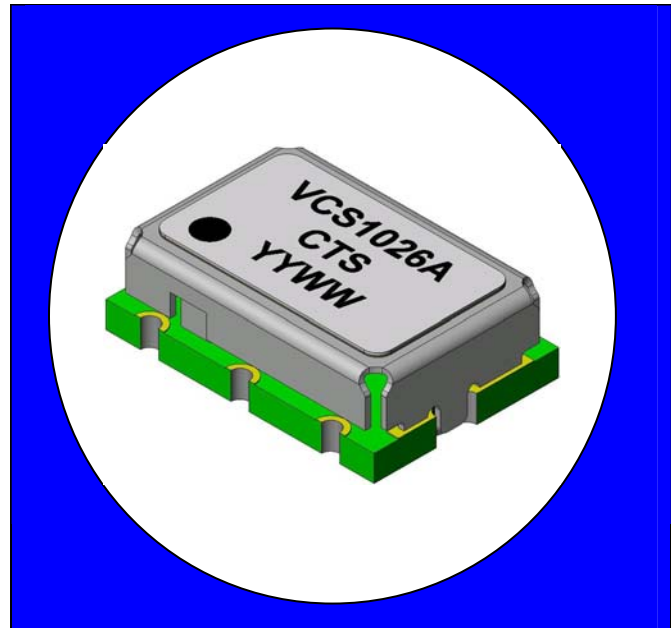


### FEATURES

- Industry Standard 5x7mm SMT Footprint
- +3.3 Vdc Supply Voltage
- -40°C to 85°C Temp. Range
- LVPECL differential outputs
- ± 50ppm Absolute Pull Range (APR)
- Output Enable/Disable Function
- SAW resonator
- Extremely Low Jitter
- Tape & Reel Packaging
- RoHS Compliant

### DESCRIPTION

Surface mount 5x7mm VCSO operating at 3.3V supply with complementary LVPECL outputs for use in datacom & telecom applications.



### ELECTRICAL SPECIFICATIONS

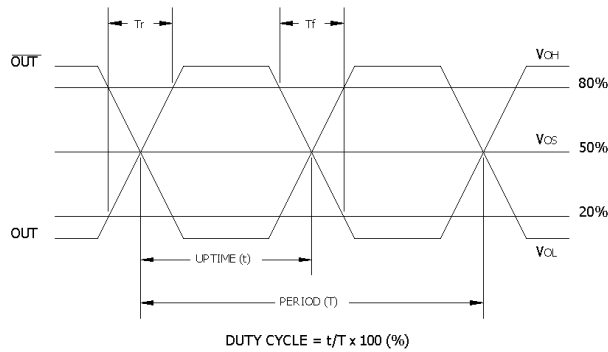
Parameter	Conditions & Remarks	Min	Typical	Max	Unit
<b>Operating Conditions</b>					
Nominal Frequency	$f_{NOM}$	-	622.080	-	MHz
Operating Temperature Range		-40	-	85	°C
Storage Temperature Range		-55	-	125	°C
Supply Voltage	$V_{CC}; \pm 5\%$	3.135	3.300	3.465	Vdc
Supply Current	$I_{CC}; \text{Max. } V_{CC}; T_A = 25^\circ\text{C}$ load = 50Ω to $V_{CC} - 2V$	-	60	70	mA
Load	output to $V_{CC} - 2V$	-	50	-	Ω
<b>Frequency Stability</b>					
Frequency vs. Temperature	ref to $T_A = 25^\circ\text{C}; V_C = \text{constant}$	+20	-	-150	ppm
<b>Electronic Frequency Control</b>					
Input Impedance	$Z_i$	50	100	-	kΩ
Control Voltage Range	$V_C$ ; positive monotonic transfer	0.3	-	3.0	Vdc
Gain Transfer		-	180	-	ppm/V
Absolute Pull Range	APR; all causes (see note 1)	± 50	-	-	ppm
Modulation Bandwidth	-3dB ref. 100Hz	-	50	-	kHz
Linearity	Deviation from best linear fit	-	2	10	%

NOTE 1: Minimum guaranteed frequency shift ( $\Delta f/f_{NOM}$ ) under all conditions (temperature, aging, supply voltage, load) for 15 years at an average effective operating temperature of +55°C

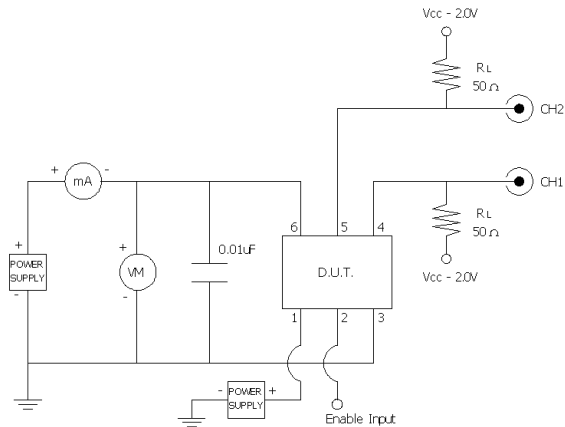
### ELECTRICAL SPECIFICATIONS (Continued)

Parameter	Conditions & Remarks	Min	Typical	Max	Unit	
<b>Output Parameters</b>						
Output Signal		LVPECL				
Amplitude		$V_{OL}$	-	-	$V_{CC}-1.620$	Vdc
		$V_{OH}$	$V_{CC}-1.025$	-	-	
Rise/Fall Times	20% to 80%	-	250	400	ps	
Duty Cycle	@ 50% of output signal	45	50	55	%	
Start up time	to reach 90% of final amplitude	-	-	10	ms	
Phase Noise		100Hz	-	-85	-75	dBc/Hz
		1kHz	-	-110	-100	dBc/Hz
		10kHz	-	-140	-130	dBc/Hz
		100kHz	-	-143	-140	dBc/Hz
		1MHz	-	-143	-140	dBc/Hz
Phase Jitter	12kHz to 20MHz (calculated from Phase Noise)	-	0.16	0.3	ps RMS	
	50kHz to 80MHz (calculated from Phase Noise)	-	0.16	0.3	ps RMS	

### LVPECL OUTPUT WAVEFORM



### TEST CIRCUIT, LVPECL LOAD

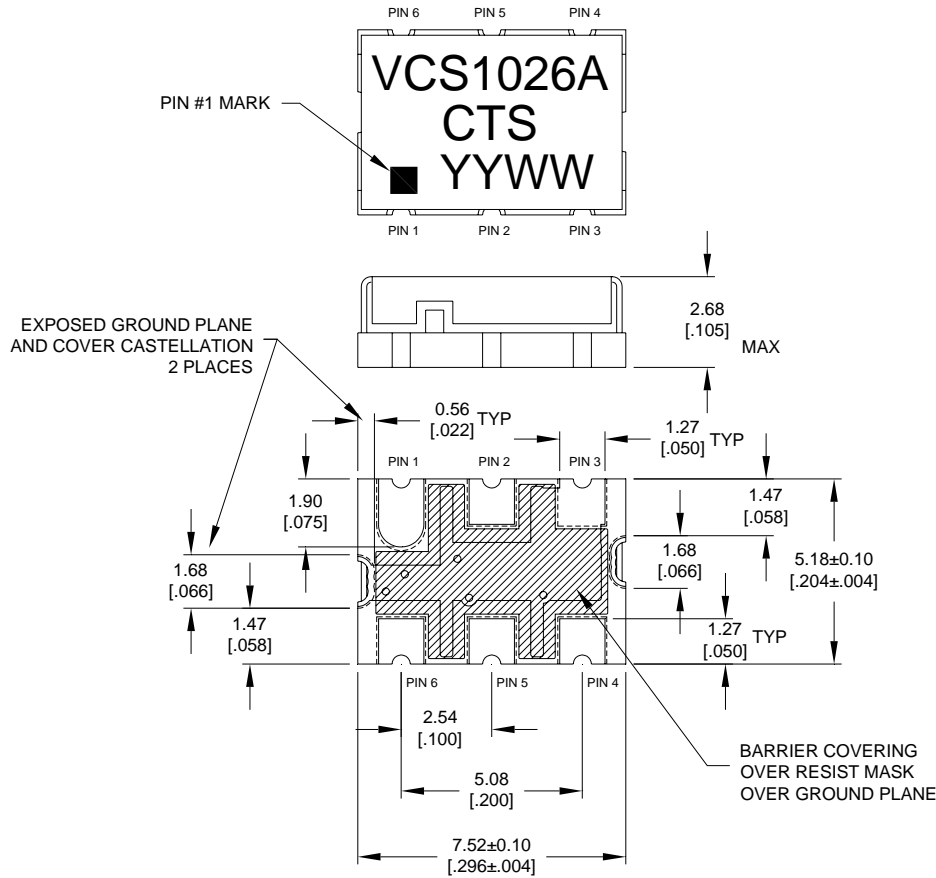


### OUTPUT ENABLE/DISABLE LOGIC

Pad 2		Pad 4	Pad 5
Low "0"	outputs disabled	HI Z	HI Z
Open	outputs enabled	Output	Comp. Output
High "1"	outputs enabled	Output	Comp. Output

## MECHANICAL SPECIFICATIONS

### PACKAGE DRAWING

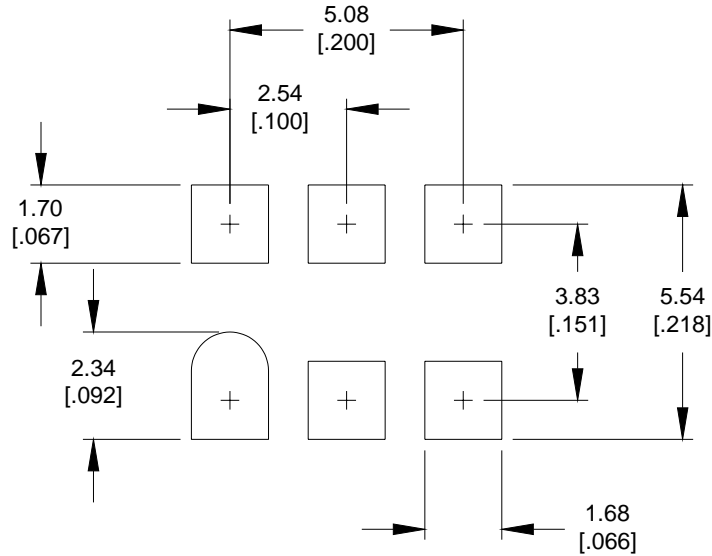


**Lead Termination Finish:** Gold flash, <10 micro inch, over 100 micro inch minimum Ni plated Cu  
**Co-Planarity** (from seating plane): 0.1 [0.004] maximum

Dimensions in mm and [inches]

- 1) Control Voltage -  $V_C$
- 2) Enable/Disable Control
- 3) Ground/Case
- 4) Output
- 5) Complementary Output
- 6) Supply Voltage -  $V_{CC}$

### SUGGESTED SOLDER PAD GEOMETRY

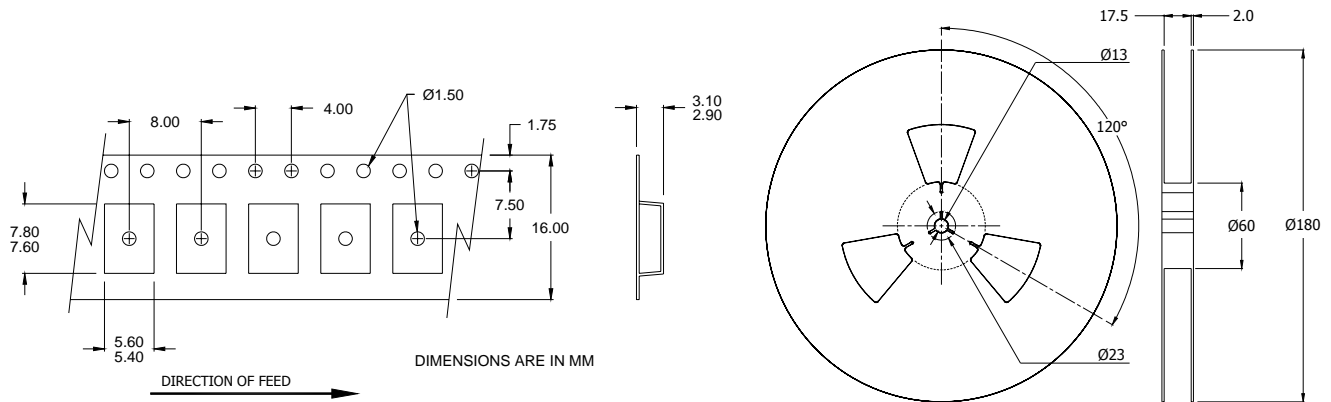


Dimensions are in mm and [inches].

### MAXIMUM SOLDERING PROFILE

Temperature	217°C	260°C (Absolute max temperature)
Time	60-150 sec	10 sec. max
Note: Part is not designed to be reflowed in an inverted position.		

### TAPE AND REEL INFORMATION



Device quantity is 1000 pieces max. per 180mm reel.

MSL Level: 1

This product is fully compliant to RoHS Directive 2002/95/EC