

Typical Applications

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

Features

Wide Frequency range
 EFC Standard
 Standard Surface Mount Package
 Meets Stratum 3



Previous Corning Model Numbers

STO200

Frequency range

30 MHz – 900 MHz

Standard frequencies

67.584; 69.12; 79.488; 155.52, 242.733, 278.08 MHz

Frequency stabilities¹ [Standard TCXO]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-2.0		+2.0	ppm	-20 ... +70°C	D206
	-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
	-0.5		+0.5	ppm	0 ... +50°C	B507
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC V _S ± 5% Load ± 10%	
vs. supply voltage change	- 0.2		+0.2	ppm		
vs. load change	- 0.2		+0.2	ppm		
vs aging /1. Year	- 1.0		+1.0	ppm		

Frequency stabilities¹ [Stratum 3 TCXO]

Parameter	Min	Typ	Max.	Units	Operating temp range	Ordering Code ⁵
vs. operating temperature range (Referenced to +25°C)	-0.8		+0.8	ppm	-40 ... +85°C	F807
	-0.28		+0.28	ppm	-30 ... +85°C	G287
	-0.8		+0.8	ppm	-20 ... +70°C	D807
	-0.28		+0.28	ppm	-20 ... +70°C	D287
	-0.28		+0.28	ppm	0 ... +50°C	B287
Parameter	Min	Typ	Max.	Units	Condition	
Initial tolerance	- 1.0		+1.0	ppm	at time of shipment, nominal EFC V _S ± 5% Load ± 10%	
vs. supply voltage change	- 0.2		+0.2	ppm		
vs. load change	- 0.1		+0.1	ppm		
vs aging /15 Years	- 2.5		+2.5	ppm		
overall tolerance	-4.6		-4.6	ppm	(*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)	

Supply voltage (Vs)

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Supply voltage [Standard]	3.135	3.3	3.465	VDC		SV033
Current consumption (Freq < 100MHz)			50	mA	steady state @ +25°C & 3.3VDC & CMOS	
			90	mA	steady state @ +25°C & 3.3VDC & PECL	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal [Standard]	HCMOS					RFH
Load	13.5	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	%		
Subharmonics	-45			dBc		
Signal [Standard]	PECL					RFP
Load		50		Ω	to Vs-2V 20 to 80%	
Rise and Fall time			1	ns		
Duty cycle	45	50	55	%		
Subharmonics	-45			dBc		

Frequency Tuning (EFC)

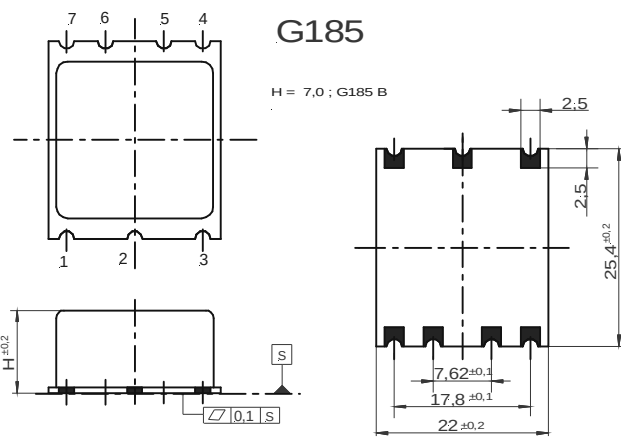
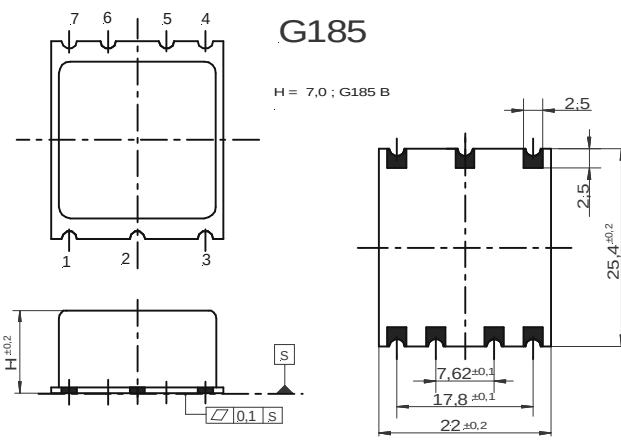
Parameter	Min	Typ	Max.	Units	Condition
Tuning Range	± 8.0	±14.0	± 20.0	ppm	Standard Version
Tuning Range	± 5.0	±12.0	± 20.0	ppm	Stratum 3 Version
Linearity			10	%	
Tuning Slope	Positive				
Control Voltage Range	0.3	1.65	3.0	VDC	with Vs=3.3VDC
Freq. control input impedance	10			kΩ	

Additional parameters

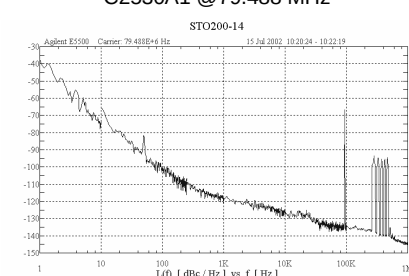
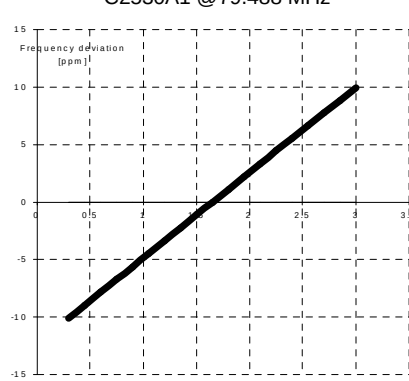
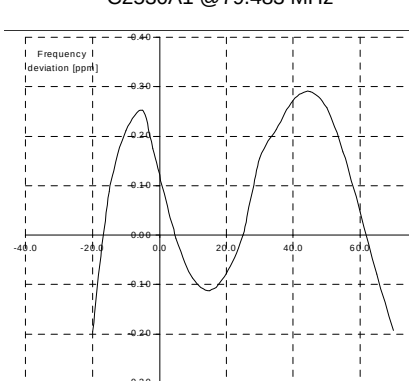
Parameter	Min	Typ	Max.	Units	Condition
Phase Noise ³		-70		dBc/Hz	10 Hz Standard TCXO @ 79.483 MHz
		-100		dBc/Hz	
		-120		dBc/Hz	
		-128		dBc/Hz	
		-135		dBc/Hz	
Phase Noise ³		-60		dBc/Hz	10 Hz Stratum3 TCXO @ 155.52MHz
		-96		dBc/Hz	
		-115		dBc/Hz	
		-122		dBc/Hz	
		-129		dBc/Hz	
Weight			9	g	
Processing & Packing	Handling & processing note				

Absolute Maximum Ratings

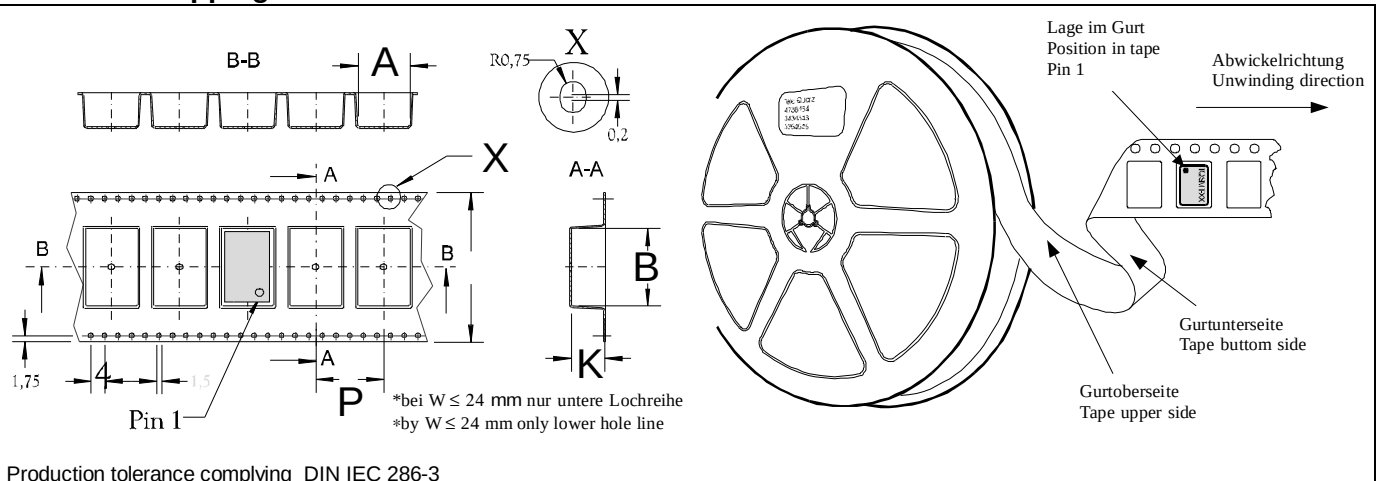
Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			6.0	V	
Control Voltage	0		Vs	V	
Maximum output load @ CMOS			40	pF	
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+125	°C	

Type G185B				Type G185B (PECL)			
Package Codes :				Package Codes :			
Code A1	Height "H" 7.0	Pin Length "L" NA		Code B1	Height "H" 7.0	Pin Length "L" NA	
 <p>G185 H = 7.0 ; G185 B</p> <p>Dimensions : mm</p>				 <p>G185 H = 7.0 ; G185 B</p> <p>Dimensions : mm</p>			
Pin Connections				Pin Connections			
1 Voltage Control 2 I.C 3 Vs (supply voltage) 4 RF-Output 5 I.C. 6 I.C. 7 GND				1 Vs (supply voltage) 2 I.C 3 GND 4 I.C. 5 RF-Output 6 RF-Output compl. 7 GND			

Typical measurement data

Phase Noise and Jitter C2530A1 @79.488 MHz	Tuning Slope C2530A1 @79.488 MHz	Frequency stability vs temp C2530A1 @79.483 MHz									
 <p>STO200-14 Agilent E5500 Carrier: 79.488 MHz 15 Jul 2002 10:20:24 - 10:22:19</p> <table border="1"> <thead> <tr> <th>Frequency range [Hz]</th><th>Sφ(f) [dB]</th><th>Jitter [ps rms]</th></tr> </thead> <tbody> <tr> <td>100 Hz to 1.5 MHz</td><td>-61.86</td><td>1.616 ps</td></tr> <tr> <td>50 kHz to 1.5 MHz</td><td>-62.07</td><td>1.578 ps</td></tr> </tbody> </table>	Frequency range [Hz]	Sφ(f) [dB]	Jitter [ps rms]	100 Hz to 1.5 MHz	-61.86	1.616 ps	50 kHz to 1.5 MHz	-62.07	1.578 ps	 <p>Frequency deviation [ppm]</p> <p>Tuning voltage [V]</p>	 <p>Frequency deviation [ppm]</p> <p>Temperature [°C]</p>
Frequency range [Hz]	Sφ(f) [dB]	Jitter [ps rms]									
100 Hz to 1.5 MHz	-61.86	1.616 ps									
50 kHz to 1.5 MHz	-62.07	1.578 ps									

Standard Shipping Method



Production tolerance complying DIN IEC 286-3

Enclosure Type

Tape width

Quantity per meter

Quantity per reel

Dimension

G185B

44

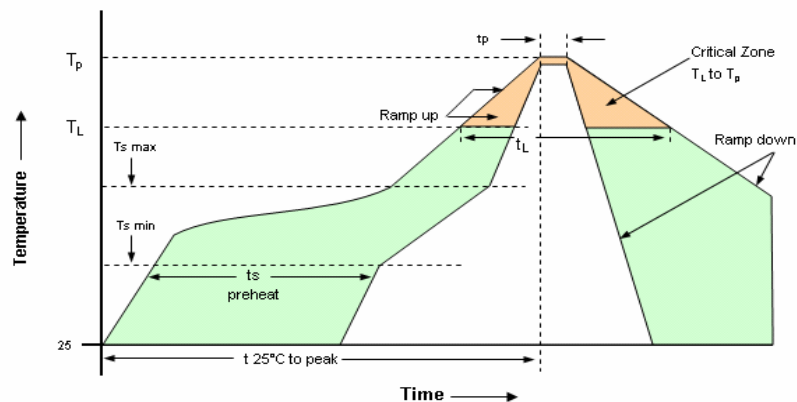
37.5

230

32

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) (ts)	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.

How to order this product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency
C2530	D206	SV033	RFH	A1	30MHz

Vs.operat. Temp. Range

D206	±2.0ppm	-20 ... +70°C
D106	±1.0ppm	-20 ... +70°C
B106	±1.0ppm	0 ... +50°C
B507	±0.5ppm	0 ... +50°C
F807	±0.8ppm	-40 ... +85°C
B287	±0.28ppm	0 ... +50°C
G287	±0.28ppm	-30 ... +85°C
D807	±0.8ppm	-20 ... +70°C
D287	±0.28ppm	-20 ... +70°C

Supply:

SV033: 3.3V

Enclosure:

A1: G185B
B1: G185B

Signal:

RFP: PECL
RFH: HCMOS

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.