

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 <sup>1</sup>						
Parameter	Min	Typical	Max	Units	Condition	
vs. operating temperature range (referenced to +25°C)	-1.5		+1.5	ppm	-40 to +85°C	Options <sup>5</sup>
	-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 $V_S \pm 5\%$ Load $\pm 10\%$ 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 <sup>1</sup> (Stratum 3 TCXO) <32MHz						
vs. operating temperature range (referenced to +25°C)	-0.80		+0.80	ppm	-20 to +70°C	Options <sup>5</sup>
	-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 $V_S \pm 5\%$ static Load $\pm 5\%$ static Note:*Stratum 3 per GR-1244-CORE: < $\pm 4.6$ ppm for all causes and 20 years aging, holdover: < $\pm 0.37$ 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		

# Performance Specifications

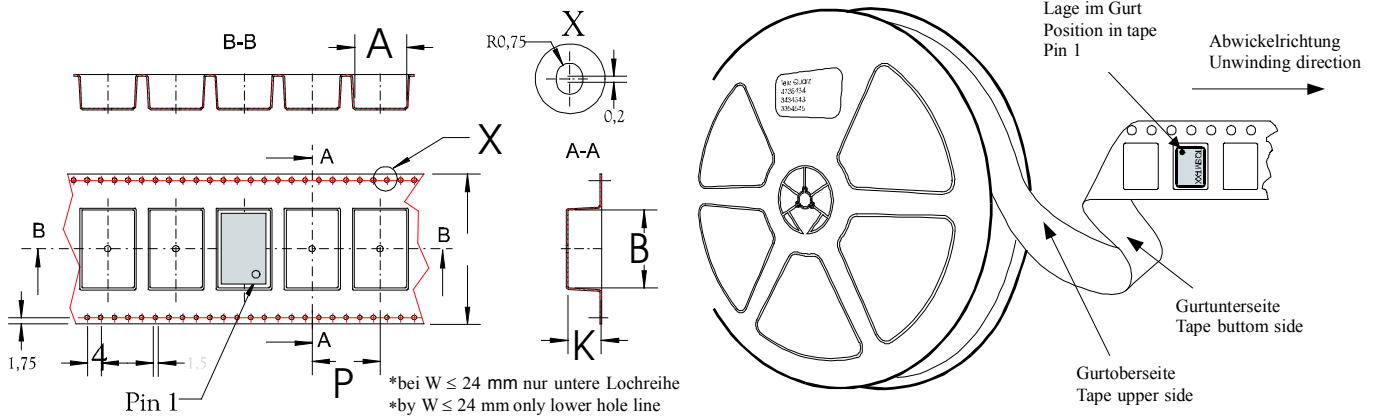
Frequency Stabilities <sup>1</sup>						
Parameter	Min	Typical	Max	Units	Condition	
vs. operating temperature range (referenced to +25°C) For 10, 12.8, 16.384, 20.26 MHz	-0.15		+0.15	ppm	0 to +50°C	
Initial tolerance	-1.0		+1.0	ppm	at time of shipment, nominal EFC V <sub>s</sub> ±5% Load ±10% Note:*Stratum 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		

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	kΩ		
C	9	10	11	pF		
Output Power	0.7			V <sub>pp</sub>	@ 10kΩ    10pF	
RF Output (HCMOS)						
Load	13.5	15	16.5	pF		
Signal Level (Vol)			0.3	VDC	with Vs=3.3V and 15pF Load	
Signal Level (Voh)	3.0			VDC	with Vs=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 <sup>5</sup>	
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 Vs=3.3V	
Freq. control input impedance	10			kΩ		
Enable (instead of EFC)	True table Pin 1 High Open Low		RF_out Pin 3 Data Data High Tristate			
Additional Parameters						
Phase Noise <sup>3</sup>		-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					
Reflow Profile	IPC / JEDEC J-STD-020 (latest version)					
Absolute Maximum Ratings						
Supply voltage (Vs)			6.0	V		
Control Voltage	0		Vs	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

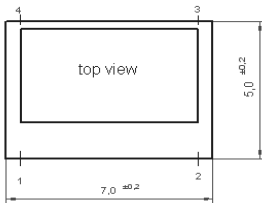


Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
G204/G211	12	150.	750.	8

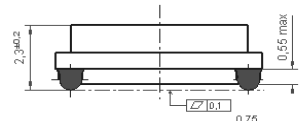
## Outline Drawing / Enclosure

### Package Codes: 700

Type	Height "H"	Pin Length "L"
G204	2.5	NA

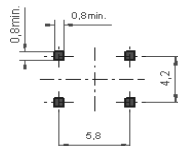
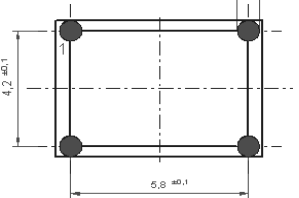


G 204



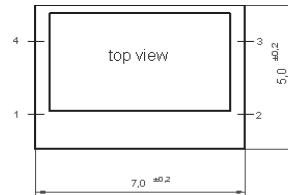
The stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn

Padvorschlag land pattern recommendation



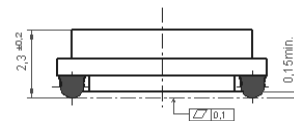
### Package Codes: 701

Type	Height "H"
G211	2.5

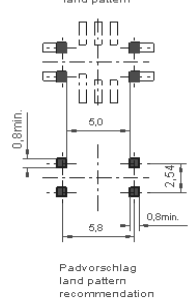


G 211

The stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn



alternative land pattern



Padvorschlag land pattern recommendation

### Pin Connections

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

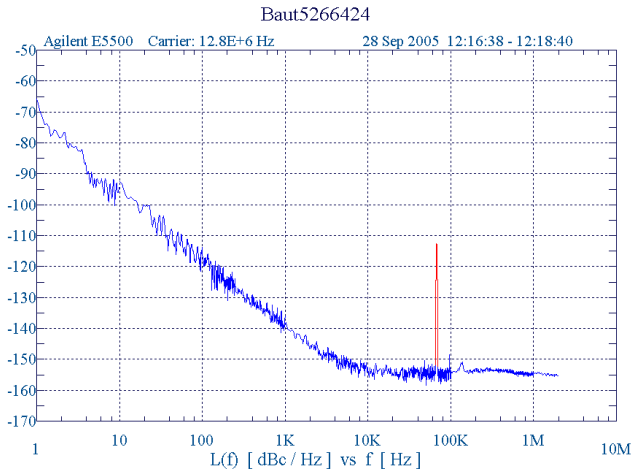
### Marking

TX-700
Frequency
● AYYWW

# Typical Performance

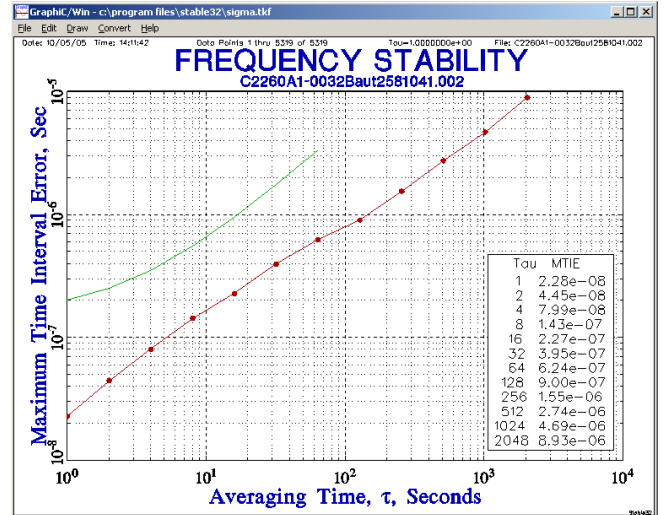
## Phase Noise

C2260 @ 12.8 MHz

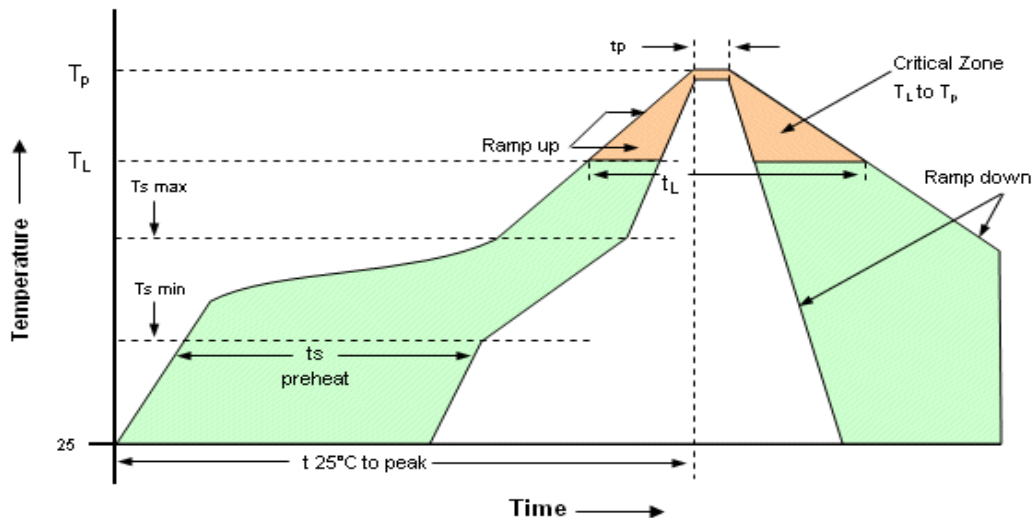


## MTIE according-1244-CORE:

C2260 @ 12.8 MHz



# Recommended Reflow Profile

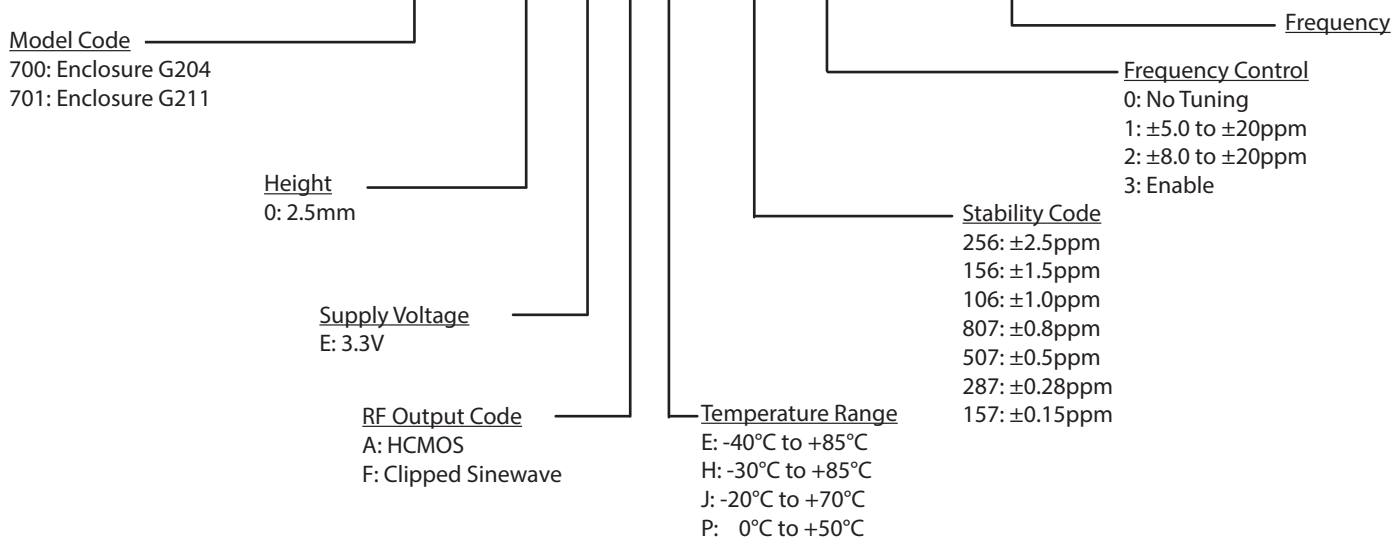


Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly	Profile Feature	Pb-Free Assembly/ Sn-Pb Assembly
Average ramp-up rate ( $T_L$ to $T_p$ )	3°C/second max.	Time 25°C to Peak Temperature	8 minutes max.
Preheat -Temperature Min $T_{s \text{ min}}$ -Temperature Max $T_{s \text{ max}}$ -Time (min to max) $t_s$	150°C 200°C 60-180 seconds	Time maintained above -Temperature ( $T_L$ ) -Time ( $t_L$ )	217°C 60-150 seconds
$T_{s \text{ max}}$ 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. SMD oscillators must be on the top side of the PCB during the reflow process.

## 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

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<http://moschip.ru/get-element>

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