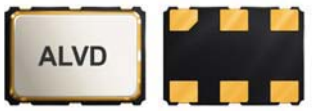
CERAMIC SMD CRYSTAL CLOCK OSCILLATOR WITH VOLTAGE CONTROL

ALVD



7.0 x 5.0 x 1.8mm

Pb RoHS Compliant

FEATURES:

- Based on a proprietary digital multiplier
- Tri-State Output
- Low Phase Jitter
- 2.5V to 3.3V +/- 5% operation
- Ceramic SMD, low profile package

APPLICATIONS:

- SONET, xDSL
- SDH, CPE
- STB

STANDARD SPECIFICATIONS:

PARAMETERS	
ABRACON P/N	ALVD Series
Frequency Range	750 KHz to 800 MHz
Operating Temperature	0°C to +70°C (see options)
Storage Temperature	-55°C to +125°C
Overall Frequency Stability	±50 PPM max. (see options)
Supply Voltage (Vdd)	3.3V ± 10%
Voltage Control (Vcc)	0.3VDC min, 1.65VDC typ, 3.0 VDC max.
Symmetry at 1/2 Vdd	40/60% max.
Output Level	See options (PECL, CMOS, or LVDS)
Pullability	± 50ppm (see option)
Tristate Function	"1" (VIH>= 0.7* Vdd) or open: Oscillation
	"0" (VIL< 0.3* Vdd) : Hi Z
Aging per year	±5 ppm max.
RMS Phase Jitter	3ps typical, 5ps max. (12KHz~20MHz)
Period Jitter (peak to peak)	35 ps typical
Phase Noise	-112 dBc/Hz @ 1kHz Offset from 155.52MHz
	-125 dBc/Hz @ 10kHz Offset from 155.52MHz
	-123 dBc/Hz @ 100KHz Offset from 155.52MHz
	-109 dBc/Hz @ 1kHz Offset from 622.08MHz
	-110 dBc/Hz @ 10kHz Offset from 622.08MHz
	-109 dBc/Hz @ 100KHz Offset from 622.08MHz

PECL:

Supply current $_{DD}$):**25mA max (for Fo<24MHz),65mA max (for 24MHz<Fo<96MHz),100mA max (96MHz<Fo<700MHz)**
Output Logic High: **V_{dd}-1.025V min, V_{dd}-0.880V max.**
Output Logic Low: **V_{dd}-1.810V min. V_{dd}-1.620V max.**
Symmetry (Duty Cycle): **45% min, 50% typ, 55% max,**
Rise time: **0.6nSec typ,1.5nS max**
Fall time: **0.6nSec typ, 1.5nS max**

CMOS:

Supply current (I_{DD}):15**mA max (for Fo<24MHz),30mA max (for 24MHz<Fo<96MHz), 40mA max (96MHz<Fo<700MHz)**
Output Clock Rise/ Fall Time [10%~90% VDD with 10pF load]: **1.2ns typ, 1.6ns max.**
Output Clock Duty Cycle [Measured @ 50% VDD]: **45% min, 50% typical, 55% max**

30332 Esperanza, Rancho Santa Margarita, California 92688
tel 949-546-8000 | fax 949-546-8001 | www.abracon.com

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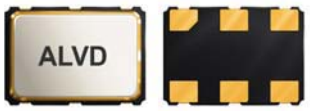

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LVDS:

Supply current (I_{DD}):25**mA max (for Fo<24MHz),45mA max (for 24MHz<Fo<96MHz),80mA max (96MHz<Fo<700MHz)**
Output Clock Duty Cycle @ 1.25V: **45% min, 50% typical, 55% max**
Output Differential Voltage (V_{OD}): **247mV min, 355mV typical, 454mV max**
VDD Magnitude Change (ΔV_{OD}): **-50mV min, 50mV max**
Output High Voltage : **V_{OH} = 1.4V typical, 1.6V max.**
Output Low Voltage: **V_{OL} = 0.9V min, 1.1V typical**
Offset Voltage [R_L = 100Ω]: **V_{OS} = 1.125V min, 1.2V typical, 1.375V max**
Offset Magnitude Change [R_L = 100Ω]: **ΔV_{OS} = 0mV min, 3mV typical, 25mV max**
Power-off Leakage (I_{OXD}) [Vout=VDD or GND, VDD=0V] = **±1µA typical, ±10µA max.**
Differential Clock Rise Time (t_r) [R_L=100Ω, CL=10pF]: **0.2nS min, 0.7nS typical, 1.0nS,max**
Differential Clock Fall Time (t_f) [R_L=100Ω, CL=10pF]: **0.2nS min, 0.7nS typical, 1.0nS max**

PIN ASSIGNMENTS

PIN #	Name	DESRIPTION
1	Vc	Voltage Control
2	Tristate	Tristate
3	GND	Ground
4	Q	PECL, LVDS, or CMOS Output.
5	Q	Complimentary PECL,LVDS, or NC.
6	V_{DD}	VDD Connection.

TRI-STATE PIN OPERATION:

OUTPUT TYPE OPTION		PIN 2 logic level*	Output State (Tri-state)
P	PECL	0 (Default)	Enabled
		1	Disabled
P1	PECL1	0	Disabled
		1	Enabled
V	LVDS	0	Disabled
		1(Default)	Enabled
C	CMOS	0	Disabled
		1(Default)	Enabled

*Connect to VDD for logic level "1", connect to ground for logic level "0".

OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ALVD - Frequency - □ - □ - □ - □ - □

Frequency
XX.XXXXMHz

Operating Temp.	
D	-10ºC~60ºC
E	-20ºC~70ºC
F	-30ºC~70ºC
N	-30ºC~85ºC
L	-40ºC~85ºC

Frequency Stability	
R	±25ppm max.
K	±30ppm max.
H	±35ppm max.

Output Level	
P	PECL
P1	PECL1
V	LVDS
C	CMOS

Packaging	
Blank	Bulk
T	Tape and Reel

Pullability	
N100	±100ppm

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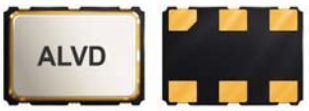

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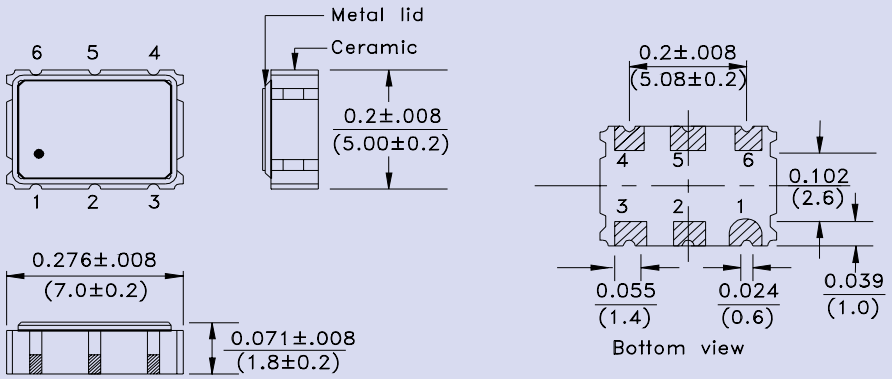
OUTLINE DRAWING:



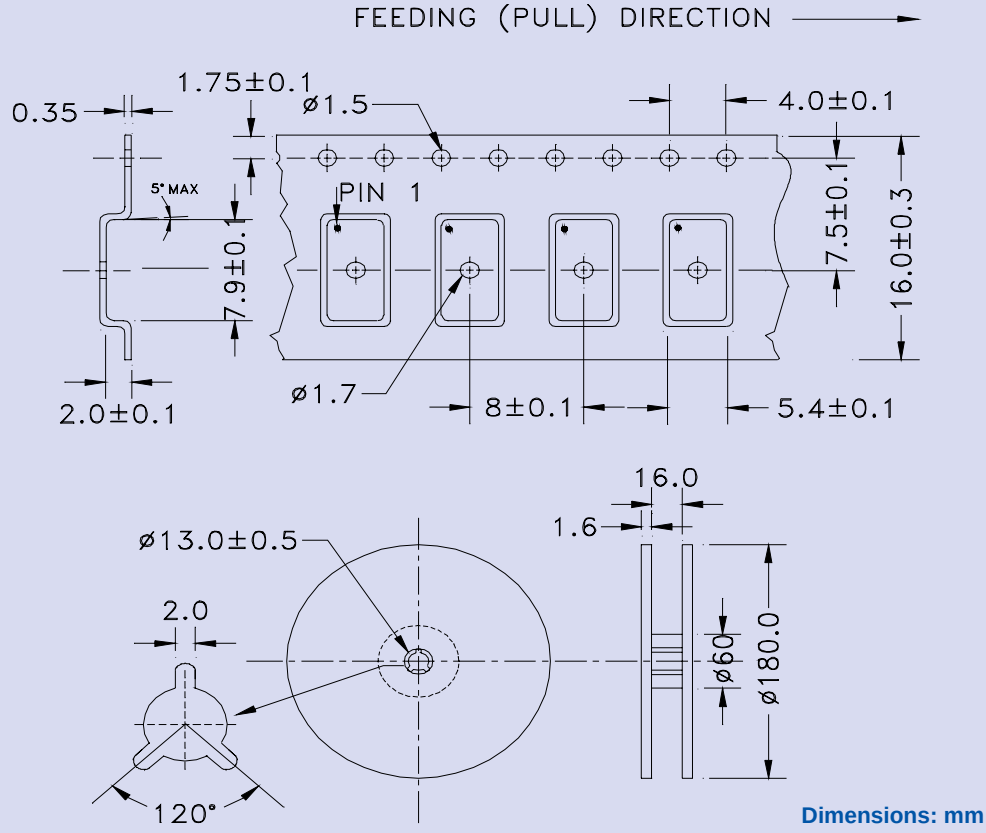
Dimensions: Inches (mm)

PIN	FUNCTION
1	Vc
2	Tri-state
3	GND
4	Q
*5	$\overline{Q}$
6	V_{DD}

Note: It is recommended to use an approximately 0.01uF bypass capacitor between PIN 3 and 6.

*Complimentary PECL/LVDS or NC.

TAPE & REEL:



Dimensions: mm

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