

- 1) MODEL IDENTIFICATION NUMBER:** S2399 – SERIES
- 2) OPERATING TEMPERATURE RANGE:** -40°C to +85°C
- 3) STORAGE TEMPERATURE RANGE:** -55°C to +125°C
- 4) INPUT (SUPPLY) VOLTAGE:** 3.3V ±10%
- 5) INPUT (SUPPLY) CURRENT:** 1.5440 to 32.0000 MHz: 15mA max (output enabled)  
 32.0001 to 50.0000 MHz: 18mA max (output enabled)  
 50.0001 to 80.0000 MHz: 25mA max (output enabled)  
 1.5440 to 80.0000 MHz: 10µA max (output/oscillation disabled)
- 6) OUTPUT CHARACTERISTICS (ANY COMBINATION OF OPERATING (SUPPLY) VOLTAGE, OPERATING TEMPERATURE RANGE AND LOADING)**
- a) HCMOS/TTL COMPATIBLE
  - b) SYMMETRY: 45/55% max at .5 VDD
  - c) LOAD: 15pF max; 10 LSTTL
  - d) RISE & FALL TIMES (measured 20% to 80%): 7 nsec max 1.5440 to 50.0000 MHz  
5 nsec max 50.0001 to 80.0000 MHz
  - e) "0" LEVEL: 10% VDD max
  - f) "1" LEVEL: 90% VDD min
- 7) ENVIRONMENTAL:**
- a) THERMAL SHOCK: MIL-STD-883, Method 1011, Condition A
  - b) MOISTURE RESISTANCE: MIL-STD-883, Method 1004
- 8) MECHANICAL:**
- a) DIMENSIONS: Per Figure 1
  - b) SHOCK: MIL-STD-883, Method 2002, Condition B
  - c) SOLDERABILITY: MIL-STD-883, Method 2003
  - d) TERMINAL STRENGTH: MIL-STD-883, Method 2004, Conditions D
  - e) VIBRATION: MIL-STD-883, Method 2007, Condition A
  - f) SOLVENT RESISTANCE: MIL-STD-202, Method 215
  - g) RESISTANCE TO SOLDERING HEAT: MIL-STD-202, Method 210, Condition I or J
- 9) OPERATING FREQUENCY:** AS SPECIFIED (1.544000 MHz to 80.000000 MHz)

STANDARD MARKING FORMAT\*

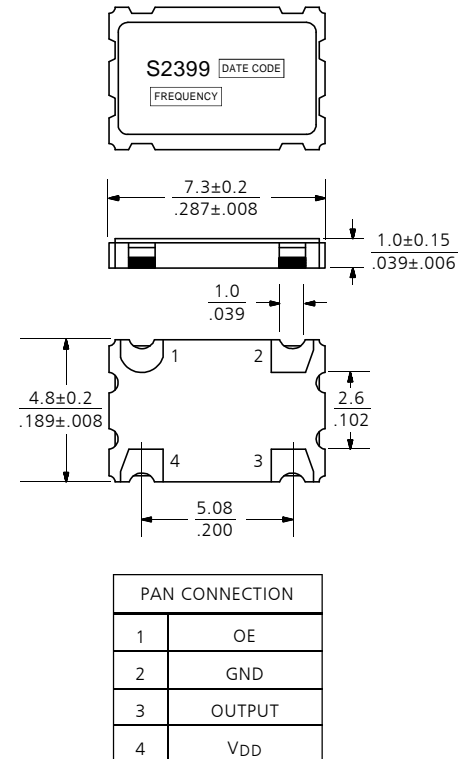


FIGURE 1 – PACKAGE DRAWING

\*Exact location of items may vary

REMOVE ALL BURRS AND SHARP EDGES  
 ALL DIAMETERS TO BE CONCENTRIC WITHIN .005 TIR  
 TOLERANCES: XXX=±0.005 XX=±0.005 HOLE: ±.003  
 DIMENSION IN: mm/inches  
 ANGULAR: ±2°

UNLESS  
 OTHERWISE  
 SPECIFIED

REVISIONS				APPROVED		DATE	SaRonix 141 Jefferson Drive, Menlo Park California 94025, U.S.A.		
REV	DESCRIPTION	DATE	APPD	DRN	BOWIE	03/02/27	TITLE		
A	PER ECO 1779	00/12/04	V V	ORIG	C. TAYLOR	03/03/03	ELECTRICAL, ENVIRONMENTAL MECHANICAL SPECIFICATION S2399 – SERIES		
B	PER ECO 1797	00/12/07	V V	ENG	C. TAYLOR	03/03/03	SIZE	CAGE CODE	DWG. NO.
C	PER ECO 1923	01/09/06	V V	MFG	R. COMER	03/03/06	A	61441	S2399 – SERIES
D	PER ECO 2316	03/03/06	V V	QA	P. FINER	03/03/06	SHEET		1 of 3

**10) TRI-STATE CONTROL CHARACTERISTICS:**

- a) OUTPUT: oscillation @  $V_{IN} \geq 2.2V$ , OUTPUT: high impedance @  $V_{IN} \leq 0.8V$
- b) INTERNAL PULLUP RESISTANCE:  $50K\Omega$  min
- c) CONTROL INPUT  $\longrightarrow$  DISABLE OUTPUT DELAY: 100 nsec max
- d) CONTROL INPUT  $\longrightarrow$  ENABLE OUTPUT DELAY: 10 msec max

**11) FREQUENCY STABILITY** (OVER ALL COMBINATIONS OF OPERATING TEMPERATURE, RATED INPUT (SUPPLY) VOLTAGE CHANGES, LOAD CHANGES, CALIBRATION TOLERANCE, AGING\*\*, SHOCK AND VIBRATION):  $\pm 25$  ppm

- a) PERTURBATIONS: 2ppm max deviation from curve fit @ temp. interval of 2°C max

\*\*1 year @ 25°C Average Ambient Temperature

**12) PHASE NOISE** (maximum):

- 55dBc/Hz @ 10Hz offset from carrier
- 90dBc/Hz @ 100Hz
- 120dBc/Hz @ 1kHz
- 130dBc/Hz @ 10kHz
- 140dBc/Hz @ 100kHz
- 140dBc/Hz @ 1MHz

**13) PART NUMBERING GUIDE:**

**S2399 - XX.XXXX**

MODEL \_\_\_\_\_ FREQUENCY \_\_\_\_\_

**SaRonix** 141 Jefferson Drive, Menlo Park  
California 94025, U.S.A.

SIZE  
**A**

CAGE CODE  
**61441**

DWG. NO.

S2399 - SERIES

REV

D

DATE

03/02/27

SHEET

2 of

3