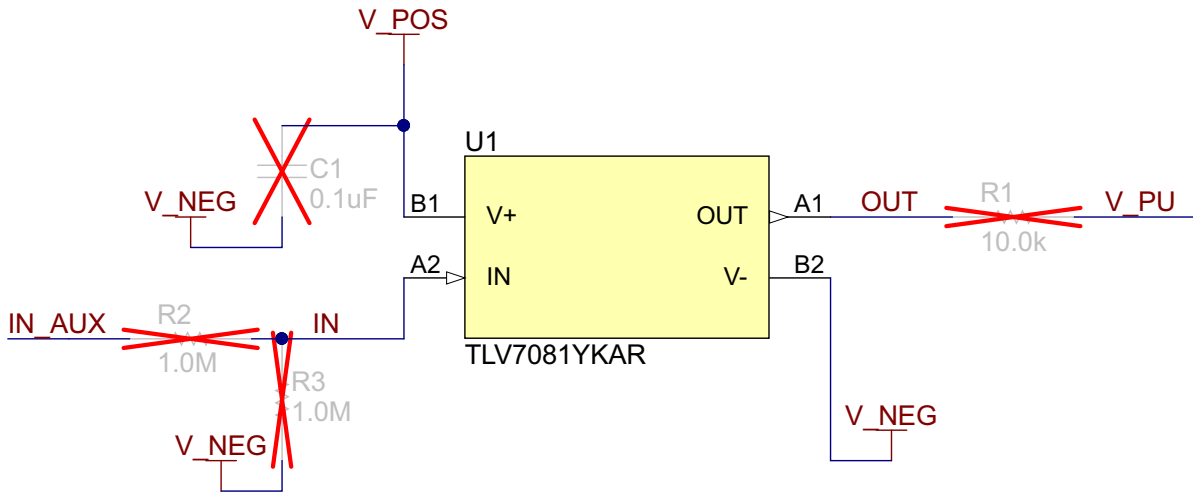


Figure 4. Usage Example

The TLV7081 device internally ties the inverting input with the supply. In this example the reference/supply is driven with a 3-V (minimum 1.7-V) power source. The resistor network R2 and R3 reduces the input by 50%, which makes an effective threshold at IN_AUX equal to $3\text{ V} / 50\% = 6\text{ V}$. Other R2 and R3 as well as the reference voltage can be used for different threshold requirement. The output pullup resistor R1 is connected to the same supply which shares with the load. Obviously a common power source may be used for both V_POS and VPU if threshold requirement is satisfied.

4 TLV7081EVM Schematic



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Figure 5. TLV7081EVM Schematic

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
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Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication. This radio transmitter has been approved by Industry Canada to operate with the antenna types listed in the user guide with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

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http://www.tij.co.jp/lstds/ti_ja/general/eStore/notice_01.page

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
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