


TX-401

Features

- High Frequency
- Low Phase Noise
- Low power consumption
- Output: True Sinewave
- Tight Tolerances
- Frequency range ¹ of 250 - 700 MHz
- Standard Frequencies : 256; 400; 500; 502 MHz

Applications

- Test & Measurement
- Communication Equipment
- Industrial
- Military

Performance Specifications

Frequency Stabilities ¹						
Parameter	Min	Typical	Max	Units	Condition	
vs. operating temperature range (referenced to +25°C)	-2		+2	ppm	-40 to +85°C	Options ³
	-1		+1	ppm	-40 to +85°C	
	-1		+1	ppm	-20 to +70°C	
Initial tolerance	-2		+2	ppm	at time of shipment, nominal EFC V _s ±5% static Load ±10% static after 30 days of operation	
vs. supply voltage change	-0.8		+0.8	ppm		
vs. load change	-0.2		+0.2	ppm		
vs. aging 10 years	-4		+4	ppm		

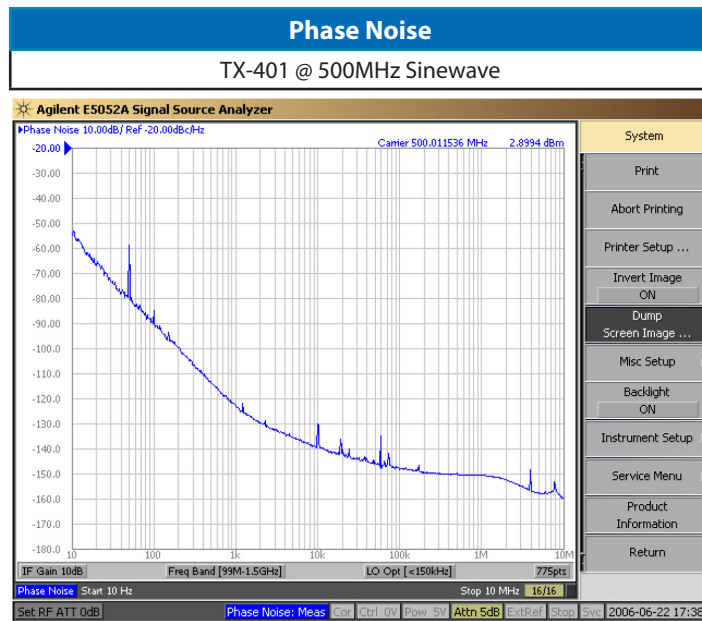
Performance Specifications

Supply Voltage (Vs)					
Parameter	Min	Typical	Max	Units	Condition
Supply voltage (standard)	3.135	3.3	3.465	VDC	
Supply voltage (Option)	4.75	5	5.25	VDC	
Current consumption			75 50	mA mA	@ 3.3V @ 5V
RF Output					
Signal [Option]	True Sinewave				
Load	45	50	55	Ohm	
Output power	0	3	6	dBm	
Harmonics			-25	dBc	
Subharmonics			-40	dBc	
Frequency Tuning (EFC)					
Tuning Range	Fixed TCXO; No adjust				Opti- on ^s
Tuning Range	±5		±18	ppm	
Linearity	<10%				
Tuning Slope	Positive				
Control Input Impedance	10			kOhm	
Control Voltage Range	0.3 0.5	1.65 2.5	3.0 4.5	VDC	Vs=3.3V Vs=5V
Additional Parameters					
Phase Noise ²		-54 -90 -122 -140 -147 -150 -160		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz 1 MHz 10 MHz
Jitter			0.1	ps RMS	@ 12 kHz to 20 MHz
Weight			2.0	g	
Processing & Packing	Handling & Processing Note				

Absolute Maximum Ratings

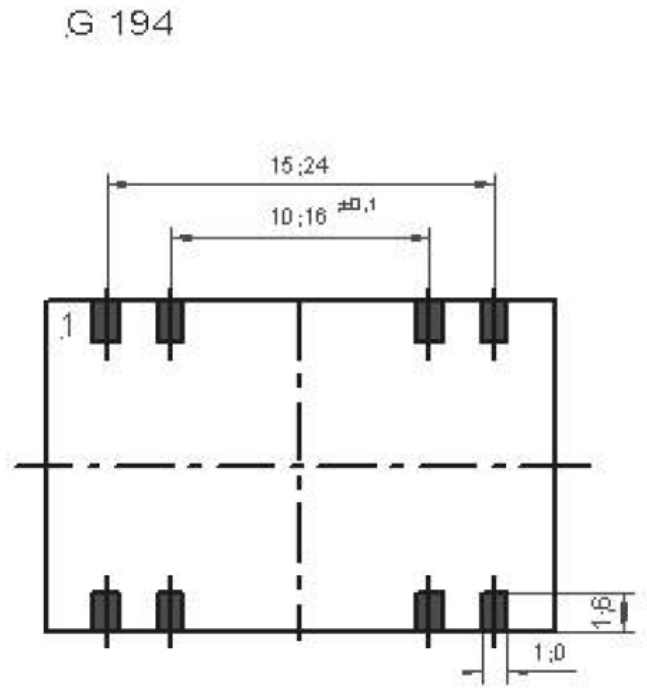
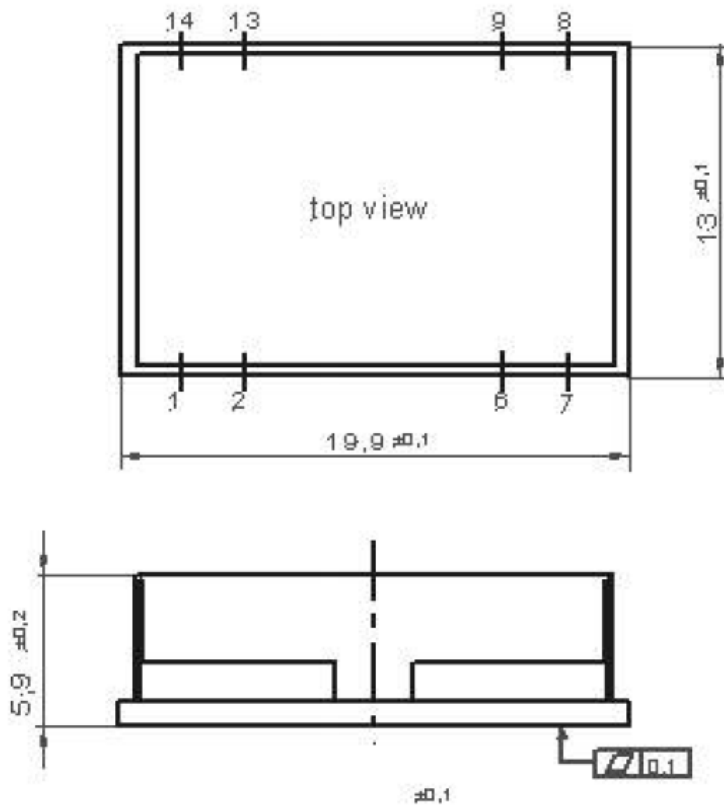
supply voltage (Vs)			6.0	V	
Operable Temperature Range	-40		+85	°C	
Storage Temperature Range	-40		+105	°C	

Typical Performance



Outline Drawing / Enclosure

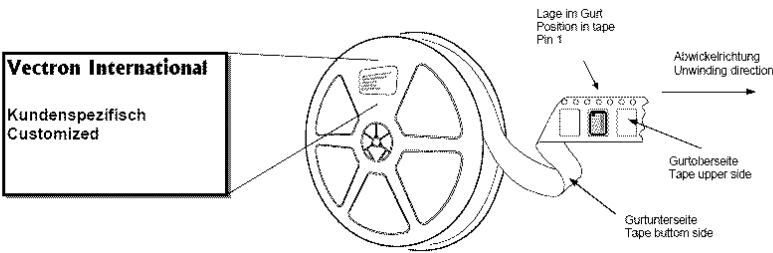
TX-401	
Type	Height "H"
G194	5.9



all units in mm

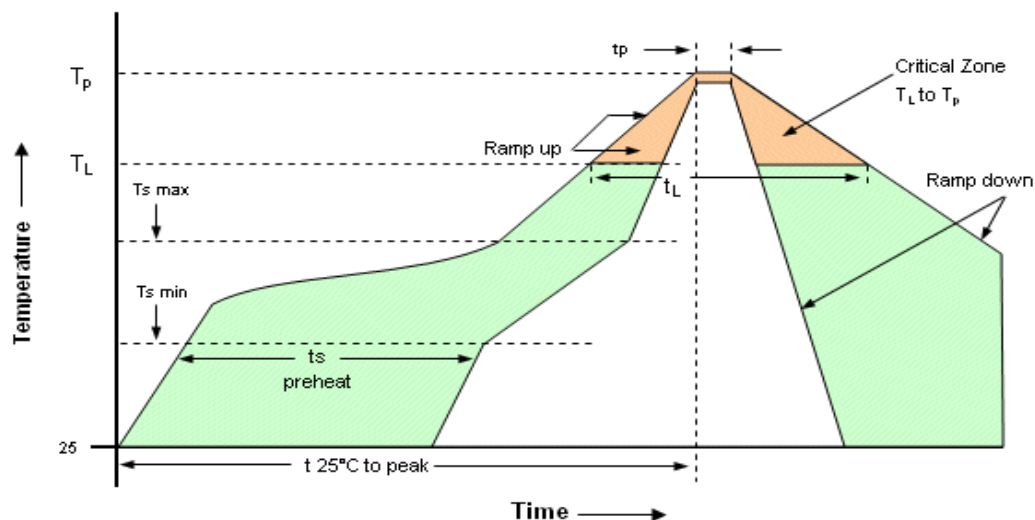
Pin Connections	
1	Control Voltage Input (Vc) / N.C.
2	N.C.
6	GND (Case)
7	GND (Case)
8	RF-Output
9	GND (Case)
13	N.C.
14	Supply Voltage Input (Vs)

Standard Shipping Method (TX-401)



Enclosure Type	Tape Width W (mm)	Quantity per meter	Quantity per reel	Dimension P
G194	32		500	20

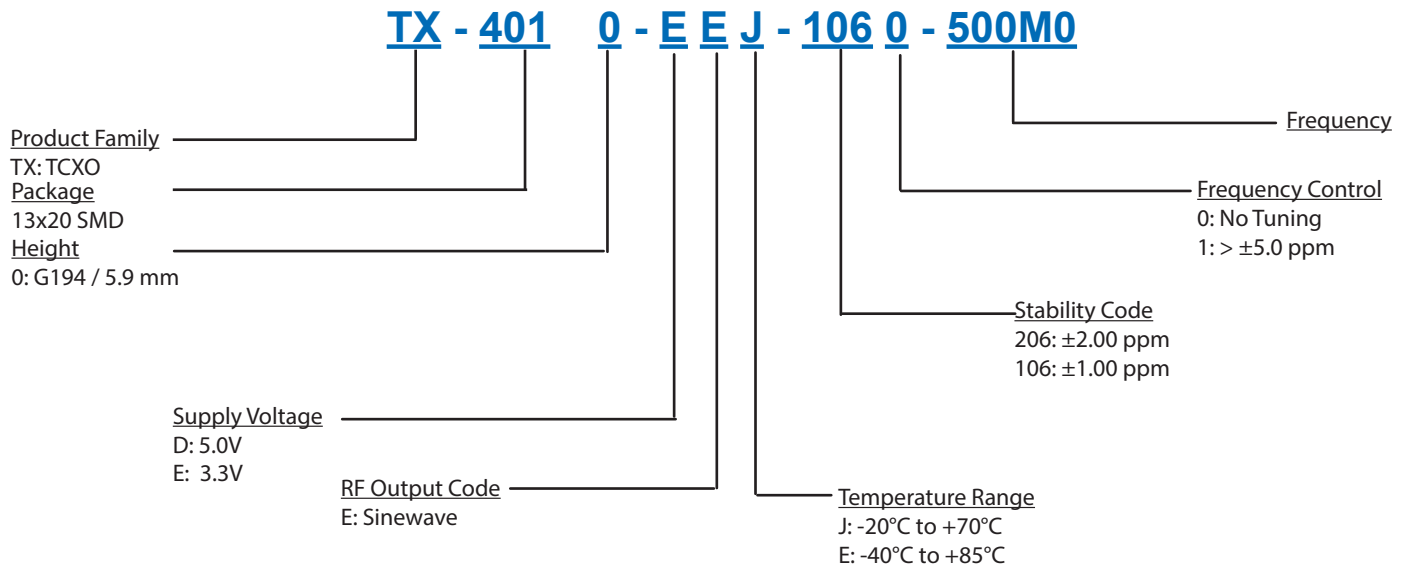
Recommended Reflow Profile



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_{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
TSmax to TL -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

SMD oscillators must be on the top side of the PCB during the reflow process.

Ordering Information



Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Phase noise degrades with increasing output frequency.
3. Contact factory for availability.

Unless other stated all values are valid at typical conditions for supply voltage, frequency control voltage, load, temperature (25°C).

Subject to technical modification.

For Additional Information, Please Contact

USA:

Microsemi
267 Lowell Road, Suite 102
Hudson, NH 03051
Tel: 1.888.328.7661
Fax: 1.888.329.8328

Europe:

Vectron International GmbH
Landstrasse, D-74924
Neckarbischofsheim, Germany
Tel: +49 (0) 7268.801.100
Fax: +49 (0) 7268.801.282

Asia:

Microsemi
68 Yin Cheng Road(C), 22nd Floor
One LuJiaZui
Pudong, Shanghai 200120, China
Tel: +86 21 6194 6886
Fax: +86 21 6194 6699

Disclaimer

Microsemi reserves the right to make changes to the product(s) and or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Rev: 01/2018