

3.3V, HCMOS, SMD Oscillator



Model: F4100 SERIES

RoHS Compliant / Pb Free

Rev. 1/16/2014

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• PART NUMBER SELECTION

| Part Number | Model Number | Frequency Stability ¹ | Operating Temperature (°C) | Frequency Range (MHz) |
|---------------------|--------------|----------------------------------|----------------------------|-----------------------|
| 116-Frequency-xxxxx | F4100 | ±100PPM | -10 ~ +70 | 0.012 ~ 170.000 |
| 117-Frequency-xxxxx | F4100R | ±100PPM | -40 ~ +85 | 0.012 ~ 170.000 |
| 124-Frequency-xxxxx | F4105 | ±50PPM | -10 ~ +70 | 0.012 ~ 170.000 |
| 125-Frequency-xxxxx | F4105R | ±50PPM | -40 ~ +85 | 0.012 ~ 170.000 |
| 126-Frequency-xxxxx | F4106 | ±25PPM | -10 ~ +70 | 0.012 ~ 165.000 |
| 127-Frequency-xxxxx | F4106R | ±25PPM* | -40 ~ +85 | 0.012 ~ 156.520 |
| 128-Frequency-xxxxx | F4108 | ±20PPM* | -10 ~ +70 | 0.012 ~ 162.000 |

• ELECTRICAL CHARACTERISTICS

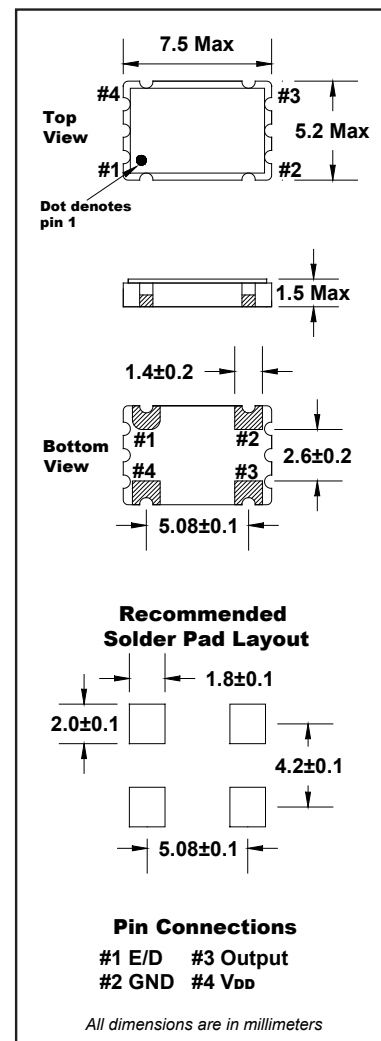
| PARAMETERS | MAX (unless otherwise noted) |
|--|------------------------------|
| Frequency Range (Fo) | 0.012 ~ 170.000 MHz |
| Storage Temperature Range (T _{STG}) | -55°C ~ +125°C |
| Supply Voltage (V _{DD}) | 3.3V ± 10% |
| Input Current (I _{DD}) | |
| 0.012 ~ 0.040 MHz | 3mA |
| 0.040+ ~ 1.500 MHz | 6mA |
| 1.500+ ~ 32.000 MHz | 15mA |
| 32.000+ ~ 50.000 MHz | 20mA |
| 50.000+ ~ 67.000 MHz | 25mA |
| 67.000+ ~ 170.000 MHz | 40mA |
| Output Symmetry (50% V _{DD}) | |
| 0.012 ~ 50.000 MHz | 45% ~ 55% |
| 50.000+ ~ 170.000 MHz | 40% ~ 60% |
| Rise Time (10% ~ 90% V _{DD}) (T _R) | |
| 0.012 ~ 80.000 MHz | 6nS |
| 80.000+ ~ 125.000 MHz | 4nS |
| 125.000+ ~ 170.000 MHz | 3nS |
| Fall Time (90% ~ 10% V _{DD}) (T _F) | |
| 0.012 ~ 80.000 MHz | 6nS |
| 80.000+ ~ 125.000 MHz | 4nS |
| 125.000+ ~ 170.000 MHz | 3nS |
| Output Voltage (V _{OL}) | 10% V _{DD} |
| (V _{OH}) | 90% V _{DD} Min |
| Output Current (I _{OL}) | 2mA Min |
| (I _{OH}) | -2mA Min |
| Output Load (HCMOS) | 15pF |
| Standby Current | 10µA |
| Start-up Time (T _s) | |
| 0.012 ~ 32.000 MHz | 5mS |
| 32.000+ ~ 170.000 MHz | 10mS |
| Output Disable Time ² | 150nS |
| Output Enable Time ² | |
| 0.012 ~ 32.000 MHz | 5mS |
| 32.000+ ~ 170.000 MHz | 10mS |
| Jitter (FO ≥ 100MHz) | |
| 12kHz ~ 20MHz | 0.3pS Typ. |
| RMS Period | 2.5pS Typ. |
| Cycle-to-Cycle | 20pS Typ. |

¹Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging, shock, and vibration. *Excludes Shock/Vibration

²An internal pullup resistor from pin 1 to pin 4 allows active output if pin 1 is left open.

Note: A 0.01µF bypass capacitor should be placed between V_{DD} (Pin 4) and GND (Pin 2) to minimize power supply line noise. Drawing is for reference to critical specifications defined by size measurements.

Certain non-critical visual attributes, such as side castellations, reference pin shape, etc. may vary. All specifications subject to change without notice.



• ENABLE / DISABLE FUNCTION²

| INH (Pin 1) | OUTPUT (Pin 3) |
|---|----------------|
| OPEN ² | ACTIVE |
| '1' Level V _{IH} ≥ 70% V _{DD} | ACTIVE |
| '0' Level V _{IL} ≤ 30% V _{DD} | High Z |

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• TAPE SPECIFICATIONS (millimeters)

| MODEL | A | B | C | D | E | F | STD Reel QTY |
|--------------|------|-----|-----|-----|------|------|--------------|
| F4100 Series | ∅1.5 | 4.0 | 8.0 | 7.5 | 16.0 | 2.15 | 2,000 |

• REEL SPECIFICATIONS (millimeters)

| MODEL | G | H | I | J | K | L | M |
|--------------|-----|-----|-----|-----|------|------|-----|
| F4100 Series | 2.0 | ∅13 | ∅21 | ∅80 | ∅255 | 17.5 | 2.0 |

