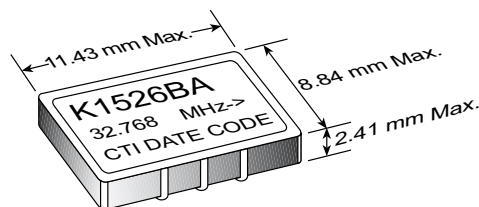


### 5V 9x11mm Surface Mount Voltage Controlled Crystal Oscillators

- **Applications:** Phase-Locked Loops (PLL's); Clock Recovery; Reference Signal Tracking; Synthesizers; Frequency Modulation/Demodulation
- Ceramic Construction, Medal Lid
- 2.0 to 80 MHz Frequency Range
- 0.5V to 4.5V Control Voltage
- $\pm 25$ ppm Stability
- $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$  Operating Temperature Option
- Tape and Reel Available
- Ground Shielded Top and Bottom 6-Pin SOJ-20 Footprint
- J-Leads Seam-sealed, Resistance Welded Hermetic Package



### ELECTRICAL SPECIFICATIONS

| MODEL                                          | K1526BA                                                                            |            | K1526BD   | K1526BE   |
|------------------------------------------------|------------------------------------------------------------------------------------|------------|-----------|-----------|
| Frequency Range (MHz)                          | 2 to 55                                                                            | 55.1 to 80 | 2 to 55   | 2 to 33   |
| Frequency Stability (ppm)                      |                                                                                    |            |           |           |
| Overall                                        | Inclusive of calibration, temperature, voltage, load, shock, vibration, aging      |            |           |           |
| $0^{\circ}\text{C}$ to $70^{\circ}\text{C}$    | $\pm 25$                                                                           | $\pm 40$   | $\pm 25$  | $\pm 32$  |
| $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ | $\pm 50$                                                                           | $\pm 60$   | $\pm 50$  | $\pm 50$  |
| Frequency Control Function:                    | (for custom deviation range, Vc range, transfer function, etc. -- consult factory) |            |           |           |
| Deviation (ppm)                                |                                                                                    |            |           |           |
| Minimum                                        | $\pm 100$                                                                          | $\pm 80$   | $\pm 80$  | $\pm 200$ |
| Minimum                                        | $\pm 150$                                                                          | $\pm 160$  | $\pm 130$ |           |
| Linearity                                      | $<10\%$                                                                            |            |           |           |
| Modulation Bandwidth ( $\pm 3\text{dB}$ )      | $>20\text{KHz}$                                                                    |            |           |           |
| Nominal Control Voltage (V)                    | 2.5                                                                                |            |           |           |
| Control Voltage Range (V)                      | 0.5 to 4.5                                                                         |            |           | 0 to 5    |
| Transfer Function                              | Positive                                                                           |            |           |           |
| Input Impedance                                | $>50\text{ K}\Omega$ @ 10 KHz                                                      |            |           |           |
| Temperature Range ( $^{\circ}\text{C}$ )       |                                                                                    |            |           |           |
| Operating                                      | $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$                                     |            |           |           |
| Storage                                        | $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$                                    |            |           |           |
| Supply Voltage (V)                             | $+5.0 \pm 10\%$                                                                    |            |           |           |
| Input Current (mA)                             | $<30$                                                                              |            |           |           |
| Start Up Time (ms)                             | $<10$                                                                              |            |           |           |
| Symmetry (%) TTL/CMOS                          | 40/60                                                                              |            |           |           |
| Start up Time (ms)                             | $<10$                                                                              |            |           |           |
| Typical SSB Phase Noise (dBc/Hz)               | 10Hz                                                                               |            | -65       |           |
| Offset from Carrier                            | 100Hz                                                                              |            | -95       |           |
|                                                | 1KHz                                                                               |            | -115      |           |
|                                                | 10KHz                                                                              |            | -130      |           |
|                                                | 100KHz                                                                             |            | -140      |           |

### PART NUMBERING GUIDE

**K1526BX X X** - Specify Frequency

"Blank" = TTL/CMOS 40%/60%

"C" = CMOS 45%/55%

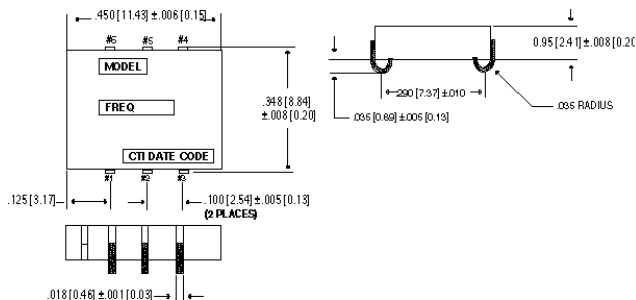
"T" = TTL 45%/55%

"Blank" =  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$  Operating Temp.

"M" =  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  Operating Temp.

Model Selection: See Table Above

## 5V 9x11mm Surface Mount Voltage Controlled Crystal Oscillators

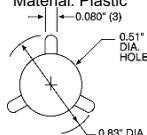


| PIN | FUNCTION           |
|-----|--------------------|
| 1   | Voltage Control    |
| 2   | Tri-State          |
| 3   | Gnd & Ground Plane |
| 4   | Output             |
| 5   | N/C                |
| 6   | + V <sub>CC</sub>  |

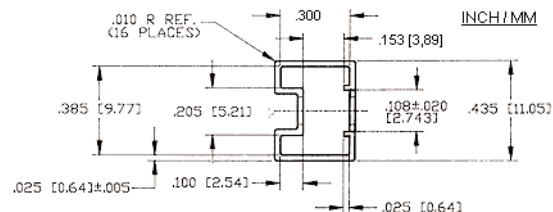
## TAPE & REEL SPECIFICATIONS

**Tape & Reel**  
**Shipping Tape**  
 Size: 24mm  
 Material: Black PVC,  
 Conductive .012" thick  
**Shipping Reel**  
 Size: 13" diameter  
 Material: Plastic

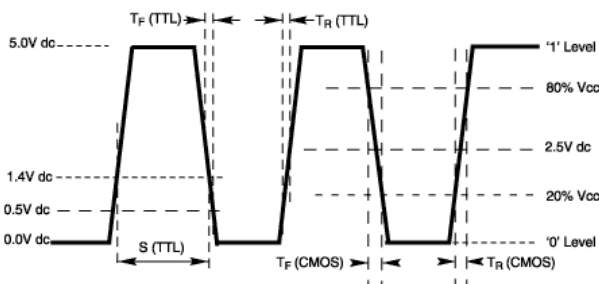
**13" Reel**  
Tape Length 16.5 yds  
Max. No. of Pockets: 750  
Leader Length: 16" min.  
Trailer Length: 14" min.  
Q.C. Sample Quantity: 10 pcs.  
Product/Reel: 500  
Cover Tape Thickness: .002"  
Cover Peel Strength: 75g  
Note: Minimum Order is 500



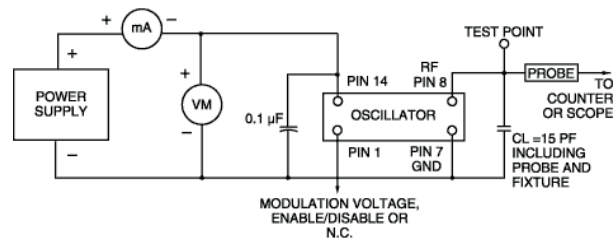
## SHIPPING TUBE CROSS SECTION



## OUTPUT WAVEFORM



## TEST CIRCUIT DIAGRAM



## MECHANICAL AND ENVIRONMENTAL SPECIFICATIONS

| TEST METHODS            | REFERENCE PROCEDURES                 | DESCRIPTION                                            |
|-------------------------|--------------------------------------|--------------------------------------------------------|
| Temperature Cycle       | MIL-STD-833, Mtd 1010, Cond. B       | -55°C to +125°C; Air-to-Air; 100 cycles; 10 min. dwell |
| Mechanical Shock        | MIL-STD-883, Mtd 2002, Cond. B       | 1500 g's                                               |
| Vibration               | MIL-STD 883, Mtd 2007, Cond. B       | 20-2000 Hz; 0.06 inch; 15g's; 3 planes                 |
| Humidity Steady State   | MIL-STD-202, Mtd 103                 | 40°C; 90%-95% R.H.; 56 days                            |
| Thermal Shock           | MIL-STD-883, Mtd 1011.7 Cond. B      | 100°C to 0°C; Water-to-Water; 15 cycles                |
| Electrostatic Discharge | MIL-STD-883, Mtd 3015 Class II       | 2 KV to 4 KV Threshold                                 |
| Solderability           | MIL-STD-883, Mtd 2022.2              | Solder dip; Meniscograph Criteria                      |
| Hermeticity             | MIL-STD-883, Mtd 1014.8, Cond. A1    | Mass spectro. 2 x 10-8 atmos. CC/sec He                |
| Resistance to Soldering | MIL-STD-202, Mtd 210D, Cond. J       | 235°C; 30 seconds                                      |
| Lead Integrity          | MIL-STD-883, Mtd 2004.5, Cond. A, B1 | Lead tension & bend stress                             |
| Marking Permanence      | MIL-STD-883, Mtd 2015.8              | Resistance to solvents                                 |
| Life Test               | MIL-STD-883, Mtd 1005.6              | 125°C, powered, 1000 hours minimum                     |