

PECL 7 x 5 x 2.8mm SMD, 'W' Group

- Miniature 7 x 5 x 2.8mm ceramic SMD package
- Frequency range: 10.0MHz to 800.0MHz
- Supply voltage 3.3 Volts
- Low cost, low jitter for general applications
- RoHS compliant



DESCRIPTION

EMW576P series TCXOs are packaged in a miniature 6 pad 7 x 5 x 2.8mm ceramic SMD package. With differential PECL output, tolerances are available from ± 1.0 ppm over -30° to $+75^\circ\text{C}$. The part has a $0.01\mu\text{F}$ decoupling capacitor built in.

SPECIFICATION

Product Series Code	TCXO: EMW576P VCTCXO: VEMW576P
Frequency Range:	10.0MHz to 800.0MHz
Output Waveform:	Differential PECL
Initial Calibration Tolerance:	$< \pm 2.0$ ppm at $+25^\circ \pm 2^\circ\text{C}$
Standard Frequencies:	10.0, 12.8, 16.0, 19.44, 20.0, 27.0, 30.0, 32.768, 38.880, 40.0, 50.0, 54.0, 64.0, 65.5360, 77.76, 80.0, 100.0, 128.0, 155.520, 160.0, 200.0, 204.8, 311.04, 320.0, 409.6 and 622.080MHz (Partial list)
Operating Temperature Range:	See table
Frequency Stability	(see table)
vs. Ageing:	± 1.0 ppm max. first year
vs. Voltage Change:	± 0.3 ppm max. $\pm 5\%$ change
vs. Load Change:	± 0.3 ppm max. $\pm 10\%$ change
vs. Reflow (SMD type):	± 1.0 ppm max. for one reflow (Measured after 24 hours)
Supply Voltage:	+3.3 Volts
Output Logic Levels	
Logic High:	$V_{OH} = 2.275\text{V}$ (min.) $V_{DD} = -1.025\text{V}$ (min.)
Logic Low:	$V_{OL} = 1.680\text{V}$ (max.) $V_{DD} = -1.620\text{V}$ (max.)
Rise and Fall Times:	1.5ns typical
Duty Cycle:	$50\% \pm 5\%$
Start-up Time:	5ms typical, 10ms max.
Current Consumption	
10MHz to 25MHz:	65mA
25MHz to 100MHz:	85mA
100MHz to 800MHz:	115mA
Output Load:	50Ω to $V_{DD} - 2.0$ Volts
Phase Jitter (RMS) (12kHz to 20MHz):	2.6ps typ., 4.0ps max for 155.520MHz
Storage Temperature:	-55° to $+125^\circ\text{C}$

ENABLE/DISABLE FUNCTION

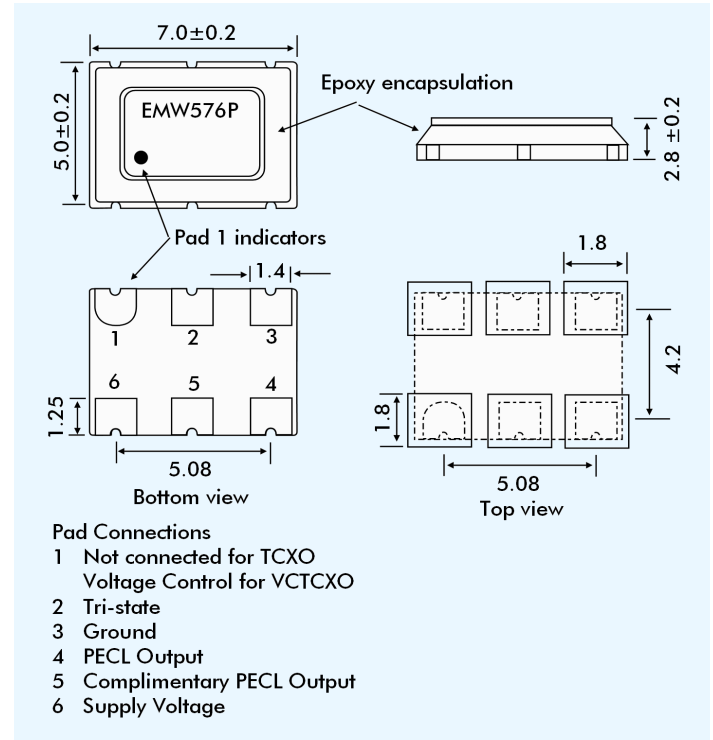
Pad 2 not connected:	PECL and differential PECL outputs enabled.
Disable:	Referenced to Ground (threshold) Oscillator is always on, buffer stage is disabled. Disable current: $50\mu\text{A}$ max. (at 0.0V), disable time 10ns max.
Enable:	Pad 2 $> 0.45V_{CC}$ Ground (threshold) Enable time 10ns plus one period of output freq.

FREQUENCY STABILITY OVER TEMPERATURE

Temp. Range ($^\circ\text{C}$)	Stability (ppm)	± 1.0	± 2.0	± 2.5	± 3.0	± 4.0	± 5.0
	0 ~ +50		✓	✓	✓	✓	✓
-10 ~ +60	ASK		✓	✓	✓	✓	✓
-20 ~ +70	X		✓	✓	✓	✓	✓
-30 ~ +75	X		✓	✓	✓	✓	✓
-40 ~ +85	X	X	X	X	ASK	ASK	✓

✓ = available, x = not available, ASK = call Technical Sales

EMW576P - OUTLINES AND DIMENSIONS



VEMW576P VOLTAGE CONTROL SPECIFICATION

Control Voltage:	$+1.5 \pm 1.0$ Volts
Frequency Deviation:	± 6.0 ppm min. with $V_{con} = +1.5 \pm 1.0\text{V}$
Slope Polarity:	Positive (increase of control voltage increases output frequency.)
Linearity:	6% typical, 10% maximum

SSB PHASE NOISE at 25°C

Offset	10Hz	100Hz	1kHz	10kHz	100kHz
Part = EMW576P33 at 155.52MHz (dBc/Hz)	-65	-95	-120	-125	-121
at 622.08MHz (dBc/Hz)	-55	-85	-109	-115	-110

PERIOD JITTER

Frequency (MHz)	38.880	77.760	155.520	622.080
RMS (typ.)	2.2ps	3.5ps	4.3ps	5.0ps
Peak to Peak	17.0ps	25.0ps	27.0ps	32.0ps

PART NUMBERING SCHEDULE

Example: **EMW576P33-155.52-2.5/-30+75**

Series Description	EMW576P
TCXO =	EMW576P
VCTCXO =	VEMW576P
Supply Voltage	33 = 3.3 VDC
Frequency (MHz)	155.52
Stability over OTR (\pm ppm)	2.5
Operating Temperature Range (OTR) ($^\circ\text{C}$)	-30 to +75
Lower and upper limits	-30 and +75