



Helping Customers Innovate, Improve & Grow



Features

- EFC Standard
- Small Size
- 100% RoHS Compliant
- Low Profile
- Frequency range of 6.4 - 52 MHz
- Standard Frequencies: 10, 12.8, 16.384, 19.44, 20, 20.48 MHz

Applications

- PCS Base Stations
- Land Mobile Radio
- Cellular Telephony
- Radio in the Local Loop

Previous Vectron Model Numbers - C2260

Performance Specifications

| Frequency Stabilities ¹ | | | | | | |
|--|-------|---------|-------|-------|---|----------------------|
| Parameter | Min | Typical | Max | Units | Condition | |
| vs. operating temperature range (referenced to +25°C) | -1.5 | | +1.5 | ppm | -40 to +85°C | Options ⁵ |
| | -1.0 | | +1.0 | ppm | -40 to +85°C | |
| | -2.5 | | +2.5 | ppm | -20 to +70°C | |
| | -1.0 | | +1.0 | ppm | -20 to +70°C | |
| | -1.0 | | +1.0 | ppm | 0 to +50°C | |
| | -0.5 | | +0.5 | ppm | 0 to +50°C | |
| Initial tolerance | -2.5 | | +2.5 | ppm | at time of shipment, nominal EFC V _s ±5% Load ±10% after 30 days of operation | |
| vs. supply voltage change | -0.5 | | +0.5 | ppm | | |
| vs. load change | -0.2 | | +0.2 | ppm | | |
| vs. aging / 1 Year | -1.0 | | +1.0 | ppm | | |
| Frequency Stabilities ¹ (Stratum 3 TCXO) <32MHz | | | | | | |
| vs. operating temperature range (referenced to +25°C) | -0.80 | | +0.80 | ppm | -20 to +70°C | Options ⁵ |
| | -0.28 | | +0.28 | ppm | 0 to +50°C | |
| | -0.28 | | +0.28 | ppm | -20 to +70°C | |
| | -0.80 | | +0.80 | ppm | -40 to +85°C | |
| | -0.28 | | +0.28 | ppm | -30 to +85°C | |
| | -0.28 | | +0.28 | ppm | -40 to +85°C | |
| Initial tolerance | -1.0 | | +1.0 | ppm | at time of shipment, nominal EFC V _s ±5% static Load ±5% static Note:*Stratum 3 per GR-1244-CORE: <±4.6ppm for all causes and 20 years aging, holdover: <±0.37ppm over 24 hours | |
| vs. supply voltage change | -0.2 | | +0.2 | ppm | | |
| vs. load change | -0.1 | | +0.1 | ppm | | |
| vs. aging / 20 Years | -2.5 | | +2.5 | ppm | | |
| Overall tolerance | -4.6 | | +4.6 | ppm | | |

Performance Specifications

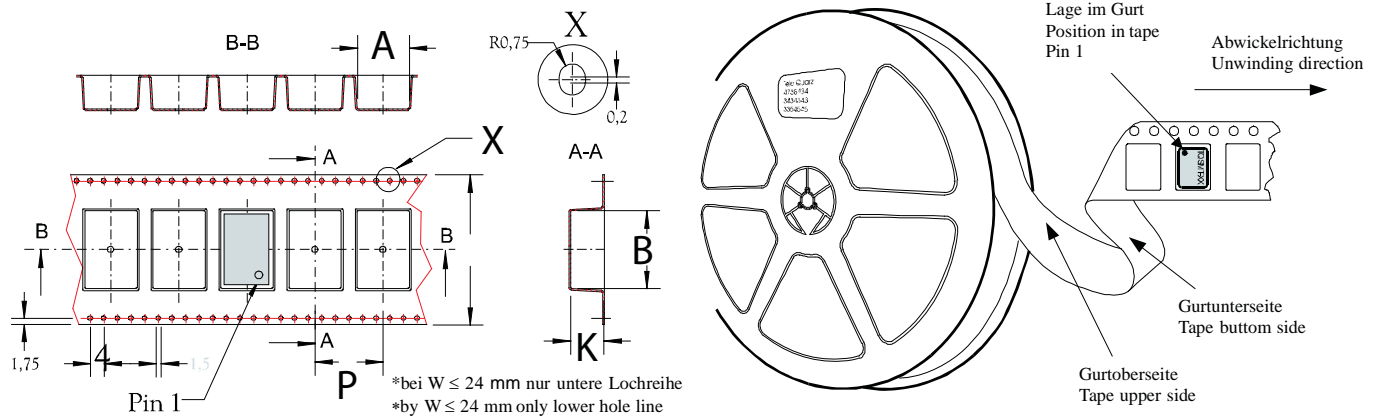
| Frequency Stabilities ¹ | | | | | | |
|---|-------|---------|-------|-------|---|----------------------|
| Parameter | Min | Typical | Max | Units | Condition | Options ⁵ |
| vs. operating temperature range (referenced to +25°C) For 10, 12.8, 16.384, 20.26 MHz | -0.15 | | +0.15 | ppm | 0 to +50°C | |
| Initial tolerance | -1.0 | | +1.0 | ppm | at time of shipment, nominal EFC $V_s \pm 5\%$ Load $\pm 10\%$ Note:*Stratum 3 per GR-1244-CORE: < ± 4.6 ppm for all causes and 20 years aging, holdover: < ± 0.37 ppm over 24 hours | |
| vs. supply voltage change | -0.2 | | +0.2 | ppm | | |
| vs. load change | -0.1 | | +0.1 | ppm | | |
| vs. aging / 20 Years | -2.5 | | +2.5 | ppm | | |
| Overall tolerance | -4.6 | | +4.6 | ppm | | |

| Supply Voltage (Vs) | | | | | | |
|---|--|------------------------------------|--|--|--|---------------------|
| Parameter | Min | Typical | Max | Units | Condition | |
| Supply voltage (standard) | 3.135 | 3.3 | 3.465 | VDC | | |
| Current consumption | | | 6 | mA | steady state @ +25°C | |
| RF Output (Clipped Sinewave) | | | | | | |
| Load R | 9 | 10 | 11 | k Ω | | |
| C | 9 | 10 | 11 | pF | | |
| Output Power | 0.7 | | | V_{pp} | @ 10k Ω 10pF | |
| RF Output (HCMOS) | | | | | | |
| Load | 13.5 | 15 | 16.5 | pF | | |
| Signal Level (Vol) | | | 0.3 | VDC | with $V_s=3.3V$ and 15pF Load | |
| Signal Level (Voh) | 3.0 | | | VDC | with $V_s=3.3V$ and 15pF Load | |
| Rise and Fall time | | | 5 | ns | | |
| Duty Cycle | 40 | 50 | 60 | % | @ (Voh-Vol)/2 | |
| Frequency Tuning (EFC) | | | | | | |
| Tuning Range | Fixed TCXO; No adjust | | | | | Option ⁵ |
| Tuning Range for Stability: 807, 287, 157 / Stratum 3 Version | ± 5.0 | ± 14.0 | ± 20.0 | ppm | | |
| Tuning Range | ± 8.0 | ± 14.0 | ± 20.0 | ppm | | |
| Linearity | 10% | | | | | |
| Tuning Slope | Positive | | | | | |
| Control Voltage Range | 0.3 | 1.65 | 3.0 | VDC | with $V_s=3.3V$ | |
| Freq. control input impedance | 10 | | | k Ω | | |
| Enable (instead of EFC) | True table Pin 1 High Open Low | | RF_out Pin 3 Data Data High Tristate | | | |
| Additional Parameters | | | | | | |
| Phase Noise ³ | | -65 -95 -120 -145 -152 | | dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz | 1 Hz 10 Hz 100 Hz 1 kHz 10 kHz | @ 10MHz |
| Weight | | | 8.0 g | | | |
| Processing & Packing | Handling & Processing Note | | | | | |
| Absolute Maximum Ratings | | | | | | |
| Supply voltage (Vs) | | | 6.0 | V | | |
| Control Voltage | 0 | | V_s | V | | |
| Operable Temperature Range | -40 | | +85 | °C | | |
| Storage Temperature Range | -55 | | +125 | °C | | |

Cross Reference List

| Vectron Part | Frequency (MHz) | Temp Range (°C) | Temp Stability (ppm) | Holdover Stability (ppm) | Overall Stability (ppm) | Supply (V) | |
|--------------|-----------------|-----------------|----------------------|--------------------------|-------------------------|------------|---------|
| C2260A1-0028 | 12.8 | -20 to +70 | ±0.28 | ±0.37 | ±4.6 | 3.3 | Semtech |
| C2260A1-0032 | 12.8 | -40 to +85 | ±0.28 | ±0.37 | ±4.6 | 3.3 | Semtech |
| C2260A1-0029 | 12.8 | -40 to +85 | | ±4.60 | ±20 | 3.3 | Semtech |
| C2260A1-0021 | 20 | -20 to +70 | ±0.28 | | ±4.6 | 3.3 | Zarlink |
| C2260A1-0009 | 20 | -20 to +80 | ±0.28 | | ±4.6 | 3.3 | Zarlink |
| C2260A1-0015 | 20 | -40 to +85 | | ±4.6 | ±20 | 3.3 | Zarlink |

Standard Shipping Method

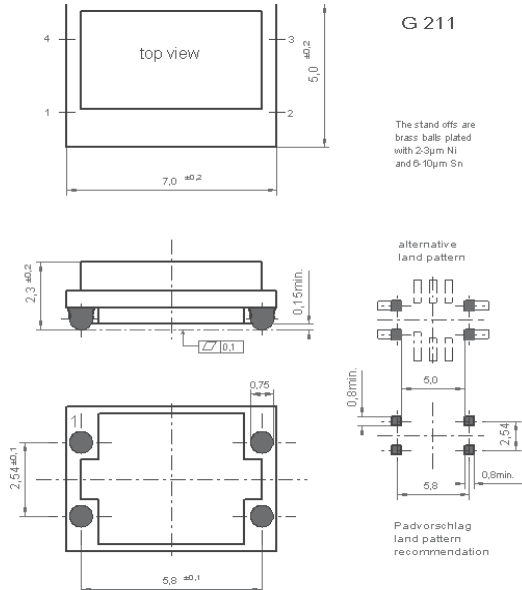
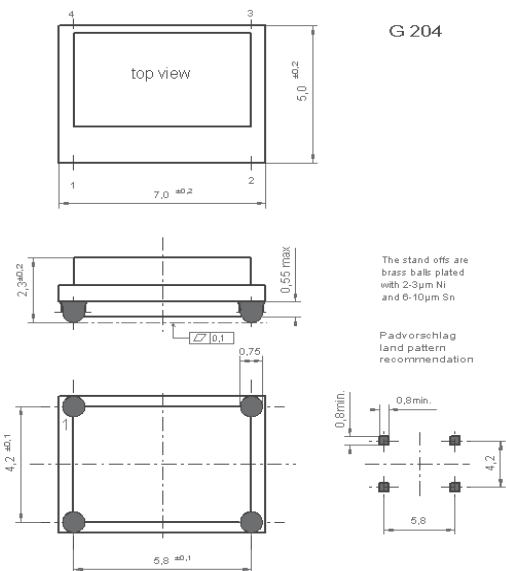


| Enclosure Type | Tape Width W (mm) | Quantity per meter | Quantity per reel | Dimension P |
|----------------|-------------------|--------------------|-------------------|-------------|
| G204/G211 | 12 | 150. | 750. | 8 |

Standard Shipping Method

| Package Codes: 700 | | |
|--------------------|------------|----------------|
| Type | Height "H" | Pin Length "L" |
| G204 | 2.5 | NA |

| Package Codes: 701 | |
|--------------------|------------|
| Type | Height "H" |
| G211 | 2.5 |



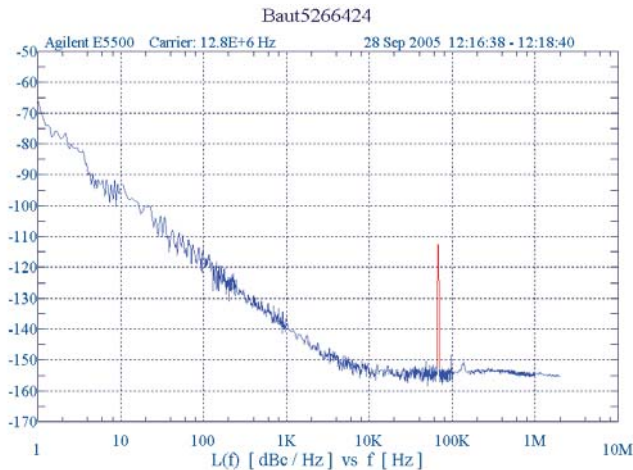
| Pin Connections | |
|-----------------|-------------------------------------|
| 1 | Voltage Control (Vc) / Enable / N.C |
| 2 | Ground (Case) |
| 3 | RF Output |
| 4 | Supply Voltage Input (Vs) |

| Marking | |
|-----------|--|
| TX-700 | |
| Frequency | |
| ● AYYWW | |

Standard Shipping Method

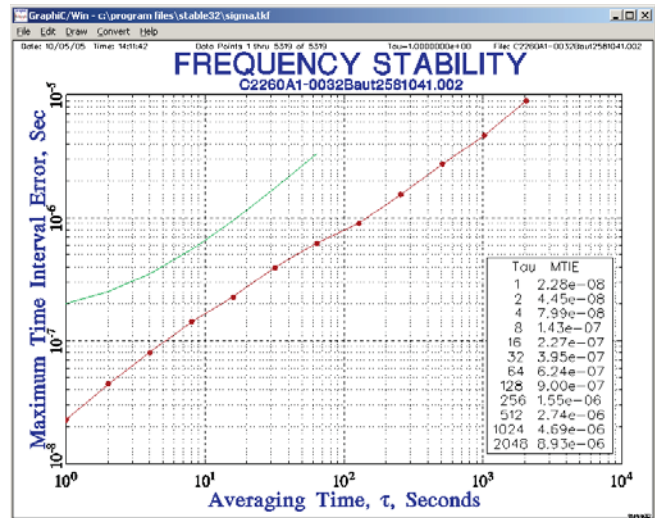
Phase Noise

C2260 @ 12.8 MHz



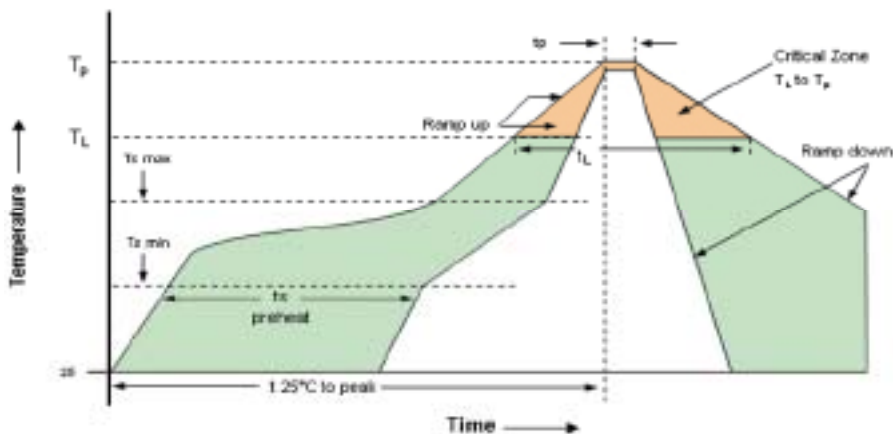
MTIE according-1244-CORE:

C2260 @ 12.8 MHz



Recommended Reflow Profile

Solderprofile:

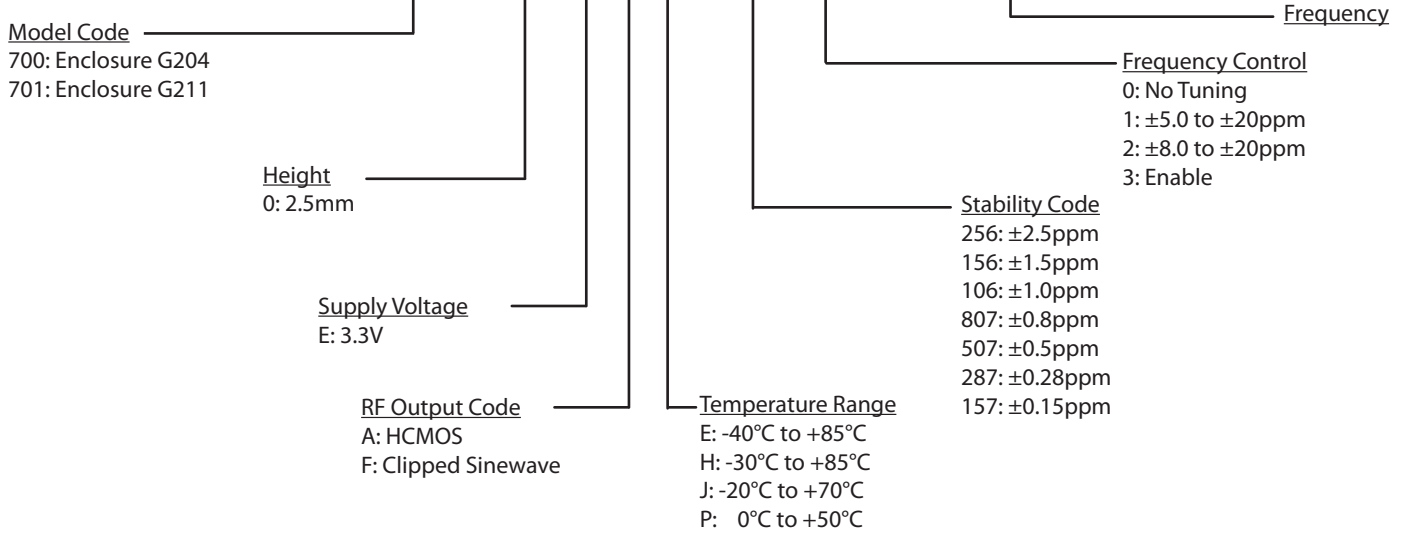


| Profile Feature | Pb-Free Assembly/ Sn-Pb Assembly | Profile Feature | Pb-Free Assembly/ Sn-Pb Assembly |
|---|-------------------------------------|--|-------------------------------------|
| Average ramp-up rate (T_L to T_p) | 3°C/second max. | Time 25°C to Peak Temperature | 8 minutes max. |
| Preheat -Temperature Min T_{Smin} -Temperature Min T_{Smax} -Time (min to max) t_S | 150°C 200°C 60-180 seconds | Time maintained above -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds |
| T_{Smax} to T_L -Ramp-up Rate | 3°C/second max | | |
| Time maintained above -Temperature (T_L) -Time (t_L) | 217°C 60-150 seconds | Time within 5°C of actual Peak Temperature (t_p) | 20-40 seconds |
| Peak Temperature (T_p) | max 260°C | Ramp-down Rate | 6°C/ second max |

Note: All temperatures refer to topside of the package, measured on the package body surface.

Ordering Information

TX-70X 0 - E A J - 256 0 - 10M0000000



Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless other stated all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Contact factory for availability.

For Additional Information, Please Contact

USA:

Vectron International
267 Lowell Road
Hudson, NH 03051
Tel: 1.888.328.7661
Fax: 1.888.329.8328

Europe:

Vectron International
Landstrasse, D-74924
Neckarbischofsheim, Germany
Tel: +49 (0) 7268.801.100
Fax: +49 (0) 7268.801.281

Asia:

Vectron International
1589 Century Avenue, the 19th Floor
Chamtime International Financial Center
Shanghai, China
Tel: 86.21.6081.2888
Fax: 86.21.6163.3598

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