REV B.

VS2 SERIES: VCXO OSCILLATOR, HCMOS, +5.0 VDC, 7x5mm Package

DESCRIPTION: A crystal controlled, high frequency, highly stable, voltage controlled oscillator, adhering to HCMOS Standards. The output can be Tri-stated to facilitate testing or combined multiple clocks. The device is contained in a sub-miniature, very low profile, leadless ceramic SMD package with 6 gold contact pads. This miniature oscillator is ideal for today's automated assembly environments.

APPLICATIONS AND FEATURES:

- **Common Frequencies: 16.384 MHz; 19.44 MHz; 27 MHz; 38.88 MHz; 51.84 MHz;**
- **+5.0 VDC HCMOS**
- **Frequency Range from 1 to 51.84 MHz**
- **Miniature Ceramic SMD Package Available on Tape and Reel**
- **Lead Free**

· ELECTRICAL PARAMETERS:

PARAMETER	SYMBOL	TEST CONDITIONS*1	VALUE	UNIT
Nominal Frequency	fo		1.000 ~ 51.840	MHz
Supply Voltage	Vcc		+5.0 ±10%	VDC
Supply Current MAX	Is		35.0	mA
Output Logic Type			HCMOS	
Load		Connected from output to ground	15	pF
Output Voltage Levels	Voh Vol		0.9•Vcc MIN 0.1•Vcc MAX	VDC VDC
Duty Cycle	DC	Measured at 50% of Vcc	40/60 to 60/40 or 45/55 to 55/45	%
Rise / Fall Time	tr / tf	Measured at 20/80% and 80/20% Vcc Levels	6.0 MAX *2	ns
Jitter	J	RMS, Fj = 12 kHz…20 MHz	1 TYP	ps
Overall Frequency Stability	Δf/fc	Op. Temp., Aging, Load, Supply and Cal. Variations	±50*4	ppm
Control Voltage Range	VC	Positive slope; 10% linearity MAX	0 to +5.0	VDC
Settability	Vfo		+2.5 ± 0.5	VDC
Absolute Pull Range	APR	Minimum guaranteed freq. pull over Δf/fc	See Part Numbering *3	ppm
Input Impedance	Zin		10 MIN	kΩ
Modulation Bandwidth	BW	-3 dB	10 MIN	kHz
Pin 2 Output Enabled Output Disabled	En Dis	High Voltage or No Connect Ground	0.7•Vcc MIN 0.3•Vcc MAX	VDC VDC
Absolute voltage range	Vcc(abs)	Non-Destructive	-0.5…+7.0	VDC

*1 Test Conditions Unless Stated Otherwise: Nominal Vcc, Nominal Load, +25 ±3°C
*2 Frequency Dependent
*3 Not All APR's Available With All Temperature Ranges—Consult Factory For Availability
*4 Tighter stabilities available at narrow temperature ranges—Consult Factory For Availability

· ENVIRONMENTAL PARAMETERS:

PARAMETER	SYMBOL	TESTCONDITIONS*1	VALUE	UNIT
Operating temperature range	Ta		SEE PART NUMBER TABLE	°C
Storage temperature range	T(stg)		-55…+90	°C

· PART NUMBERING SYSTEM:

SERIES	SYMMETRY	TEMPERATURE RANGE (°C)	APR (ppm)	FREQUENCY (MHz)
VS2: VCXO with HCMOS Output	A: 40/60 to 60/40% T: 45/55 to 55/45%	R: 0…+50 S: 0…+70 U: -20…+70 V: -40…+85	F: ±32 ppm H: ±50 ppm G: ±80 ppm J: ±100 ppm	1.000…51.840

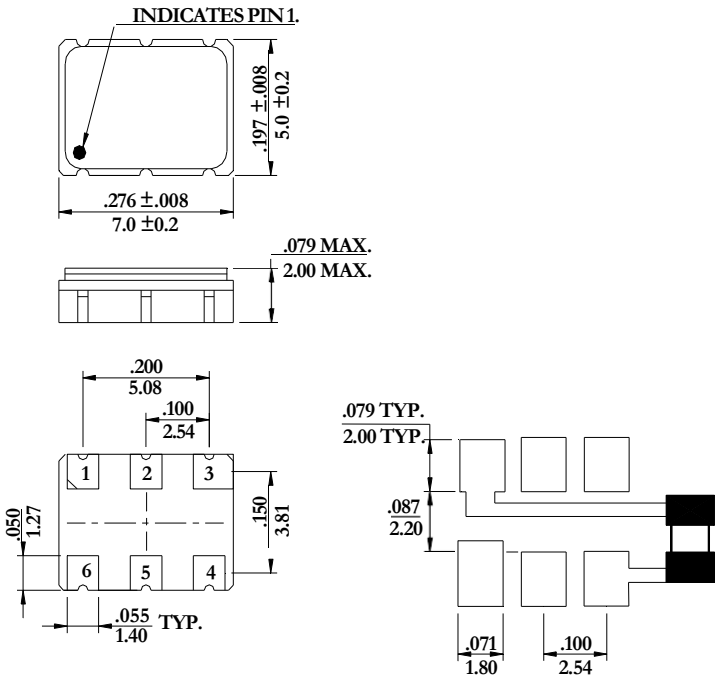
EXAMPLE: VS2ASH-38.880

VCXO Oscillator, 7x5mm Package, +5.0 VDC Supply Voltage, HCMOS Output, 40/60% Symmetry, 0…+70°C Operating Temperature Range, ±50 ppm APR, 38.880 MHz

REV B.

Consult the factory for any custom requirements.

- **MECHANICAL PARAMETERS:**



SOLDER PATTERN

***0.01μF external by-pass filter is recommended as shown on solder pattern.**

OUTLINE TOLERANCE:
±0.006" / 0.15mm
(Unless otherwise specified)

PIN FUNCTIONS:
[1] VOLTAGE CONTROL
[2] ENABLE/DISABLE
[3] CASE GROUND
[4] OUTPUT
[5] NO CONNECT
[6] SUPPLY VOLTAGE

TYP. MARKING:
VS2ASH
38.88
RAL D/C