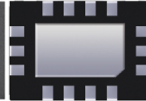


LOW JITTER PIN CONFIGURABLE DUAL LVDS OUTPUT ULTRA MINIATURE PURE SILICON™ CLOCK OSCILLATOR

ASEMDLV



Life Size 
3.2 x 2.5 x 0.85 mm

ASEMDLV

Moisture Sensitivity Level – MSL 1



RoHS
Compliant

FEATURES:

- Ultra Miniature Pure Silicon™ Clock Oscillator
- Pin Configurable LVDS Dual output
- Low Jitter (Period Jitter RMS 3ps 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
- HD/SD/SDI Video & Surveillance
- PCI Express

Low Jitter
Pin Configurable
LVDS Dual Output
3G MEMS

STANDARD SPECIFICATIONS:

Pre-programmed Output Frequency Configuration

| Ordering Info | Freq (MHz) | Freq Select Bits [FS2, FS1, FS0] – Default is [111] | | | | | | | |
|---------------------------|-------------------|---|-----|-----|--------|--------|--------|-----|------------|
| | | 000 | 001 | 010 | 011 | 100 | 101 | 110 | 111 |
| Frequency Configuration 1 | f _{OUT1} | 106.25 | 100 | 125 | 156.25 | 156.25 | 156.25 | 125 | 400 |
| | f _{OUT2} | 25 | 100 | 125 | 156.25 | 25 | 125 | 25 | 200 |
| Custom Configuration | f _{OUT1} | Contact Abracon for customized configurations | | | | | | | |
| | f _{OUT2} | | | | | | | | |

Frequency select bits [FS2, FS1, FS0] are weakly tied high so if left **floated**, the default setting will be [111] 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 (V _{dd}) | +2.25 | ---- | +3.6 | V | | |
| Startup Time | ---- | ---- | 5 | ms | | |
| Enable Time | ---- | ---- | 20 | ns | | |
| Disable Time | ---- | ---- | 5 | ns | | |
| Disable Current | ---- | 21 | 23 | mA | | |
| Tri-state Function (Standby/Disable) | "1" (VIH≥0.75*V _{dd}) or Open: Oscillation "0" (VIL<0.25*V _{dd}) : Hi Z | | | V | 40kΩ pull-up resistor embedded | |
| Aging | -5.0 | ---- | +5.0 | ppm | First year | |
| Supply Current (I _{dd}) | ---- | 89 | ---- | mA | RL=50Ω, 156.25MHz | |
| Output Logic Level | V _{OH} | V _{dd} -1.08 | ---- | V | RL=50 Ω | |
| | V _{OL} | ---- | V _{dd} -1.55 | | | |
| Peak to Peak Output Swing | ---- | 800 | ---- | mV | Single-Ended | |
| Rise Time | T _r | ---- | 250 | ps | RL=50 Ω, CL=2pF | |
| Fall Time | T _f | ---- | 250 | ps | 20%/80%*VDD | |
| Duty Cycle | | 48 | ---- | 52 | % | Differential |

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

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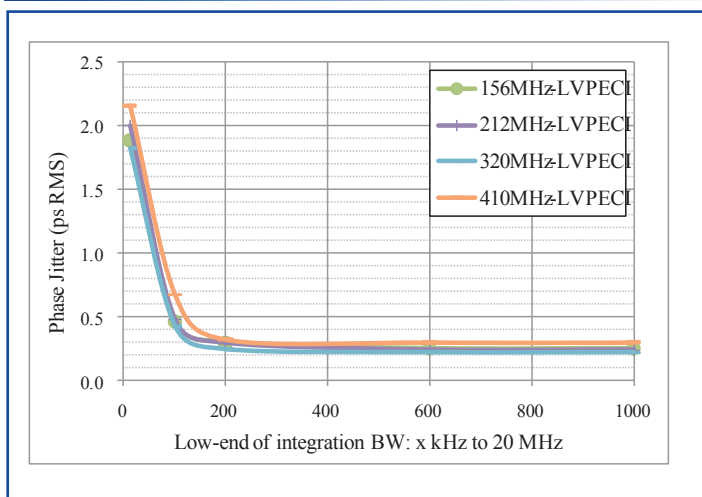


Life Size
3.2 x 2.5 x 0.85 mm

Key Electrical Specifications (continued)

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|--------------------------------------|---------|---------|---------|-------|------------------------------|
| Period Jitter RMS (J_{PER}) | ----- | 2.5 | ----- | ps | F01=F02= 156.25MHz |
| Integrated Phase Jitter (J_{PH}) | ----- | 0.25 | 2 | ps | 200kHz ~ 20MHz, 156.25MHz |
| | ----- | 0.38 | 2 | | 100kHz ~ 20MHz, 156.25MHz |
| | ----- | 1.70 | 2 | | 12kHz ~ 20MHz, 156.25MHz |

PHASE JITTER



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)

ASEMDLV - - -

| Operating Temp. |
|----------------------|
| Blank: -20°C ~ +70°C |
| L: -40°C ~ +85°C |

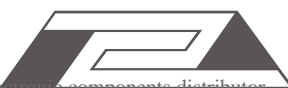
| Overall Freq. Stability |
|-------------------------|
| Blank: ±50ppm |
| Y: ±10ppm |
| R: ±25 ppm |

| Packaging |
|--------------------------------|
| Blank: Tube (110pcs / Tube) |
| T: Tape & Reel (1kpcs / reel) |
| T3: Tape & Reel (3kpcs / reel) |
| T5: Tape & Reel (5kpcs / reel) |

| Frequency Combination | Freq (MHz) | Freq Select Bits [FS2, FS1, FS0] – Default is [111] | | | | | | | |
|------------------------|------------|---|-----|-----|--------|--------|--------|-----|-----|
| | | 000 | 001 | 010 | 011 | 100 | 101 | 110 | 111 |
| Standard Configuration | f_{OUT1} | 106.25 | 100 | 125 | 156.25 | 156.25 | 156.25 | 125 | 400 |
| | f_{OUT2} | 25 | 100 | 125 | 156.25 | 25 | 125 | 25 | 200 |
| Custom Configuration | f_{OUT1} | Contact Abracon for customized configurations | | | | | | | |
| | f_{OUT2} | | | | | | | | |

Default condition: Frequency select bits [FS2, FS1, FS0] are all left floated. FS2, FS1, FS0 are pulled high [111]
Frequency combination and default frequency is customized upon request. Please contact Abracon for the frequency combinations.

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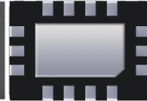


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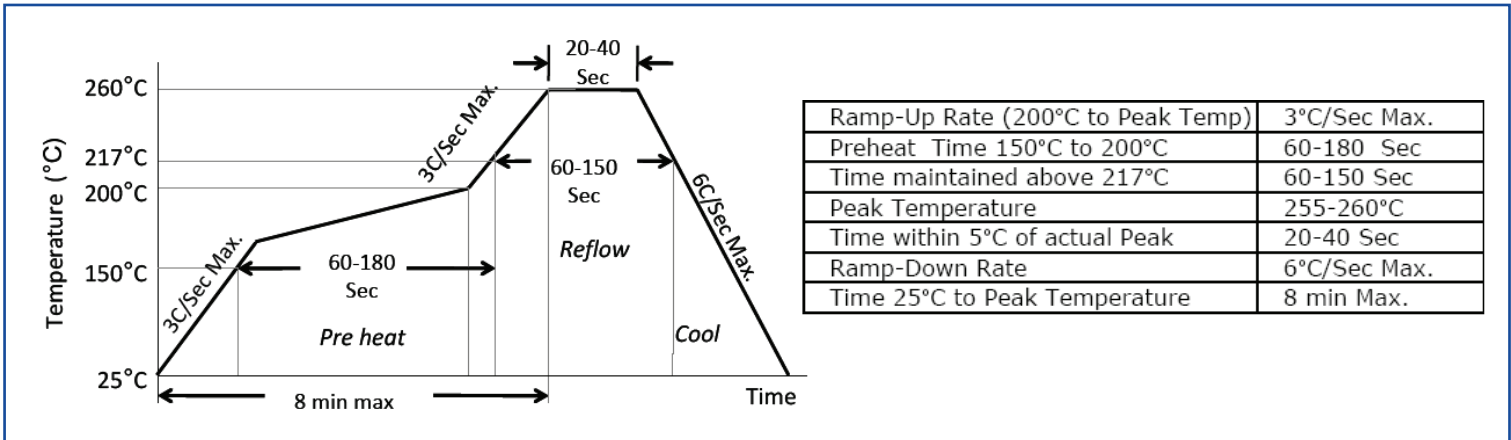


Life Size 3.2 x 2.5 x 0.85 mm

ASEMDLV

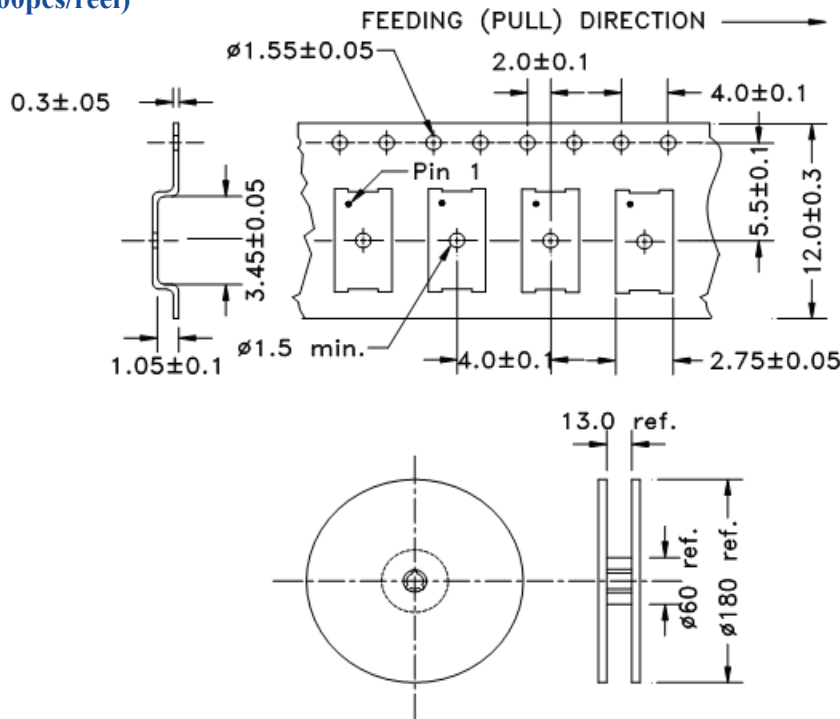


REFLOW PROFILE

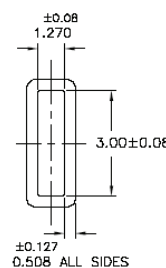
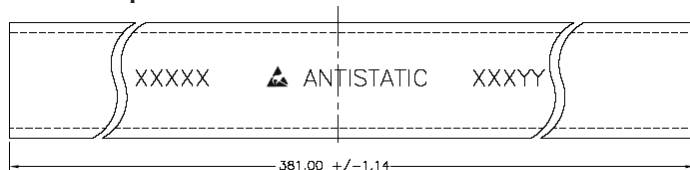


REFLOW PROFILE

T= Tape and reel (1,000pcs/reel)



Tube: 110 pcs/tube



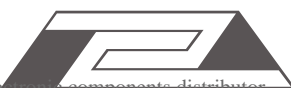
Unit orientation in tube:



Dimensions: mm

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