

HCMOS/TTL COMPATIBLE SURFACE-MOUNT PROGRAMMABLE CRYSTAL CLOCK OSCILLATOR

AP5S



RoHS
Compliant



5.0 x 3.2 x 1.2mm

FEATURES:

- Comparable performance to fixed frequency oscillator
- Low jitter with PLL technology

APPLICATIONS:

- Microcontroller
- FPGA
- CPLG
- Prototype evaluation
- Portable computers (Laptop, tablet PC)

For Small
Quantities,
Delivery Time
is 1-5 days

ELECTRICAL SPECIFICATIONS:

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|--|------------------------|--|-------------|---------|-------|----------------------|
| Frequency Range: | V _{dd} = 3.3V | 10 | ----- | 200 | MHz | |
| | V _{dd} = 2.5V | 10 | ----- | 166 | MHz | |
| Operating Temperature: | | 0 | ----- | +70 | °C | See options |
| Storage Temperature: | | -55 | ----- | +155 | °C | |
| Overall Frequency Stability*: | | -100 | ----- | +100 | ppm | See options |
| Supply Voltage (V _{dd}): | V _{dd} = 3.3V | 2.97 | 3.3 | 3.63 | V | Standard |
| | V _{dd} = 2.5V | 2.25 | 2.5 | 2.75 | V | Option 1 |
| Input Current: | V _{dd} = 3.3V | ----- | ----- | 30 | mA | |
| | V _{dd} = 2.5V | ----- | ----- | 20 | mA | |
| Symmetry: | | 45 | 50 | 55 | % | @ 1/2V _{dd} |
| Rise and Fall Time (Tr/Tf)**: | | ----- | 2.5 | 3.5 | ns | |
| Output Load: | | | | 15 | pF | CMOS |
| Output Voltage: | VOH | V _{dd} -0.4 | ----- | ----- | V | |
| | VOL | ----- | ----- | 0.4 | V | |
| Start-up Time: | | ----- | ----- | 10.0 | ms | |
| Tri-state function (Stand-by) : | | "1" (V _{IH} ≥ 0.7*V _{dd}) or Open: Oscillation "0" (V _{IL} < 0.3*V _{dd}) : Hi Z | | | | |
| Period jitter RMS (Reference only. Please contact Abracon for each frequencies.): | 25MHz | ----- | 2.0 | 4.0 | ps | |
| | 50MHz | ----- | 5.0 | 10.0 | ps | |
| | 100MHz | ----- | 7.0 | 14.0 | ps | |
| Period jitter Peak to Peak (Reference only. Please contact Abracon for each frequencies.): | 25MHz | ----- | 14.0 | 25.0 | ps | |
| | 50MHz | ----- | 25.0 | 35.0 | ps | |
| | 100MHz | ----- | 35.0 | 50.0 | ps | |
| Phase jitter RMS | 20MHz | ----- | 0.6 | 1.0 | ps | 12kHz to 10MHz |
| | 25MHz | ----- | 5.6 | 7.0 | ps | 12kHz to 10MHz |
| | 50MHz | ----- | 16.0 ~ 25.0 | 40.0 | ps | 12kHz to 20MHz |
| | 100MHz | ----- | 18.0 | 25.0 | ps | 12kHz to 20MHz |
| Aging: | | -3.0 | ----- | +3.0 | ppm | @+25°C First year |

* Inclusive of calibration @25°C, operating temperature range, input voltage variation, load variation, aging, shock, and vibration.

** Transition times are measured between 10% and 90% of V_{dd} with an output load of 15 pF.

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5.0 x 3.2 x 1.2mm

AP5S



OPTIONS & PART IDENTIFICATION:

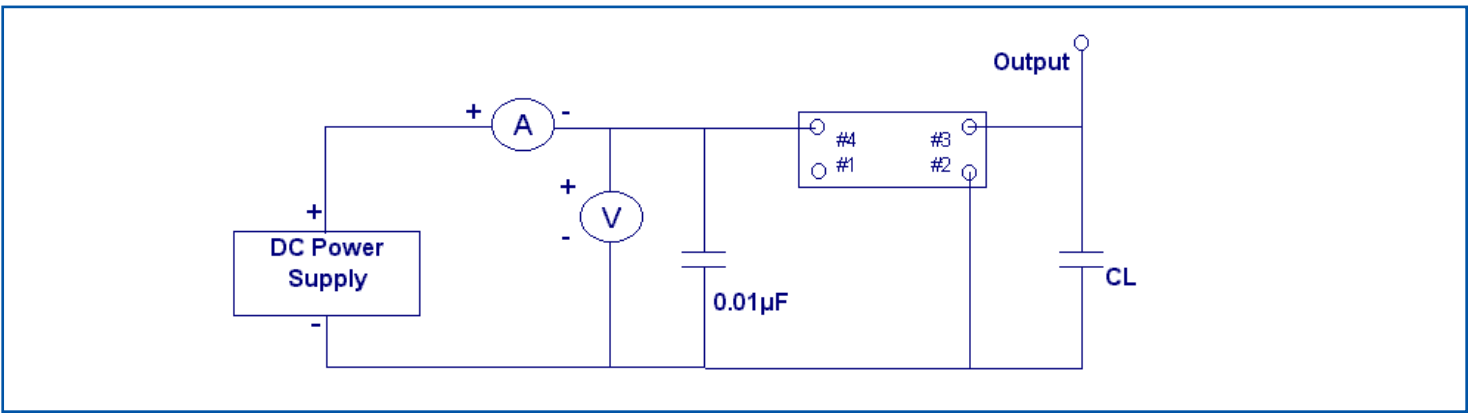
(Left blank if standard)

AP5S - MHz - -

| Supply Voltage | Frequency in MHz | Operating Temp. | Overall Freq. Stability | Packaging |
|----------------|--|------------------|-------------------------|----------------|
| Blank: 3.3V | Please specify the frequency in MHz. e.g. 14.31818MHz | I: 0°C ~ +50°C | J(**): ±20ppm | Blank: Bulk |
| I: 2.5V | | D: -10°C ~ +60°C | R: ±25ppm | T: Tape & Reel |
| | | E: -20°C ~ +70°C | K: ±30ppm | |
| | | F: -30°C ~ +70°C | C: ±50ppm | |
| | | N: -30°C ~ +85°C | | |
| | | L: -40°C ~ +85°C | | |

* Temp. option I, D, E and 0°C ~ +70°C only
Contact ABRACON for EJ or LR options. (Availability limited)

TEST CIRCUIT:



OUTLINE DRAWING:

Recommended land pattern

| Pin | Function |
|-----|-----------|
| 1 | Tri-State |
| 2 | GND/Case |
| 3 | Output |
| 4 | Vdd |

Note: Recommend using an approximately 0.01µF bypass capacitor between PIN 2 and 4.

Dimensions: inches (mm)

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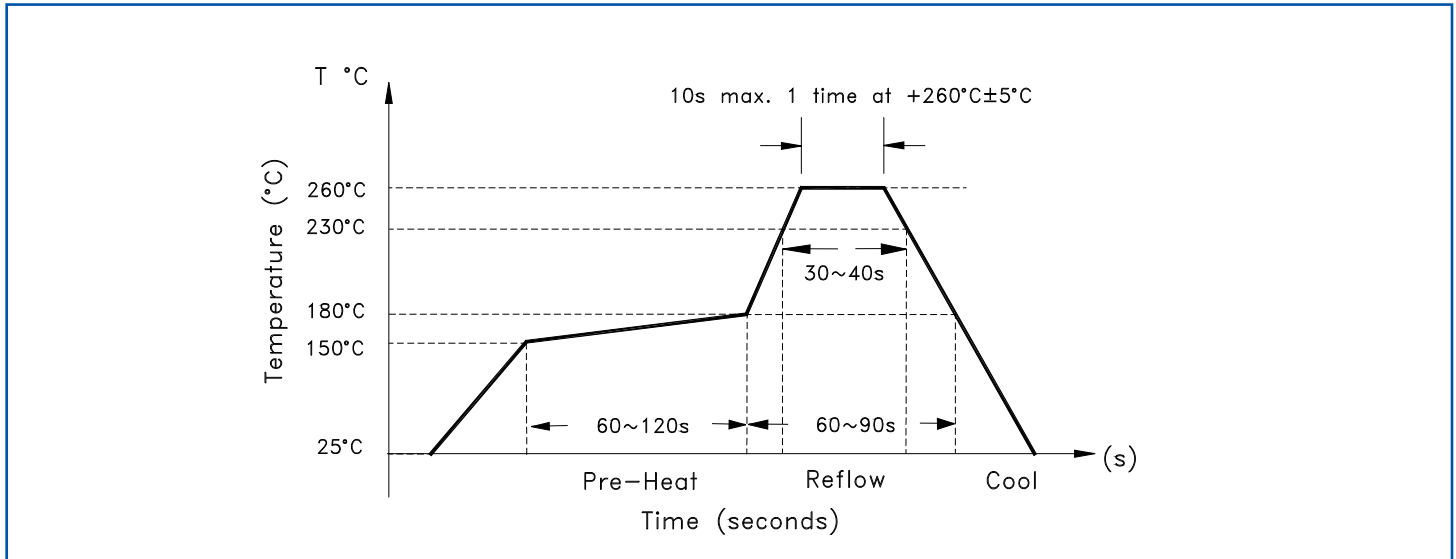
5.0 x 3.2 x 1.2mm

AP5S

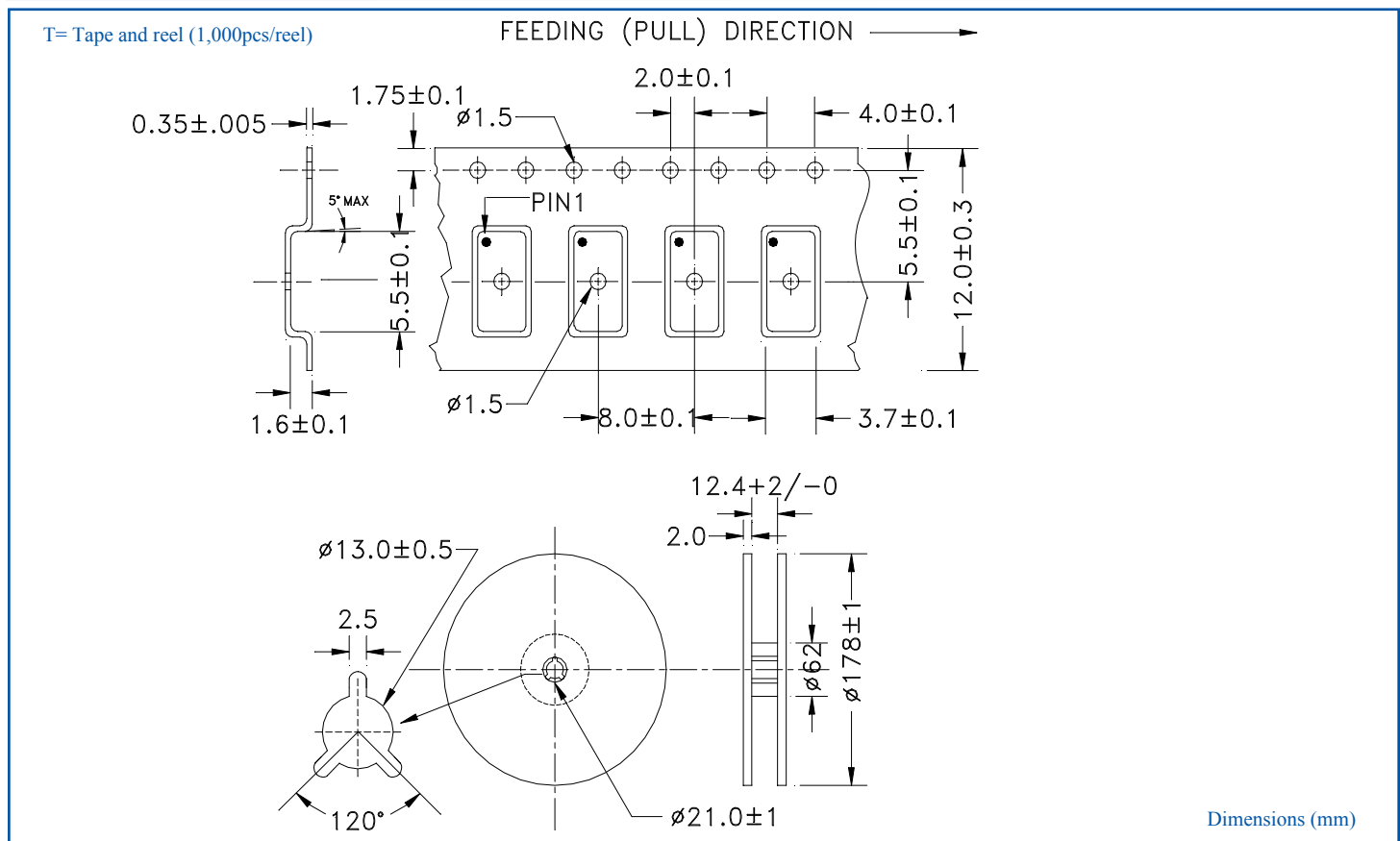


RoHS
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REFLOW PROFILE:



TAPE & REEL:



Need a test socket for the AP5S Series? To view compatible **PRECISION TEST SOCKETS** for these parts, click here. P/N AXS-5032-04-02

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