



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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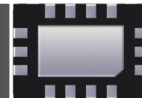
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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



LOW JITTER PIN CONFIGURABLE LVDS OUTPUT ULTRA MINIATURE PURE SILICON™ SMD CLOCK OSCILLATORS

ASEMCLV



3.2 x 2.5 x 0.85 mm

ASEMCLV



RoHS
Compliant

FEATURES:

- Ultra Miniature Pure Silicon™ Clock Oscillator
- Pin Configurable LVDS output
- Low Jitter (Period Jitter RMS 2.5ps typical)
- Low Integrated Phase Jitter 2ps max
- Tight Stability +/-10ppm -40 to +85C
- Excellent Shock & Vibration Immunity

APPLICATIONS:

- Consumer Electronics
- Storage Area Networks
- SATA, SAS, Fibre Channel
- Passive Optical Networks
- EPON, 10G-EPON, GPON, 10G-PON
- Ethernet
- 1G, 10GBASE-T/KR/LR/SR, and FCoE
- PCI Express

Low Jitter
Pin Configurable
CMOS Output
3G MEMS

STANDARD SPECIFICATIONS:

Pre-programmed Output Frequency Configuration

| Ordering Info | Freq (MHz) | Freq Select Bits [FS1, FS0] – Default is [11] | | | |
|----------------------------------|------------------|---|----------|-------|--------------|
| | | 00 | 01 | 10 | 11 |
| Standard Frequency Configuration | f _{OUT} | 148.35165 | 74.17582 | 148.5 | 74.25 |
| Custom Configuration | f _{OUT} | Contact Abracon for customized configurations | | | |

Frequency select bits [FS1, FS0] are weakly tied high so if left **floated**, the default setting will be [11] and the device will output the associated frequency highlighted in **Bold**. If other frequency combinations are required, please contact Abracon for customized configuration. Please see the configurable frequency range in the section 2.0

Key Electrical Specifications

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|--------------------------------------|--|---------|---------|-------|-----------------------------------|
| Configurable frequency range | 10 | ----- | 460 | MHz | Commercial, Industrial temp range |
| Operating Temperature | -20 | ----- | +70 | °C | See options |
| Storage Temperature | -55 | ----- | +150 | °C | |
| Overall Frequency Stability*1 | -50 | ----- | +50 | ppm | See options |
| Supply Voltage (Vdd) | +2.25 | ----- | +3.6 | V | |
| Startup Time | ----- | ----- | 5 | ms | T=25°C |
| Enable Time | ----- | ----- | 20 | ns | |
| Disable Time | ----- | ----- | 5 | ns | |
| Disable Current | ----- | 21 | 23 | mA | |
| Tri-state Function (Standby/Disable) | "1" (VIH≥0.75*Vdd) or Open: Oscillation "0" (VIL<0.25*Vdd) : Hi Z | | | V | 40kΩ pull-up resistor embedded |
| Aging | -5.0 | ----- | +5.0 | ppm | First year |
| Supply Current (I _{dd}) | ----- | 29 | 32 | mA | RL=100Ω, 156.25MHz |
| Output Offset Voltage | 1.125 | ----- | 1.40 | V | RL=100Ω Differential |
| Delta Offset Voltage | ----- | ----- | 50 | mV | |
| Peak to Peak Output Swing | | 350 | | mV | Single Ended |
| Rise Time | Tr | ----- | 200 | ps | RL=100Ω, CL=2pF |
| Fall Time | Tf | ----- | 200 | ps | 20%/80%*VDD |
| Duty Cycle | | 48 | ----- | 52 | % Differential |

*1. Frequency stability includes frequency variations due to initial tolerance, temp. and power supply voltage

ABRACON IS
ISO9001:2008
CERTIFIED



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Key Electrical Specifications (continued)

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|--------------------------------------|---------|---------|---------|-------|------------------------------|
| Period Jitter RMS (J_{PER}) | ----- | 2.5 | ----- | ps | F0= 156.25MHz |
| Integrated Phase Jitter (J_{PH}) | ----- | 0.28 | 2 | ps | 200kHz ~ 20MHz, 156.25MHz |
| | ----- | 0.40 | 2 | | 100kHz ~ 20MHz, 156.25MHz |
| | ----- | 1.70 | 2 | | 12kHz ~ 20MHz, 156.25MHz |

➤ **ABSOLUTE MAXIMUM RATINGS:**

| Item | Minimum | Maximum | Unit | Condition |
|-----------------|---------|--------------|------|-----------|
| Supply Voltage | -0.3 | +4.0 | V | |
| Input Voltage | -0.3 | $V_{dd}+0.3$ | V | |
| Junction Temp. | ----- | +150 | °C | |
| Storage Temp. | -55 | +150 | °C | |
| Soldering Temp. | ----- | +260 | °C | 40sec max |
| ESD | | | V | |
| HBM | | 4,000 | | |
| MM | | 400 | | |
| CDM | | 1,500 | | |

➤ **OPTIONS AND PART IDENTIFICATION:**

(left blank if standard)

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| Operating Temp. | Overall Freq. Stability | Packaging |
|----------------------|-------------------------|----------------------|
| Blank: -20°C ~ +70°C | Blank: ±50ppm | Blank: 110pcs / Tube |
| L: -40°C ~ +85°C | R: ±25 ppm | T: 1,000pcs / reel |
| | Y: ±10ppm* | T3: 3,000pcs / reel |
| | | T5: 5,000pcs / reel |

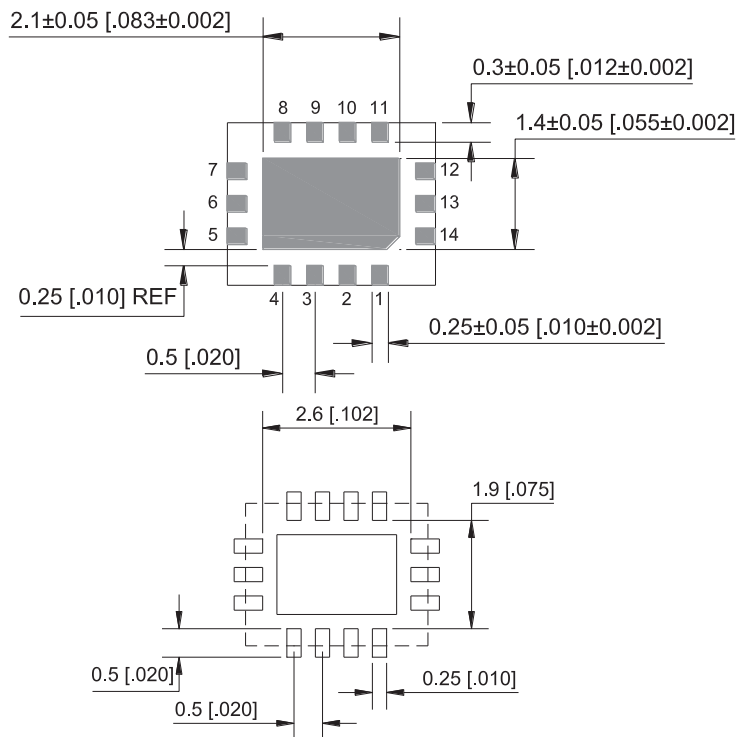
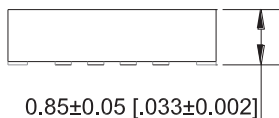
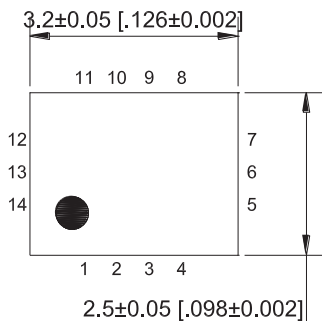
| Ordering Info | Freq (MHz) | Freq Select Bits [FS1, FS0] – Default is [11] | | | |
|----------------------------------|------------|---|----------|-------|--------------|
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| Standard Frequency Configuration | f_{OUT} | 148.35165 | 74.17582 | 148.5 | 74.25 |
| Custom Configuration | f_{OUT} | Contact Abracon for customized configurations | | | |

Default condition: Frequency select bits [FS1, FS0] are all left floated. FS1, FS0 are pulled high [11]
Frequency combination and default frequency is customized upon request. Please contact Abracon for the frequency combinations.

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MECHANICAL DIMENSIONS



Recommended Land Pattern

| Pin No. | Pin Name | Pin Type | Description |
|---------|----------|----------|---|
| 1 | Enable | I | Enables outputs when high and disables when low |
| 2 | NC | NA | Leave unconnected or grounded |
| 3 | NC | NA | Leave unconnected or grounded |
| 4 | GND | Power | Ground |
| 5 | FS0 | I | Least significant bit for frequency selection |
| 6 | FS1 | I | Most significant bit for frequency selection |
| 7 | NC | NA | Leave unconnected or grounded |
| 8 | Output+ | O | Positive LVDS Output |
| 9 | Output- | O | Negative LVDS Output |
| 10 | NC | NA | Leave unconnected or grounded |
| 11 | NC | NA | Leave unconnected or grounded |
| 12 | VDD2 | Power | Power Supply |
| 13 | VDD | Power | Power Supply |
| 14 | NC | NA | Leave unconnected or grounded |

Dimensions: mm (inches)



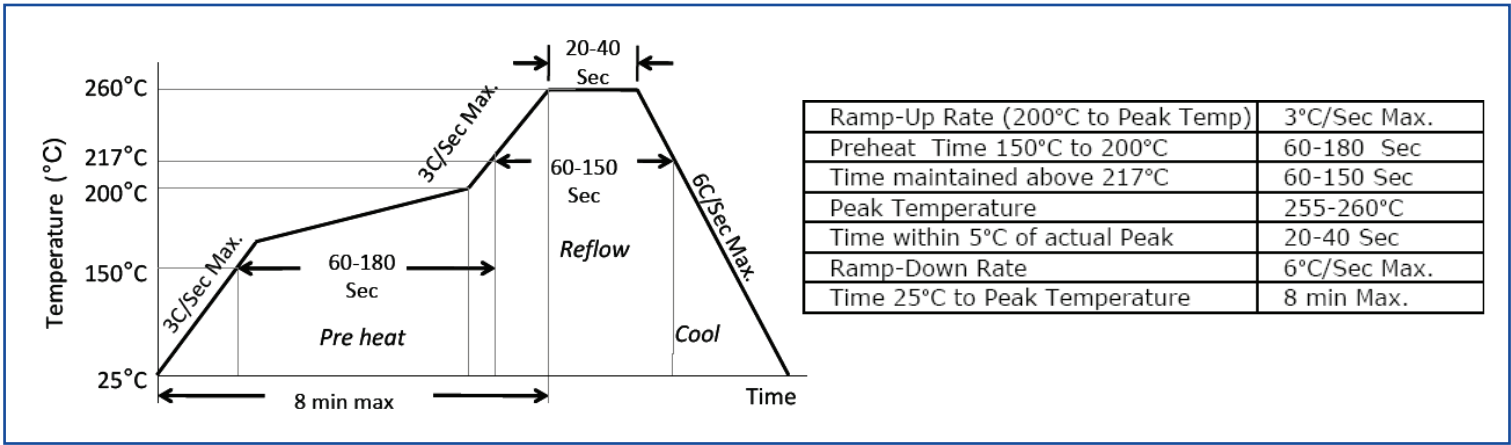
ASEMCLP

3.2 x 2.5 x 0.85 mm

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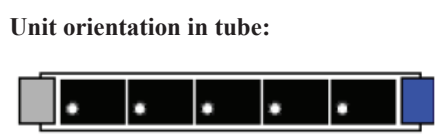
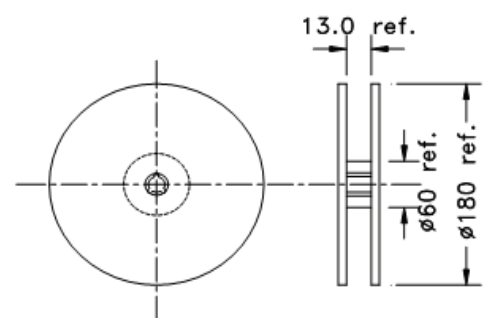
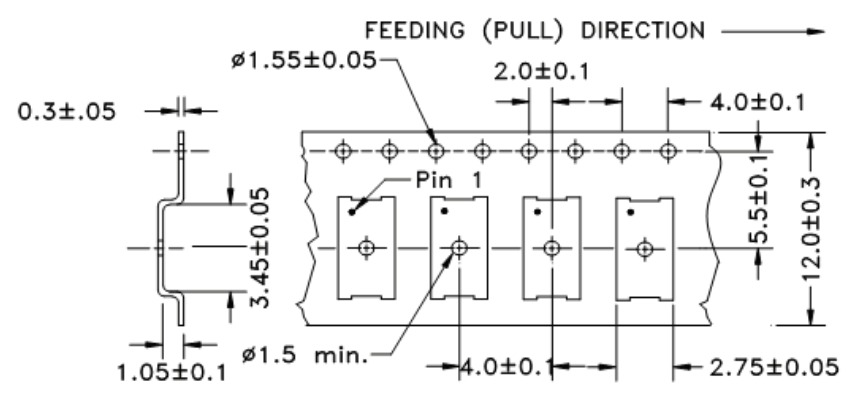


REFLOW PROFILE

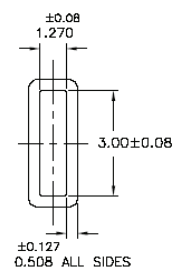
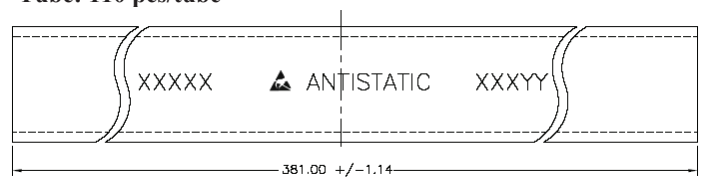


TAPE & REEL:

T= 1,000pcs/reel (D=180mm)
 T3= 3,000pcs/reel (D=180mm)
 T5= 5,000pcs/reel (D=330mm)



Tube: 110 pcs/tube



Dimensions: mm

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