

Helping Customers Innovate, Improve & Grow


TX-402

Features

- High Precision TCXO
- OCXO Replacement
- OCXO Temperature Performance
- Low power consumption
- Low cost
- Tight Tolerances

Applications

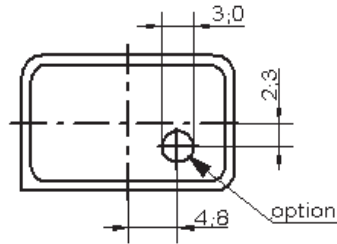
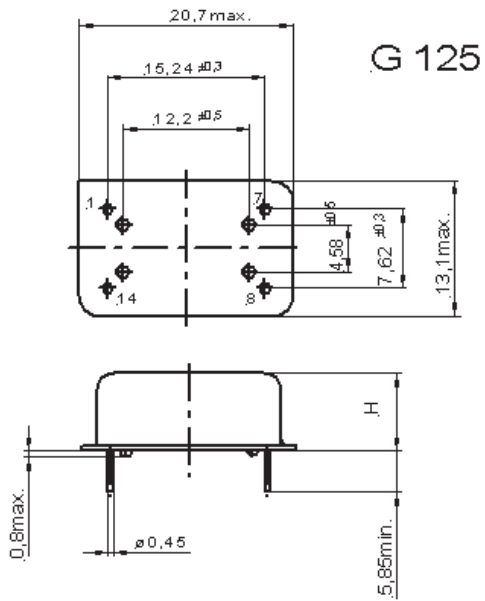
- Base Station
- Test Equipment
- Femto Base Station
- Communication Equipment
- Digital Switching

Performance Specifications

Frequency Stabilities ¹ (Standard - 6.4 to 26 MHz)						
Parameter	Min	Typical	Max	Units	Condition	
vs. operating temperature range (referenced to +25°C)	-280		+280	ppb	-40 to +85°C	Options ³
	-140		+140	ppb	-40 to +85°C	
	-100		+100	ppb	-40 to + 85°C for some frequencies ¹	
	-100		-100	ppb	-20 to +70°C	
	-70		+70	ppb	-20 to +70°C	
	-50		+50	ppb	-20 to + 70°C for some frequencies ¹	
Initial tolerance	-0.5		+0.5	ppm	at time of shipment, nominal EFC	
vs. supply voltage change	-10		+10	ppb	V _s ±5% static	
vs. load change	-10		+10	ppb	Load ±5% static	
vs. aging / day	-10		+10	ppb	after 30 days of operation	
vs. aging / year	-1.0		+1.0	ppm	after 30 days of operation	
vs. aging / 10 years	-3.0		+3.0	ppm	after 30 days of operation	

Performance Specifications

Supply Voltage (Vs)							
Parameter	Min	Typical	Max	Units	Condition		
Supply voltage (standard) Current consumption	3.135	3.3	3.465 12	VDC mA	@HCMOS		
Supply voltage Current consumption	4.75	5.0	5.25 12	VDC mA	@HCMOS		
RF Output							
Signal [standard]	HCMOS						
Load	13.5	15	16.5	pF			
Signal Level (Vol)			0.3	VDC	with Vs=3.3V and 15pF Load		
Signal Level (Voh)	2.6				with Vs=3.3V and 15pF Load		
Signal Level (Vol)			0.5	VDC	with Vs=5.0V and 15pF Load		
Signal Level (Voh)	4.5				with Vs=5.0V and 15pF Load		
Duty Cycle	40		60	%	@ (Voh-Vol)/2		
Rise and Fall time			5	ns	@15 pF 10 to 90 %		
Frequency Tuning (EFC) 6.4 to 26 MHz							
Tuning Range	Fixed TCXO; No adjust				Opti- on ³		
Tuning Range	±5.0			ppm			
Linearity	<10%						
Tuning Slope	Positive						
Control Input Impedance	80	100	120	kOhm			
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3V		
Control Voltage Range	0.5	2.5	4.5	VDC	with Vs=5 V		
Additional Parameters							
Phase Noise ²		-92 -117 -139 -150 -152	-80 -110 -130 -145 -150	dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz	@ 10 MHz HCMOS 5 V	
	Jitter		0.2		ps RMS		@ 12 kHz to 20 MHz
	Weight			8.0	g		
	Processing & Packing	Handling & Processing Note					
	Absolute Maximum Ratings						
supply voltage (Vs)			6.0	V	with Vs=3.3 & 5.0 VDC		
Output Load			50	pF			
Operable Temperature Range	-40		+85	°C			
Storage Temperature Range	-40		+90	°C			



Dimensions in mm

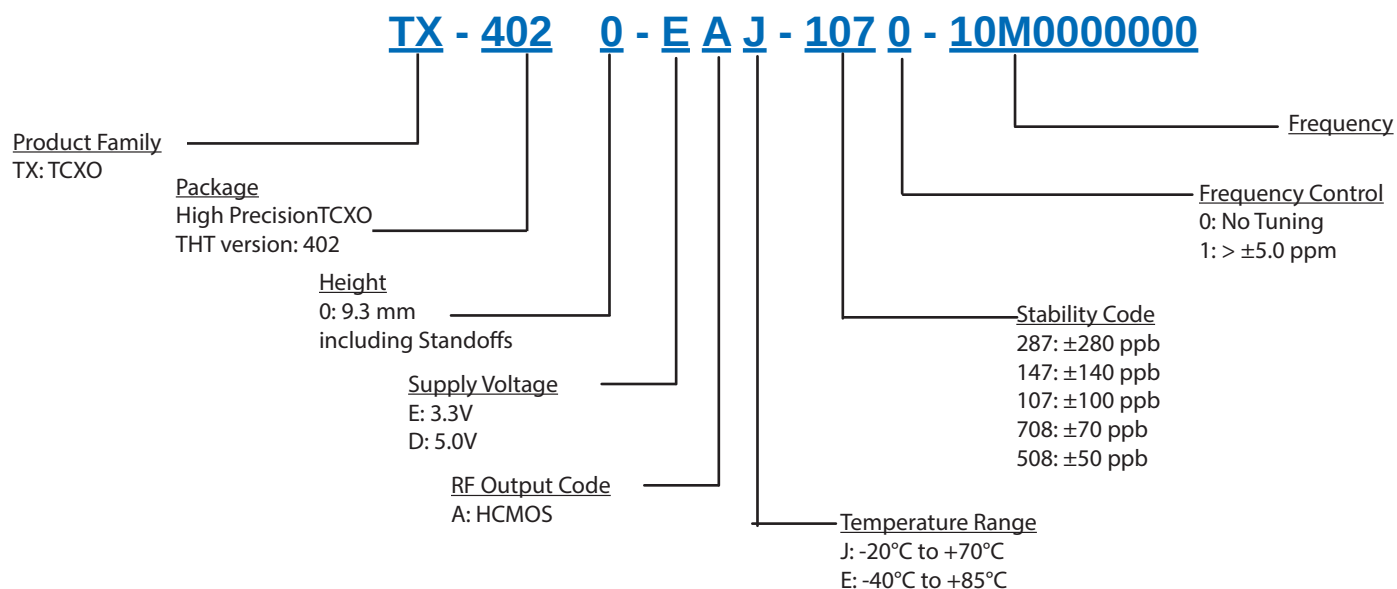
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Height "H"	Pin Length "L"
8.5 max	NA

Pin Connections

1	Control Voltage Input (Vc)
7	Ground (Case)
8	RF-Output
14	Supply Voltage Input (Vs)

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.

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