

ES52C5 Series



www.DataSheet4U.com®
ECLIPTEK CORPORATION

- RoHS Compliant (Pb-Free)
- Temperature Compensated Crystal Oscillator (TCXO)
- Low Voltage Clipped Sinewave Output
- 3.0V Supply Voltage
- Ceramic SMD package
- Stability to 1.0ppm
- External voltage control option available



NOTES

ELECTRICAL SPECIFICATIONS

| | | |
|---|---|----------------------------------|
| Nominal Frequency | 10MHz, 12MHz, 12.288MHz, 12.504MHz, 12.8MHz, 13MHz, 14.7456MHz, 16MHz, 16.367667MHz, 16.369MHz, 16.8MHz, 18.414MHz, 19.2MHz, 19.44MHz, 19.68MHz, 20MHz, 23.104MHz, 24MHz, 24.5535MHz, 25MHz, 26MHz, and 27.456MHz | |
| Frequency Stability | vs. Operating Temperature Range ($V_{DD}=3.0V_{DC}$, $V_C=1.5V_{DC}$) | See Table 1 |
| | vs. Frequency Tolerance ($25^{\circ}C \pm 2^{\circ}C$, $V_{DD}=3.0V_{DC}$, $V_C=1.5V_{DC}$) | ± 1.0 ppm Maximum |
| | vs. Input Voltage ($\pm 5\%$) | ± 0.3 ppm Maximum |
| | vs. Load ($\pm 1k\Omega // \pm 1pF$) | ± 0.2 ppm Maximum |
| Aging (at 25°C) | | ± 1 ppm / Year Maximum |
| Operating Temperature Range | | See Table 1 |
| Supply Voltage (V_{DD}) | | $3.0V_{DC} \pm 5\%$ |
| Input Current | | 2.0mA Maximum |
| Output Voltage | External DC-Cut Capacitor Required, 1000pF Recommended | 0.7Vp-p Clipped Sinewave Minimum |
| Load Drive Capability | | 10kOhms // 10pF |
| External Trim (Voltage Control Option) | $1.5V_{DC} \pm 1.0V_{DC}$; Positive Transfer Characteristic | ± 8 ppm Minimum |
| Storage Temperature Range | | $-30^{\circ}C$ to $85^{\circ}C$ |
| Start Up Time | | 5mSec Maximum |
| Phase Noise (at 12.800MHz) | At offset of 10Hz | -80dBc/Hz Typical |
| | At offset of 100Hz | -115dBc/Hz Typical |
| | At offset of 1kHz | -135dBc/Hz Typical |
| | At offset of 10kHz | -148dBc/Hz Typical |

| | | | | | | |
|--------------------------------|------------------------|------------------|--------------------|-----------------|---------------|--------------------|
| MANUFACTURER ECLIPTEK CORP. | CATEGORY OSCILLATOR | SERIES ES52C5 | PACKAGE CERAMIC | VOLTAGE 3.0V | CLASS OS1E | REV. DATE 09/07 |
|--------------------------------|------------------------|------------------|--------------------|-----------------|---------------|--------------------|

ES52C5 C 25 V - 13.000M TR

OPERATING TEMP. RANGE
One Letter Code Per Table 1

FREQUENCY STABILITY
Two Digit Code Per Table 1

EXTERNAL TRIM
N=None (No Connection on Pin 1)
V=Voltage Control

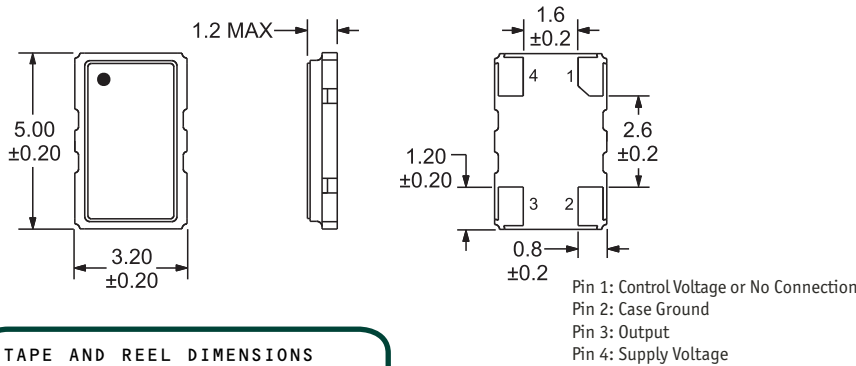
FREQUENCY

PACKAGING OPTIONS
Blank=Bulk
TR=Tape and Reel

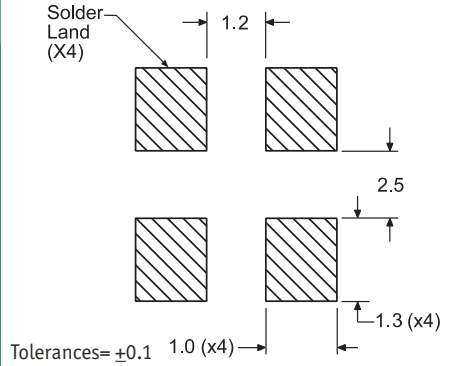
TABLE 1: PART NUMBERING CODES

| Operating Temperature Range | Frequency Stability X Denotes Availability | | | | | |
|-----------------------------|---|---------|---------|---------|---------|---------|
| | | ±1.0ppm | ±1.5ppm | ±2.0ppm | ±2.5ppm | ±3.0ppm |
| | Code | 10 | 15 | 20 | 25 | 30 |
| 0°C to +50°C | A | X | X | X | X | X |
| -10°C to +60°C | B | X | X | X | X | X |
| -20°C to +70°C | C | X | X | X | X | X |
| -30°C to +60°C | D | X | X | X | X | X |
| -30°C to +75°C | E | X | X | X | X | X |
| -30°C to +85°C | F | X | X | X | X | X |
| -40°C to +85°C | G | | X | X | X | X |

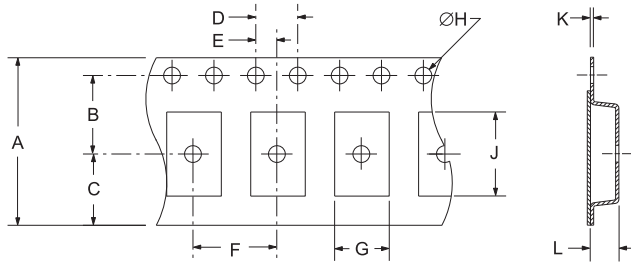
MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



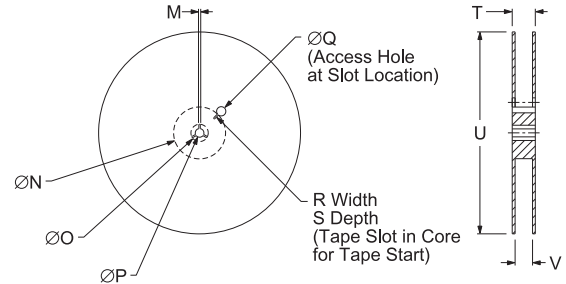
SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



| TAPE | A | B | C | D | E | |
|------|----------|---------|-------------|---------|-----------|-----|
| | 12.0±0.2 | 5.5±0.1 | 6.5±0.1 | 4.0±0.1 | 2.0±0.1 | |
| F | G | H | J | K | L | |
| | 8.0±0.1 | B0* | 1.5+0.1-0.0 | A0* | 0.30±0.05 | K0* |



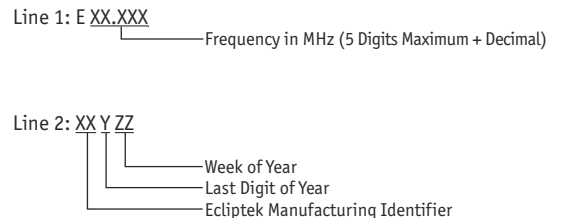
| REEL | M | N | O | P | Q |
|------|---------|--------|----------|----------|----------|
| | 1.5 MIN | 50 MIN | 20.2 MIN | 13.0±0.2 | 40 MIN |
| R | S | T | U | V | QTY/REEL |
| | 2.5 MIN | 10 MIN | 18.4 MAX | 12.4±2-0 | 1,000 |

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic | Specification |
|------------------------------|---------------------------------------|
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| Gross Leak Test | MIL-STD-883, Method 1014, Condition C |
| Mechanical Shock | MIL-STD-202, Method 213, Condition C |
| Vibration | MIL-STD-883, Method 2007, Condition A |
| Solderability | MIL-STD-883, Method 2003 |
| Temperature Cycling | MIL-STD-883, Method 1010 |
| Resistance to Soldering Heat | MIL-STD-202, Method 210 |
| Resistance to Solvents | MIL-STD-202, Method 215 |

MARKING SPECIFICATIONS



| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | ES52C5 | CERAMIC | 3.0V | OS1E | 09/07 |