

AB-X0A5XXX-X Series

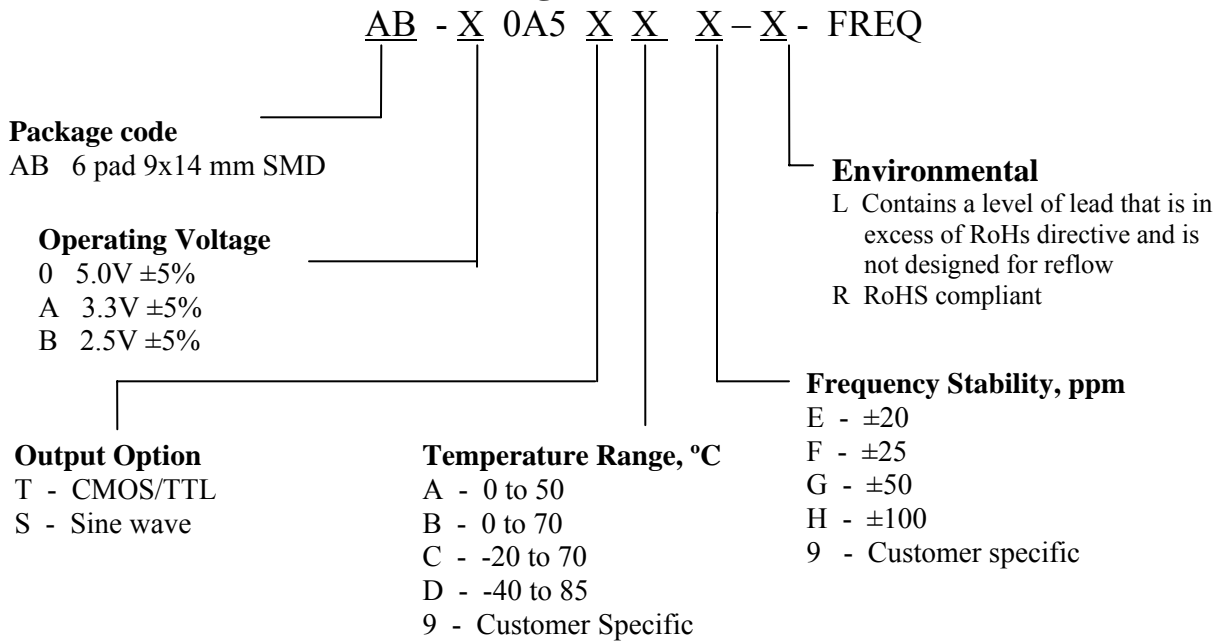
Sine wave or CMOS/TTL XO

Rev. D

Description

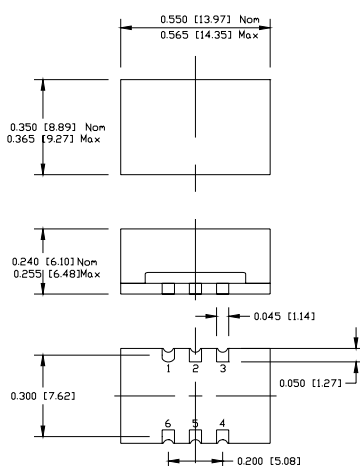
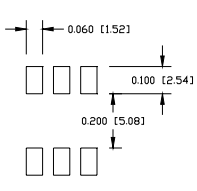
The AB-X0A5XXX-X crystal oscillator (XO) provides Sine wave or CMOS/TTL output options.. The device does not use any frequency multiplication, providing exceptionally low Phase Noise and Jitter. It's packaged in a miniature, FR-4 based 9x14 mm SMD package. COTS/Dual use.

Creating a Part Number



Drawing Specification

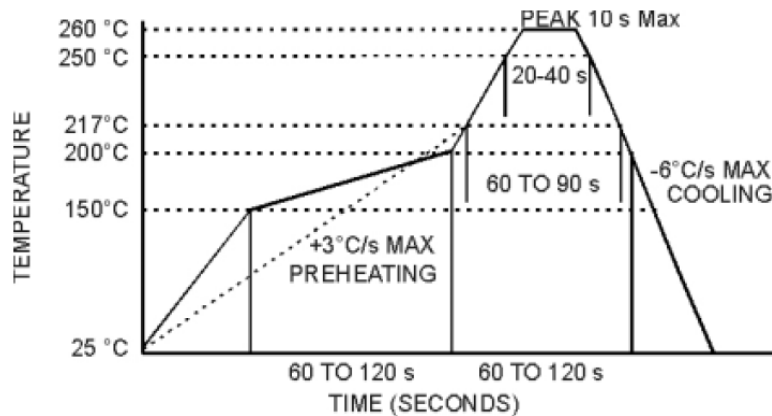
Rev D

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|---|--|
|  <p style="font-size: small; margin-top: 10px;"> <u>OUTLINE TOLERANCE:</u> +/-0.015" / 0.4mm (Unless otherwise specified) </p> <p style="font-size: x-small; margin-top: 5px;">All dimensions: Inches [mm]</p> <p style="font-size: x-small; margin-top: 5px;">RECOMMENDED PAD LAYOUT</p>  | <p style="font-size: small; margin-top: 0;"><u>OUTLINE TOLERANCE:</u> ±0.015" / 0.4mm (Unless otherwise specified)</p> <p style="font-size: small; margin-top: 5px;"><u>PIN FUNCTIONS:</u> [1] NC [2] N/C [3] GROUND [4] OUTPUT [5] NC [6] Vcc</p> |
|---|--|

Environmental and Mechanical Characteristics

| | |
|------------------------------|---|
| Operating temp. range | see part # table |
| Mechanical Shock | Per MIL-STD-202, Method 213, Cond. A |
| Thermal Shock | Per MIL-STD-883, Method 1011, Cond. A |
| Vibration | Per MIL-STD-883, Method 2007, Cond. A |
| Hermetic Seal | Leak rate less than 1×10^{-8} atm.cc/s of helium, crystal only |
| Soldering conditions | See MAX reflow profile below; The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended |

MAX Reflow Profile



The device may be reflowed once. Reflowing upside down is not allowed. NO CLEAN assembly is recommended

Rev. D

Absolute Maximum Ratings

| Parameter | Symbol | Value | Unit |
|-----------------------------|--------|-----------------|------|
| Operating Temperature Range | To | -40 to +85 | °C |
| Storage Temperature Range | Tst | -50 to +90 | °C |
| Supply Voltage | Vcc | -0.5 to 1.1 Vcc | V |

Electrical Parameters (1)

| Parameter | Symb | Conditions, Note | MIN | TYP | MAX | Unit | |
|----------------------|------------|--|---|---|---|--------|----|
| Nominal Frequency | Fo | | 12 | | 250 | MHz | |
| Supply Voltage | Vcc | Code 0 Code A Code B | 4.75 3.135 2.375 | 5.0 3.3 2.5 | 4.25 3.465 2.625 | V | |
| Supply current | Icc | Frequency & Vcc dependent, Consult factory | | | 50 | mA | |
| Output Logic Type | | S version T version | | Sine wave CMOS/TTL | | | |
| Load | | Sine - Internally AC-coupled CMOS/TTL | | 50 15pf/10K ohm | | Ohm | |
| Duty Cycle(Symmetry) | | At 50% Vcc; CMOS/TTL only | 45/55 | 50/50 | 55/45 | % | |
| Rise/Fall Time | Tr,Tf | 0.2Vcc to 0.8Vcc; CMOS/TTL F<70MHz 70MHz>F<125MHz 125MHz<F<250Mhz | | 3 2 1.5 | 5 3 2.5 | ns | |
| Output power | Pout | Into 50 Ohm, Sine wave only Note: 3dBm lower for Vcc 2.5V | 5 | 10 | | dBm | |
| Harmonics | Ph | Highest, Sine wave only | | | -30 | dBc | |
| Sub-Harmonics | Ps | | | none | | | |
| Jitter | Integrated | J | Integrated from Phase Noise, 12 KHz to 20 MHz , RMS | | 0.1 | 0.15 | ps |
| | | | 10Hz to 80KHz,RMS | | | 0.8 | ps |
| | | | 50 KHz to 80 MHz | | | 0.2 | ps |
| | | | Deterministic | | | 0 | ps |
| Phase Noise * | £(Δf) | @100 MHz | @ 10 Hz @100 Hz @1 KHz @10KHz @100KHz @>1MHz | -90 -120 -145 -160 -165 -165 | -85 -115 -140 -158 -165 -165 | dBc/Hz | |
| Frequency Stability | ΔF/F | Overall, including temperature, aging 10 years, shock and vibration | | See Chart | | ppm | |

* Please consult factory for performance at other frequencies.

Note: 1. All parameters, unless otherwise specified, are at nominal conditions, ie: T=25°C, Nominal Vcc & Nominal Load.