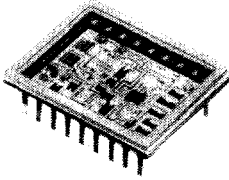


**SYNCHRO/RESOLVER/INDUCTOSYN®
REFERENCE OSCILLATOR**



DESCRIPTION

The OSC-15802 is a quadrature power oscillator with two outputs 90° out of phase. These outputs provide both the reference and quadrature signals simultaneously, making the OSC-15802 ideally suited for synchro, resolver, LVDT (RVDT), and Inductosyn applications.

With the use of two capacitors, the oscillator's outputs are pin programmable in frequency to 10 kHz. The

Reference output voltage is 7 V rms and can be scaled down with a single resistor.

APPLICATIONS

Packaged in an 18 pin hermetic DDIP, the OSC-15802 operates over a temperature range of -55°C to +125°C making it an excellent choice for synchro, resolver, LVDT (RVDT), and Inductosyn applications.

FEATURES

- **ADI Alternate Source**
- **Quadrature Reference Output Voltages for Inductosyn Applications**
- **Programmable Output Frequency to 10 kHz**
- **Small 18-Pin DDIP**
- **Scalable Reference Output**
- **-55°C to +125°C Operating Temperature Range**

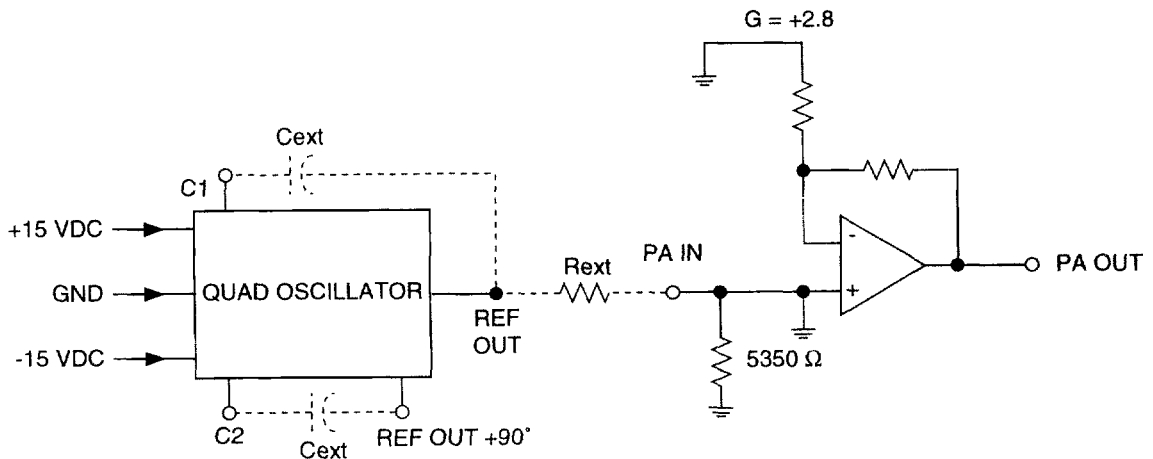


FIGURE 1. OSC-15802 BLOCK DIAGRAM

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TABLE 1. OSC-15802 SPECIFICATIONS

Specifications apply over temperature range and power supply range.

PARAMETER	UNITS	VALUE
FREQUENCY	Hz	Programmable from 400 to 10k
OUTPUTS		
PA OUT		
Voltage	V rms	7 ±1% for 2.5 V input
Current	mA rms	215 min
REF		
Voltage	V rms	2.5 ±10%
Current	mA rms	3 min
REF +90°		
Voltage	V rms	2.5 ±10%
Current	mA rms	3 min
Protection		Momentary short circuit and transient proof (1 sec. max.)
POWER SUPPLIES		
Voltage	Vdc	±15 ±5%
Current	mA	20 max plus current load
Max Voltage without damage	Vdc	±18
TEMPERATURE RANGE		
Operating		
-10X	°C	-55 to +125
-30X	°C	0 to +70
Storage	°C	-65 to +150
PHYSICAL CHARACTERISTICS		
Size	in (mm)	1.0 x 0.8 x 0.2 (25.45 x 20.32 x 4.83) 18 pin DDIP
Weight	oz (gm)	0.4 (1)

PROGRAMMABLE FREQUENCY OUTPUT

The output frequency of the OSC-15802 is programmable to 10 kHz. The frequency is programmed using two external equal value capacitors (see FIGURE 2). The value of the capacitors (C_{ext}) is calculated as follows:

$$C_{ext} = \frac{10^7}{f}$$

where: C is capacitance in picofarads (use NPO ceramic),

f is frequency in Hertz.

To scale down the PA OUT voltage, an external resistor (R_{ext}) is connected between pins 3 and 7. The value of R_{ext} is calculated as follows:

$$R_{ext} = \frac{37.5}{V_{out}}$$

where: R_{ext} is in kOhms,

V_{out} is the desired voltage in Vrms.

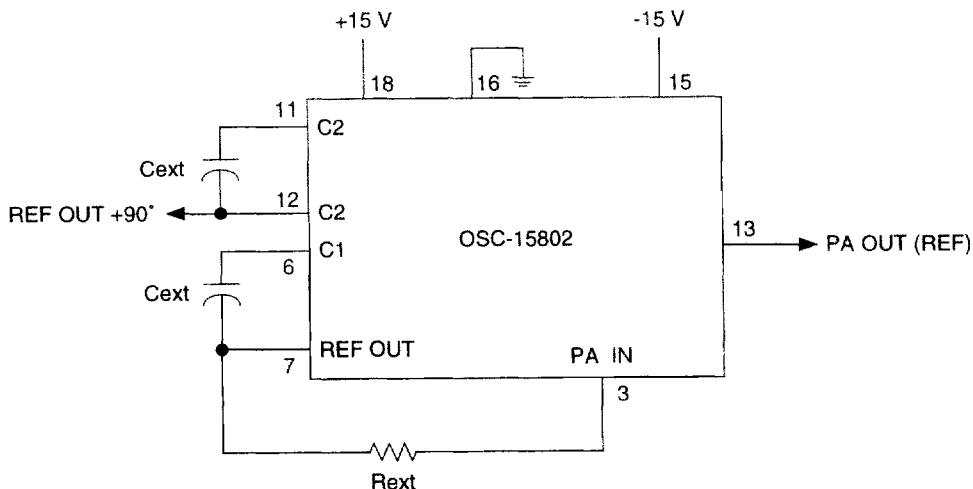


FIGURE 2. PROGRAMMING RESISTOR AND CAPACITOR CONNECTIONS

TABLE 2. OSC-15802 PIN FUNCTIONS

PIN	NAME	FUNCTION
1	NC	No connection
2	NC	No connection
3	PA IN	Power amplifier input
4	NC	No connection
5	NC	No connection
6	C1	Capacitor connection (pin programmable freq)
7	REF OUT	Reference Output
8	NC	No connection
9	NC	No connection
10	NC	No connection
11	C2	Capacitor connection (pin programmable freq)
12	REF OUT +90°	+90° reference output signal
13	PA OUT	Power amplifier output
14	NC	No connection
15	-15 V	-15 Vdc power supply voltage
16	GND	Ground
17	NC	No connection
18	+15 V	+15 Vdc power supply voltage

ORDERING INFORMATION

OSC-15802-X X 0 X

Supplemental Process Requirements:

- S = Pre-Cap Source Inspection
- L = Pull Test
- Q = Pull Test and Pre-Cap Inspection
- Blank = None of the Above

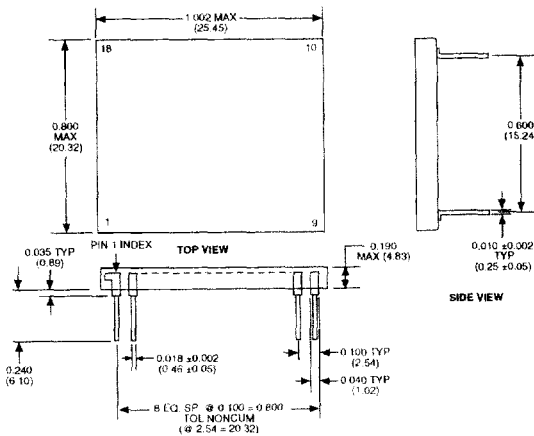
Process Requirements:

- 0 = Standard DDC Processing, no Burn-In (See page xiii.)
- 1 = MIL-PRF-38534 Compliant
- 2 = B*
- 3 = MIL-PRF-38534 Compliant with PIND Testing
- 4 = MIL-PRF-38534 Compliant with Solder Dip
- 5 = MIL-PRF-38534 Compliant with PIND Testing and Solder Dip
- 6 = B* with PIND Testing
- 7 = B* with Solder Dip
- 8 = B* with PIND Testing and Solder Dip
- 9 = Standard DDC Processing with Solder Dip, no Burn-In (See page xiii.)

Temperature Grade/Data Requirements:

- 1 = -55°C to +125°C
- 2 = -40°C to +85°C
- 3 = 0°C to +70°C
- 4 = -55°C to +125°C with Variables Test Data
- 5 = -40°C to +85°C with Variables Test Data
- 8 = 0°C to +70°C with Variables Test Data

*Standard DDC Processing with burn-in and full temperature test — see table on page xiii.



NOTES:

1. Dimensions shown are in inches (mm)
2. Lead cluster shall be centralized within ± 0.010 (± 2.54) of outline dimensions.
3. Pin material meets solderability requirements of MIL-STD-202E, Method 208C.
4. Pin numbers are for reference only.

FIGURE 3. OSC-15802 MECHANICAL OUTLINE