

Typical Applications

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

Features

EFC Standard
 Low Profile
 Small Size
 100 % RoHS compliant



Frequency range

6.4 MHz – 52 MHz

Standard frequencies

10; 12.8; 16.384; 19.44; 20; 20.48MHz

Frequency stabilities¹

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-1.5		+1.5	ppm	-40.....+85°C	F156
	-1.0		+1.0	ppm	-40.....+85°C	F106
	-2.5		+2.5	ppm	-20 ... +70°C	D256
	-1.0		+1.0	ppm	-20 ... +70°C	D106
	-1.0		+1.0	ppm	0 ... +50°C	B106
	-0.5		+0.5	ppm	0 ... +50°C	B507
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 2.5		+2.5	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.5		+0.5	ppm	V _s ± 5%	
vs. load change	- 0.2		+0.2	ppm	Load ± 10%	
vs aging /1. Year	- 1.0		+1.0	ppm		

Frequency stabilities¹ [Stratum 3 TCXO] < 32MHz

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-0.8		+0.8	ppm	-20 ... +70°C	D807
	-0.28		+0.28	ppm	0 ... +50°C	B287*
	-0.28		+0.28	ppm	-20 ... +70°C	D287*
	-0.80		+0.80	ppm	-40 ... +85°C	F807
	-0.28		+0.28	ppm	-30 ... +85°C	G287*
	-0.28		+0.28	ppm	-40 ... +85°C	F287*
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.2		+0.2	ppm	V _s ± 5%	
vs. load change	- 0.1		+0.1	ppm	Load ± 10%	
vs aging /15 Years	- 2.5		+2.5	ppm		
overall tolerance	-4.6		-4.6	ppm		
Note * Stratum 3 per GR-1244-CORE: <±4.6 ppm for all causes and 20 years aging, Holdover: <±0.37 ppm over 24 hours (Code: D287 & B287 & G287 & F287)						

Frequency stabilities¹ TCXO for OCXO replacement

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C) For 10; 12.8; 16.384; 20; 26 MHz	-0,15		+0,15	ppm	0 ... +50°C	B157
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	- 0.2		+0.2	ppm	V _S ± 5%	
vs. load change	- 0.1		+0.1	ppm	Load ± 10%	
vs aging /15 Years	- 2.5		+2.5	ppm		
overall tolerance	-4.6		-4.6	ppm		
Note * Stratum 3 per GR-1244-CORE: <±4.6 ppm for all causes and 20 years aging, Holdover: <±0.37 ppm over 24 hours (Code: D287 & B287 & G287 & F287)						

Supply voltage (Vs)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Supply voltage [Standard]	3.135	3.3	3.465	VDC		D
Current consumption			6	mA	steady state @ +25°C	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal [Standard]	clipped Sinewave				> 12.288MHz	M
Load R	9	10	11	kΩ	@ 10kΩ 10pF	
C	9	10	11	pF		
Output power	0.7			V _{pp}		

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal [Standard]	HCMOS					A
Load	13.5	15	16.5	pF	with Vs=3.3V and 15pF load with Vs=3.3V and 15pF load	@ (Voh-Vol)/2
Signal Level (Vol)			0.3	VDC		
Signal Level (Voh)	3.0			VDC		
Rise and Fall time			5	ns		
Duty cycle	40	50	60	%		

Frequency Tuning (EFC) or Enable

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Tuning Range	Fixed TCXO; No adjust					0
Tuning Range for D807;B287;D287;F807;G287;F287 Stratum 3 Version	± 5.0	±14.0	± 20.0	ppm		1
Tuning Range	± 8.0	±14.0	± 20.0			2
Linearity			10	%		
Tuning Slope	Positive					
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3VDC	
Freq. control input impedance	10			kΩ		
Enable (instead of EFC)	True table		RF_out			E
	Pin 2	High	Pin 3	Data		
	Open		Data	Data		
	Low		High Tristate			

Additional parameters

Parameter	Min	Typ	Max.	Units	Condition	
Phase Noise ³		-90		dBc/Hz	10 Hz	@19.44MHz
		-120		dBc/Hz	100 Hz	
		-135		dBc/Hz	1 kHz	
		-140		dBc/Hz	10 kHz	
		-145		dBc/Hz	100 kHz	
Weight			2	g		
Processing & Packing	Handling & processing note					

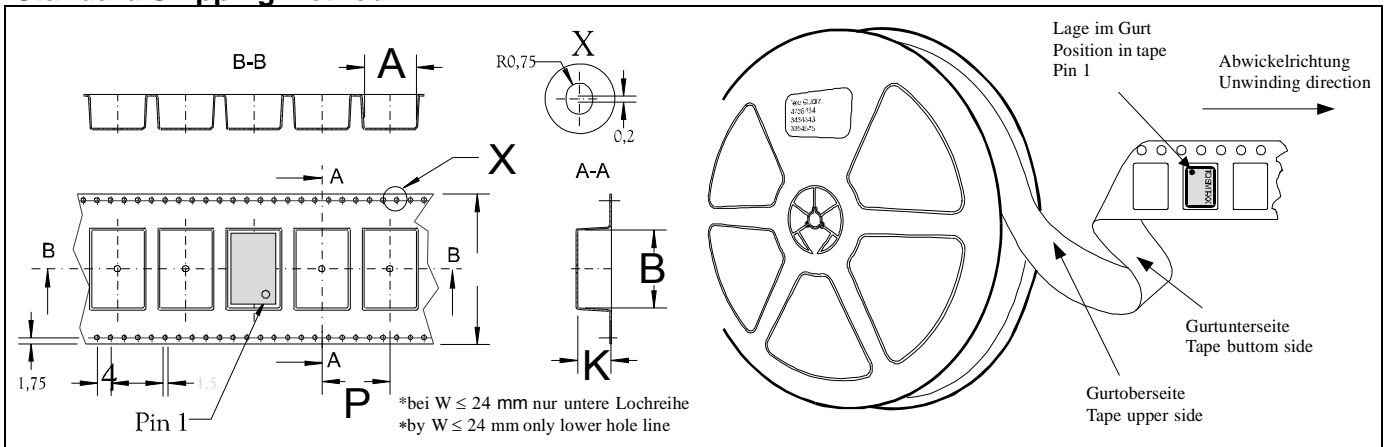
Absolute Maximum Ratings

Parameter	Min	Typ	Max.	Units	Condition
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]	H/over Stab. [ppm]	overall Stab. [ppm]	Supply [V]		
C2260A1-0028	12,8	-20...70	±0,28	±0,37	±4,6	3,3		Semtech
C2260A1-0032	12,8	-40..85	±0,28	±0,37	±4,6	3,3		Semtech
C2260A1-0029	12,8	-40..85			±4,6	±20	3,3	Semtech
C2260A1-0021	20	-20...70	±0,28		±4,6	3,3		Zarlink
C2260A1-0009	20	-20..80	±0,28		±4,6	3,3		Zarlink
C2260A1-0015	20	-40..85			±4,6	±20	3,3	Zarlink

Standard Shipping Method



Lage im Gurt
Position in tape
Pin 1

Abwickelrichtung
Unwinding direction

Gurtunterseite
Tape bottom side

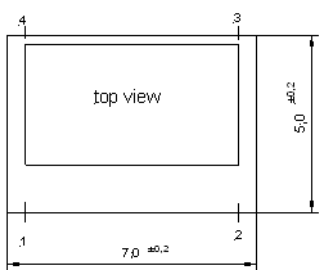
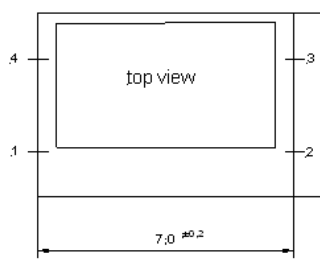
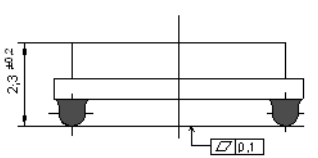

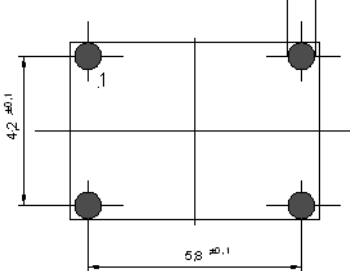
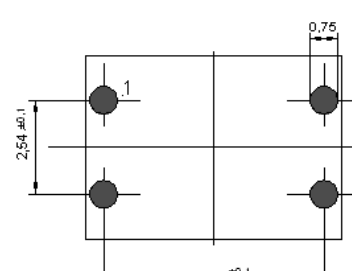
Gurtoberseite
Tape upper side

*bei W ≤ 24 mm nur untere Lochreihe
*by W ≤ 24 mm only lower hole line

Production tolerance complying DIN IEC 286-3

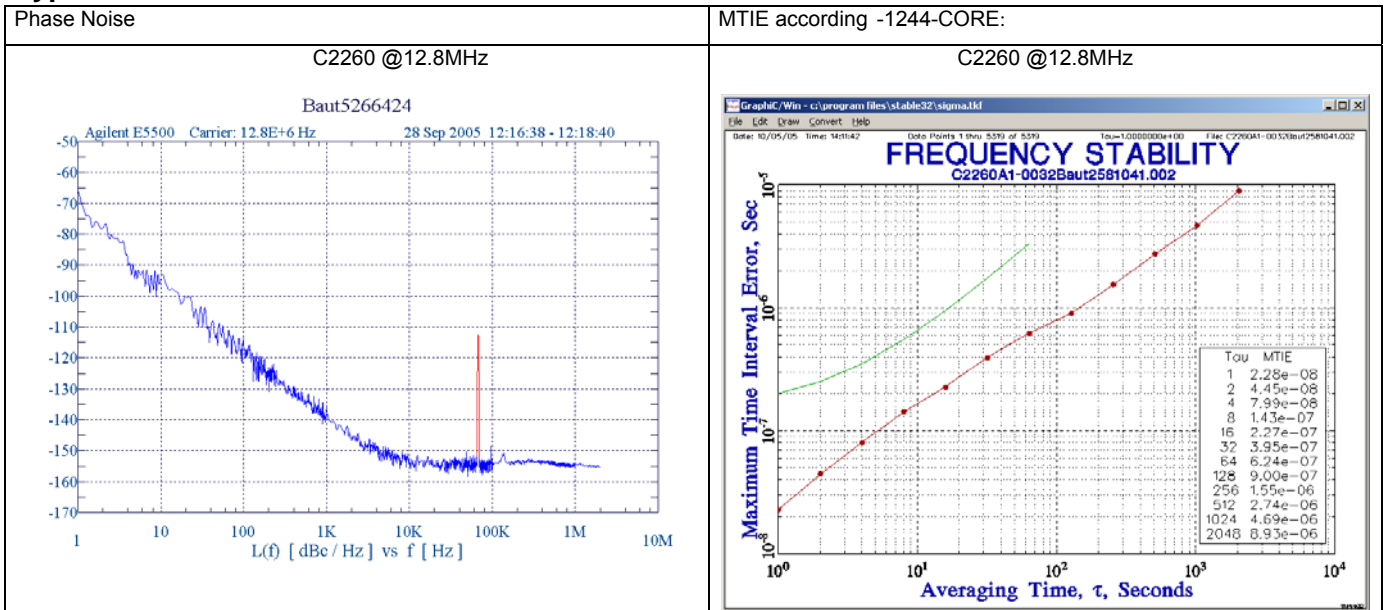
Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G204 /G211	12	150.	750.	8

Enclosures

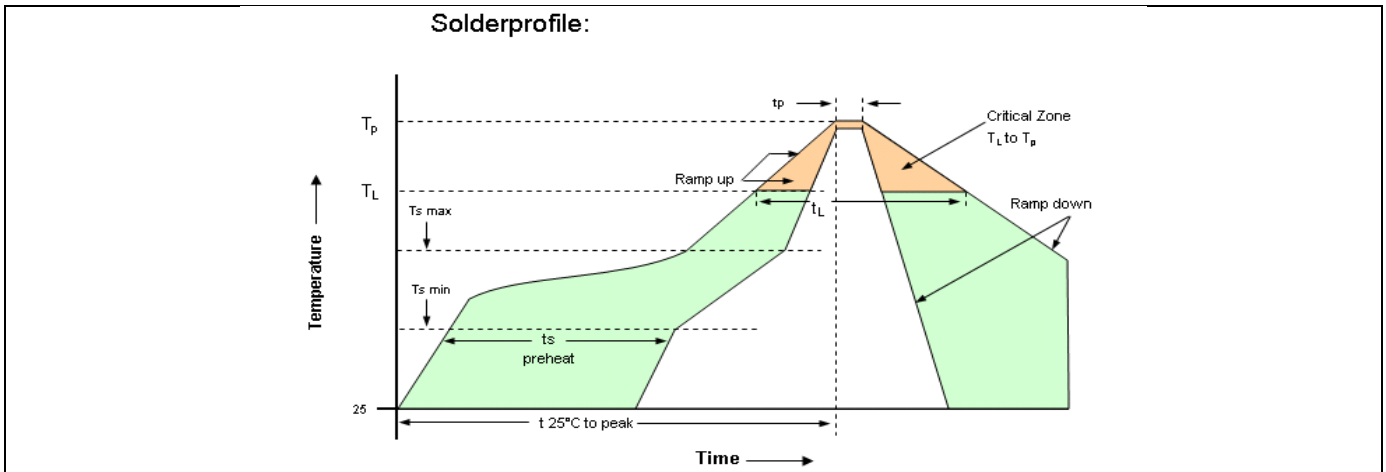
Code A			Code B		
Package Codes:			Package Codes:		
Type G204	Height "H" 2.5	Pin Length "L" NA	Type G211	Height "H" 2.5	
 <p style="text-align: center;">G 204</p>			 <p style="text-align: center;">G 211</p>		
 <p>The stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn</p> <p>Padvorschlag land pattern recommendation</p>			 <p>The stand offs are brass balls plated with 2-3µm Ni and 6-10µm Sn</p> <p>Padvorschlag land pattern recommendation</p>		
 <p style="text-align: center;">Dimensions: mm</p>			 <p style="text-align: center;">Dimensions: mm</p>		

Pin Connections
1 Voltage Control (Vc) / Enable / N.C
2 Ground (Case)
3 RF output
4 Supply Voltage Input (Vs)
Marking
C2260-xxxx frequency * C AYYWW

Typical measurement data



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 $T_{S_{min}}$ -Temperature Min $T_{S_{max}}$ -Time (min to max) (ts)	150°C 200°C 60-180 seconds	Time maintained above - Temperature (T_L) - Time (t_L)	217°C 60-150 seconds
$T_{S_{max}}$ 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 (tp)	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.

How to order this product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency Control/ Enable	Frequency
C2260	F287	D	A	A	1	6.4MHz

Vs.operat. Temp. Range

F156	±1.5ppm	-40 ... +85°C
F106	±1.0ppm	-40 ... +85°C
D256	±2.5ppm	-20 ... +70°C
D106	±1.0ppm	-20 ... +70°C
B106	±1.0ppm	0 ... +50°C
B507	±0.5ppm	0 ... +50°C
D807	±0.8ppm	-20 ... +70°C
B287	±0.28ppm	0 ... +50°C
D287	±0.28ppm	-20 ... +70°C
F807	±0.8ppm	-40 ... +85°C
G287	±0.28ppm	-30 ... +85°C
F287	±0.28ppm	-40 ... +85°C
B157	±0.15ppm	0 ... +50°C

Supply:

D: 3.3V

Signal:

M: clipped Sinewave
A: HCMOS

Enclosure:

A: G204
B: G211

Tuning Range:

0: Fixed TCXO; No adjust
1: ±5.0 ppm ... ±20.0 ppm
2: ±8.0 ppm ... ±20.0 ppm
E: Enable

Notes:

- 1 Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
- 2 Unless otherwise 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.