

### Description:

The T85B Temperature Compensated Voltage Controllable Crystal Oscillator (TCVCXO) Series products provide Stratum III level frequency stability with voltage controlled frequency adjust in a miniature 5 x 7 mm ceramic SMD package.



### Features:

- Available in frequencies from 5 to 26 MHz with 10 MHz, 12.8 MHz, 25 MHz, and other frequencies as standards
- +/-4.6 ppm overall frequency stability including 20 years aging
- +/-5 ppm frequency pull range
- CMOS and Clipped Sine Wave available
- Standard 5 x 7 mm ceramic SMD package
- RoHS-6 / Lead-free compliant
- Tri-state control

### Frequency Range, Operating Temperature, and Frequency Stability:

Frequency Range	Operating Temperature	Product Code	Frequency Stability	Stability (Overall)*	Product Code
5 to 26 MHz	-20 to +70° C	<b>C</b>	+/- 0.28 ppm	+/- 4.6 ppm	<b>A</b>
	-40 to +85° C	<b>D</b>	+/- 0.50 ppm	+/- 4.6 ppm	<b>B</b>
			+/- 1.00 ppm	+/-4.6 ppm	<b>C</b>

- Add +/- 1ppm setting calibration @ +25° C ; +/- 0.6 ppm for supply and load variation ; +/- 2.0 ppm for aging
- To achieve +/- 4.6 ppm overall stability or better
- For Frequency stabilities >= +/- 0.5 ppm with a clipped sinewave output the TV85B product should be selected
- +/- 0.28 ppm is not available from -40 to 85° C

### Aging: (typical at 10MHz after 30 days continuous operation)

Frequency	Timeframe	Aging	Product Code
10 MHz	20 Years	+/- 2.5 ppm	<b>N/A</b>

### Phase Noise:

Frequency	Offset	Phase Noise (Typ.)	Product Code
			<b>N/A</b>
10.0 MHz	1 Hz	- 60 dBc/Hz	<b>N/A</b>
	10 Hz	- 90 dBc/Hz	
	100 Hz	-120 dBc/Hz	
	1 KHz	-140 dBc/Hz	
	10 KHz	-155 dBc/Hz	
	100 KHz	-155 dBc/Hz	

### Supply Voltage (Vs):

Power Supply (Vs)	+3.3 Vdc +/-10%	+5.0 Vdc +/-10%
Product Code	<b>C</b>	<b>D</b>

### Current Consumption:

	CMOS	Clipped Sine Wave
Supply Current	6 mA	3.5 mA

### Environmental:

Storage Temperature	-55 to +125° C
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### Output Waveform:

	CMOS	Clipped Sine Wave	
HCMOS Output Levels (15pf load)	"0" < 0.1(Vs); "1" > 0.9(Vs)	Output Level	0.8 V p-p min.
Rise / Fall Time	<10ns (10% to 90%)		
Duty Cycle	45 to 55% @ 50% Logic 1		
Product Code	<b>A</b>	<b>B</b>	

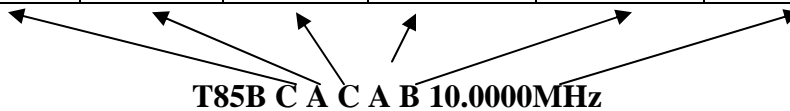
### Pulling Range:

Tuning Range	None (TCXO)	+/- 5 ppm
Product Code	<b>A</b>	<b>B</b>

\*Note: Only +/- 5 ppm minimum pull is available as a TCVCXO

### Ordering Options:

Operating Temperature	Frequency Stability	Supply Voltage	Output Waveform	Pulling Range	Operating Frequency
C	A	C	A	A	xx.xxxxMHz
D	B	D	B	B	
	C				



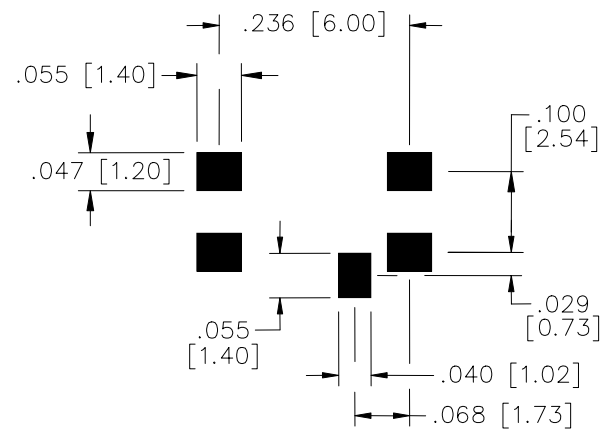
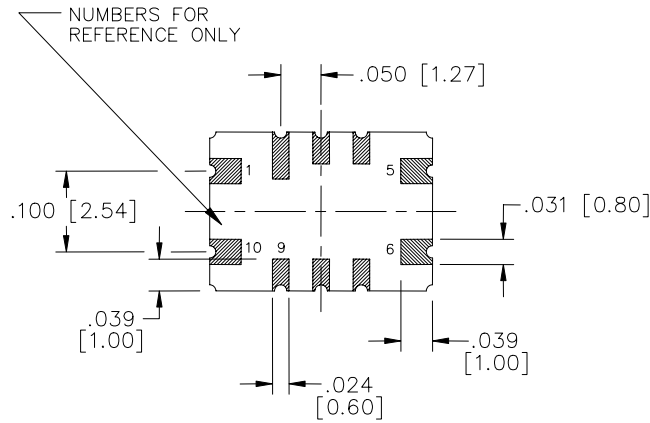
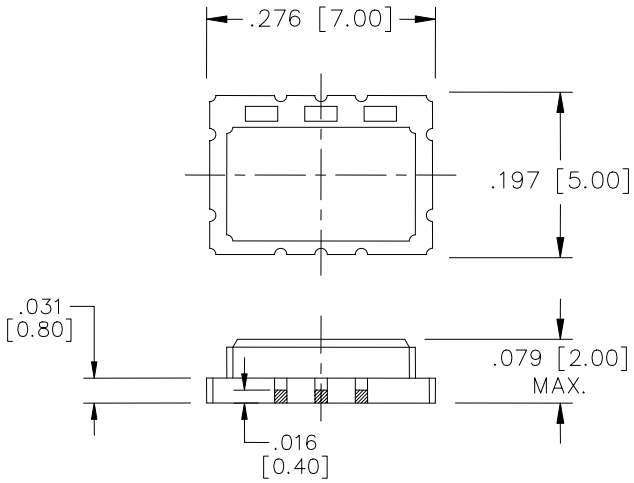
### Product Selection Code (refer to the above example):

This part is RoHs compliant; -20 to +70° C, +/- 0.28 ppm, 3.3 volt CMOS output with +/- 5 ppm pull, 10MHz operating frequency

\*\* Not all combinations are available in this product.

### Outline Drawing & Pin Out:

REVISION				
LET.	DESCRIPTION	DATE	BY	CKD.
A	PACKAGE STYLE/FOOTPRINT CHANGE	9-25-06	JPG	PWR
B	ADDED PIN 9 & REVISED PCB FOOTPRINT	10-4-06	JPG	PWR
C	ADDED PIN CONNECT OPTIONS FOR INTERNET MKG.	12-8-06	JPG	
D	PIN #9 HAD OPTIONAL N.C.	6-15-07	JPG	GMC



RECOMMENDED PCB FOOTPRINT



**ATTENTION**  
Static Sensitive  
Devices  
Handle only at  
Static Safe Work  
Stations

PIN CONNECTIONS

- 1. VOLTAGE CONTROL OR N.C.
- 5. GROUND
- 6. OUTPUT
- 9. TRISTATE CONTROL
- 10. + VDC

DO NOT SCALE PRINT. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES [MILLIMETERS].  
TOLERANCES: HOLES ±.002 ANGLES ±1° INCHES .xxx ± .004 [x.xx ± 0.10] .xx ± .008 [x.x ± 0.20]

**BLILEY TECHNOLOGIES INC.**  
2545 WEST GRANDVIEW BLVD.  
ERIE, PENNSYLVANIA 16506

MATERIAL:	SHOP TYPE	
FINISH:	SUPERSEDES	
	DR.	CKD.
	JPG	WCL
	AP.	AP.
	PWR	

OUTLINE DRAWING T85B			
SIZE	FSCM NO.	DRAWING NO.	REV.LET.
A	71034	812034	D
SCALE:	5:1	DATE DRAWN	8-10-2006

PE20D-1

**How to Order This Product:**

Contact Bliley Technologies with Product Selection Code from Ordering Options Section above.

**Attn:**

Sales @ Bliley

Fax: **814-833-2712**

Phone: 814-838-3571

Email: [info@bliley.com](mailto:info@bliley.com)

Web: [www.bliley.com](http://www.bliley.com)

Date: \_\_\_\_\_

**From:**

Name: \_\_\_\_\_ Company: \_\_\_\_\_

Fax: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Quantities to Quote: \_\_\_\_\_ Target Price: \$ \_\_\_\_\_

Application / Reference #: \_\_\_\_\_