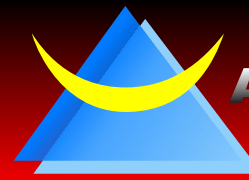


# TFS2 SERIES

- VCTCXO
- HCMOS, Sinewave, Clipped Sine
- 1.000MHz to 160.000MHz
- Stability Down to  $\pm 1$ ppm



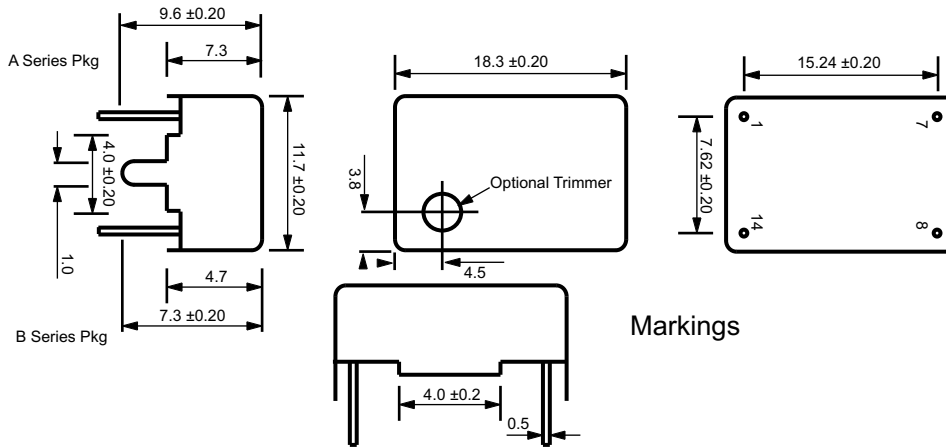
**ASCEND**

FREQUENCY DEVICES

## Electrical Specifications

Frequency Range:	H Option = HCMOS Output C Option = Clipped Sine Output Z Option = Sinewave Output	1.000MHz to 160.000MHz 8.000MHz to 160.000MHz 8.000MHz to 160.000MHz
Frequency Stability:	vs. Aging = $\pm 1$ ppm per year max. vs. Voltage (with a 5% change) = $\pm 0.3$ ppm vs. Load (with a 10% change) = $\pm 0.3$ ppm	$\pm 1.0$ ppm to $\pm 5.0$ ppm
Output Load;	H Option or C Option Z Option	10K Ohms // 15pF 50 Ohms
Supply Current:	H Option C Option Z Option	35mA Maximum 3mA Maximum 5mA Maximum
Output:	H Option C Option Z Option	Logic "1" Level = 0.9Vdd Minimum; Logic "0" Level = 0.1Vdd Maximum 1.0V p-p Minimum 7dBm Minimum
Operating Temperature Range:	-	0°C to +50°C to -40°C to +85°C
Storage Temperature Range:	-	-40°C to +85°C
Supply Voltage (Vdd):	-	2.8 - 3.3Vdc or 5.0Vdc $\pm 5\%$
Internal Trim (Top of Can)	-	$\pm 3$ ppm Minimum
Control Voltage:	Vdd = 3.3V Vdd = 5.0V	1.65Vdc $\pm 1.5$ Vdc (Positive Slope) 2.5Vdc $\pm 2.0$ Vdc (Positive Slope)
Symmetry:	at 50% of waveform with HCMOS Load	40%/60%
Pad 1 Connection:	Blank Option	No Connect (Blank Option); $\pm 10$ ppm Minimum (V Option)

## Mechanical Dimensions



Pin	FUNCTION
1	N/C or Control Voltage
7	Case Ground
8	Output
14	Supply Voltage

### MARKING

Line 1: Ascend  
Line 2: XX.XXXX  
("R" Denotes RoHS Compliance)  
Line 3: XXXXXX (Date Code)

ALL DIMENSIONS  
IN MILLIMETERS

## Part Numbering Guide

**TFS2 A 3 H 15 D V T - 160.000M**

### Series

14 Pin Dip TCXO

### Package Option

A = A Series (7.3mm Height)  
B = B Series (4.7mm Height)

### Supply Voltage

3 = 3.3V  
5 = 5.0V

### Output Type

H = HCMOS, C = Clipped Sinewave, or Z = Sinewave

### Frequency Stability\*

10 =  $\pm 1.0$ ppm  
15 =  $\pm 1.5$ ppm  
20 =  $\pm 2.0$ ppm  
25 =  $\pm 2.5$ ppm  
30 =  $\pm 3.0$ ppm  
35 =  $\pm 3.5$ ppm  
50 =  $\pm 5.0$ ppm

\* Check with factory for additional Stability vs. Temperature options

### Frequency

### Trimmer Option

Blank = No Trimmer  
M = Mechanical Trimmer

### Pin 1 Connection

Blank = No Connect  
V = Voltage Control

### Operating Temperature Range

A = 0°C to +50°C  
B = -10°C to +60°C  
C = -20°C to +70°C  
D = -30°C to +75°C  
E = -30°C to +80°C  
F = -40°C to +85°C  
G = 0°C to +70°C