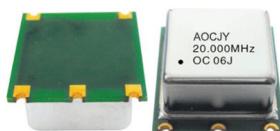


AOCJY OCXO APPLICATION NOTE

REFERENCE VOLTAGE OUTPUT

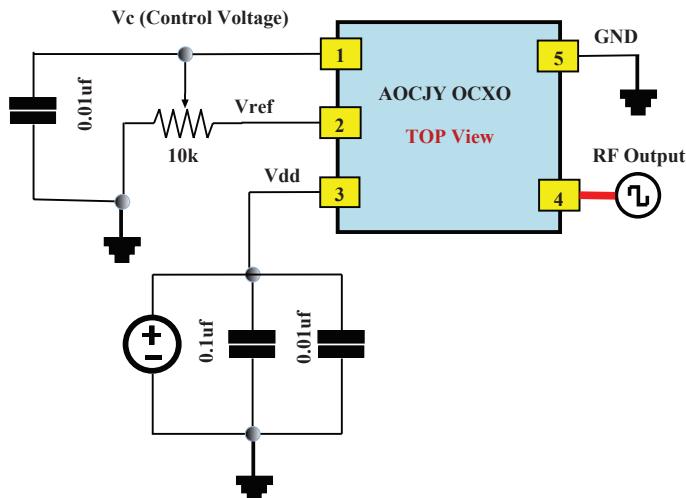


The AOCJY series of **Oven Controlled Crystal Oscillators** are designed to facilitate reference frequencies from 10.00MHz to 100MHz carrier.

These devices are suitable for ROHS compliant reflow and incorporate a Control Voltage (Vc) port; providing a means to set these devices on frequency, post reflow.

AOCJY devices also provide a Regulated DC output on pin # 2 (Vref). The value of this voltage is dependent upon the Supply Voltage bias. For instance, for $V_{dd} = 5.0V$; the V_{ref} value will be $+4.50V \pm 0.2V$. Similarly for $V_{dd} = 3.3V$; the V_{ref} value will be $+2.80V \pm 0.2V$.

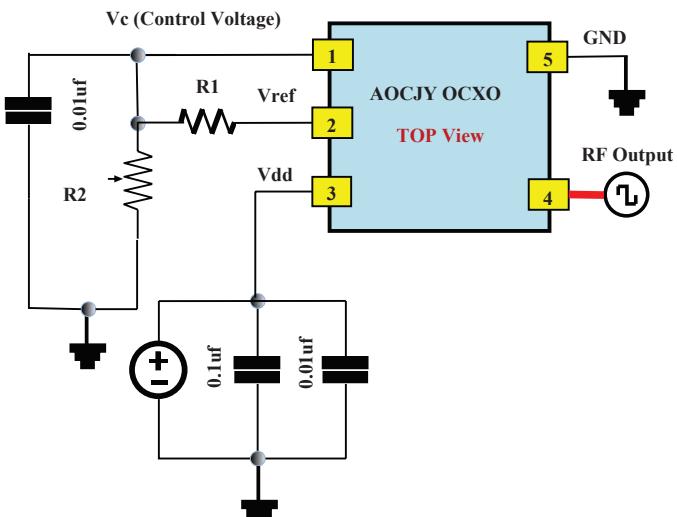
Figure (1)



As depicted in figure (1), the simplest way to utilize the V_{ref} output is to connect a potentiometer between V_{ref} and Gnd. The “**wiper**” of the potentiometer should then be connected to the **Vc** (Control Voltage port) of the OCXO. This way, the DC Voltage value @ V_c port can be adjusted by varying the position of the wiper.

Another way to achieve a similar result is to use a two resistor – potential divider approach, as shown in figure (2) below.

Figure (2)



In this approach, the V_c Voltage will be given by:

$$V_c = (R_2 / (R_1 + R_2)) * V_{ref}$$

As shown, R_2 can either be fixed or a variable resistor. Good starting values for a 3.3V biased OCXO's could be $R_1 = 6.98 \text{ k}\Omega$ and $R_2 = 10.00 \text{ k}\Omega$

Similarly, for 5.0V biased OCXO's, $R_1 = 8.06 \text{ k}\Omega$ and $R_2 = 10.00 \text{ k}\Omega$ could yield the desired result. If a potentiometer is used in place of R_2 , the “**wiper**” should be connected to the V_c port to provide variable resistance.

Please take note that the by-pass capacitors on both the V_{dd} port, as well as the V_c port are merely suggested values to help improve noise suppression.

If you have specific questions, please contact us at abinfo@abracon.com.

NOTE: Abracon manufactured products are intended for general commercial and industrial use. For applications requiring high reliability and/or presenting extreme operating environment, written consent & authorization from Abracon is required.