

The ECS-3951C (5V) and ECS-3953C (3.3V) Series are miniature, crystal controlled, low current clock oscillator in a ceramic SMD package. The low profile package is ideal for today's advanced portable PC and instrumentation designs.

## FEATURES

- 3.3 or 5.0V version
- Miniature profile
- Low power consumption
- Tape & Reel (1,000 pcs.)
- RoHS Compliant (Note 7 Exemption)

## PART NUMBERING GUIDE

|           | FREQUENCY (50.0 MHz) | STABILITY TOLERANCE (±50 PPM) |
|-----------|----------------------|-------------------------------|
| ECS-3951C | - 500                | - B                           |

Sample Part Number: ECS-3951C-500-B

## OPERATING CONDITIONS/ELECTRICAL CHARACTERISTICS

| PARAMETERS            | CONDITIONS      | ECS-3951C (5V) |       |        | ECS-3953C (3.3V)* |       |        | UNITS |
|-----------------------|-----------------|----------------|-------|--------|-------------------|-------|--------|-------|
|                       |                 | MIN            | TYP   | MAX    | MIN               | TYP   | MAX    |       |
| FREQUENCY RANGE       |                 | 1.800          |       | 80.000 | 1.800             |       | 80.000 | MHz   |
| TEMPERATURE RANGE     | Operating       | 0              |       | +70    | 0                 |       | +70    | °C    |
|                       | Storage         | -55            |       | +125   | -55               |       | +125   | °C    |
| SUPPLY VOLTAGE        |                 | +4.5           | +5.0  | +5.5   | +3.0              | +3.3  | +3.6   | V DC  |
| FREQUENCY STABILITY** | Standard        | -100           | ±40   | +100   | -100              | ±40   | +100   | PPM   |
|                       | Option (B)      | -50            |       | +50    | -50               |       | +50    | PPM   |
|                       | Option (C)      | -25            |       | +25    | -25               |       | +25    | PPM   |
| INPUT CURRENT         | 1.8 ~ 30.0 MHz  |                |       | 10     |                   |       | 8      | mA    |
|                       | 30.0 ~ 35.0 MHz |                |       | 15     |                   |       | 8      | mA    |
|                       | 35.0 ~ 50.0 MHz |                |       | 30     |                   |       | 12     | mA    |
|                       | 50.0 ~ 66.0 MHz |                |       | 30     |                   |       | 15     | mA    |
|                       | 66.0 ~ 80.0 MHz |                |       | 50     |                   |       | 30     | mA    |
| OUTPUT SYMMETRY       | @ 1/2 Vcc Level | 40/60          | 50 ±4 | 60/40  | 40/60             | 50 ±4 | 60/40  | %     |
| RISE AND FALL TIMES   |                 |                |       | 10     |                   |       | 15     | ns    |
| LOGIC "0" LEVEL       | Vcc x 0.1V max. |                |       |        |                   |       |        |       |
| LOGIC "1" LEVEL       | Vcc x 0.9V min. |                |       |        |                   |       |        |       |
| LOAD                  | HCMOS           |                |       | 15     |                   |       | 15     | pF    |
| START-UP TIME         | 1.8 ~ 36.0 MHz  |                |       | 5      |                   |       | 5      | ms    |
|                       | 36.0 ~ 80.0 MHz |                |       | 10     |                   |       | 10     | ms    |
| OUTPUT CURRENT (IOL)  | VOL=0.5V/0.33   |                |       | 4      |                   |       | 4      | mA    |
|                       | VOH=4.5V/2.97V  |                |       | -4     |                   |       | -4     | mA    |
| ENABLE/DISABLE TIME   |                 |                |       | 100    |                   |       | 100    | ns    |

\* ECS-3953C is also compatible with a supply voltage of +3.0V DC ±0.3V

\*\* Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging shock and vibration.

\*\*\* An internal pullup resistor from pin 1 to 4 allows active output if pin 1 is left open.

Note: A 0.01 µF bypass capacitor should be placed between VCC (Pin 4) and GND (Pin 2) to minimize power line noise.

## PACKAGE DIMENSIONS (mm)

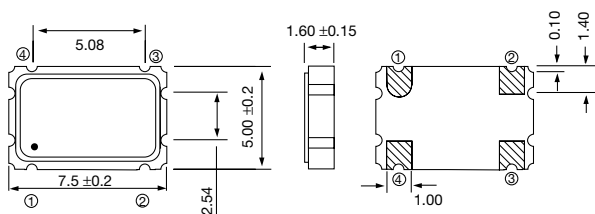


Figure 1) ECS-3951C/3953C Top, Side and Bottom views

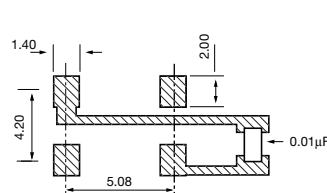


Figure 2) Land Pattern

| PIN CONNECTIONS |              |
|-----------------|--------------|
| #1              | TRI-STATE*** |
| #2              | GND          |
| #3              | OUTPUT       |
| #4              | VCC          |

| ECS-3951C/3953C Standby Control Voltage |                     |
|---|---------------------|
| PIN #1 = OPEN ***                       | #3 = OSCILLATION    |
| PIN #1 = Vccx0.9 MIN                    | #3 = OSCILLATION    |
| PIN #1 = Vccx0.1 MAX                    | #3 = HIGH IMPEDANCE |