

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

50 MHz – 1 GHz

Standard frequencies

100; 122,88; 155,52; 311,04; 622,08MHz

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)						

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			120	mA	steady state @ +25°C	

RF output

Parameter	Min	Typ	Max.	Units	Condition	Ordering Code ⁵
Signal	PECL					P
Load		50		Ω	Vs - 2V	20 to 80 %
Rise and Fall time			1	ns		
Duty cycle	45		55	%		
Signal	LVDS					L
Load		100		Ω		10 to 90 %
Rise and Fall time			1	ns		
Duty cycle	40		60	%		

Frequency Tuning (EFC)

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		

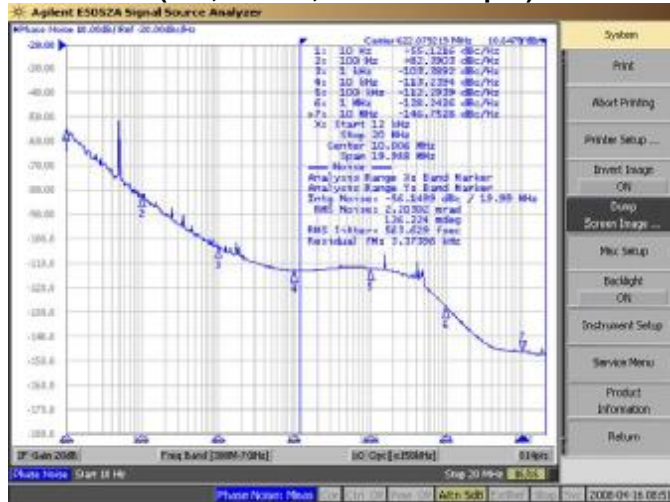
Additional parameters

Parameter	Min	Typ	Max.	Units	Condition
Phase Noise ³		-50 -85 -100 -109 -109 -130 -145		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 @ 622,08MHz
Weight			2	g	
Processing & Packing	Handling & processing note				

Absolute Maximum Ratings

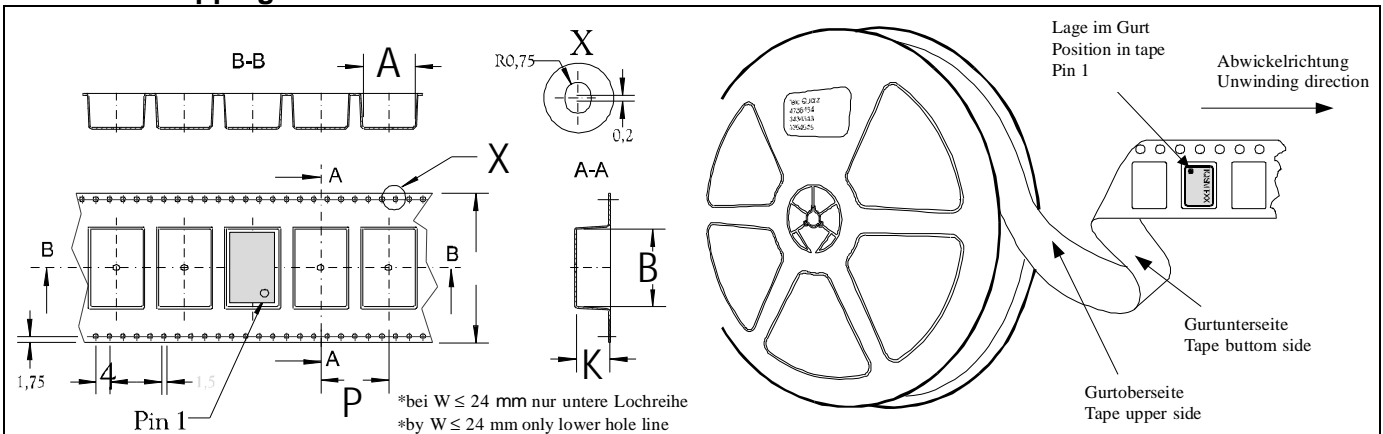
Parameter	Min	Typ	Max.	Units	Condition
Supply voltage (Vs)			6.0	V	
Control Voltage	0		Vs	V	
Operable temperature range	-40		+85	°C	
Storage temperature range	-55		+125	°C	

Typical Phase Noise and Jitter (622,08 MHz; LVPECL output)



Frequency range [Hz]	Jitter [ps rms]			
12kHz to 20MHz	0.563ps			

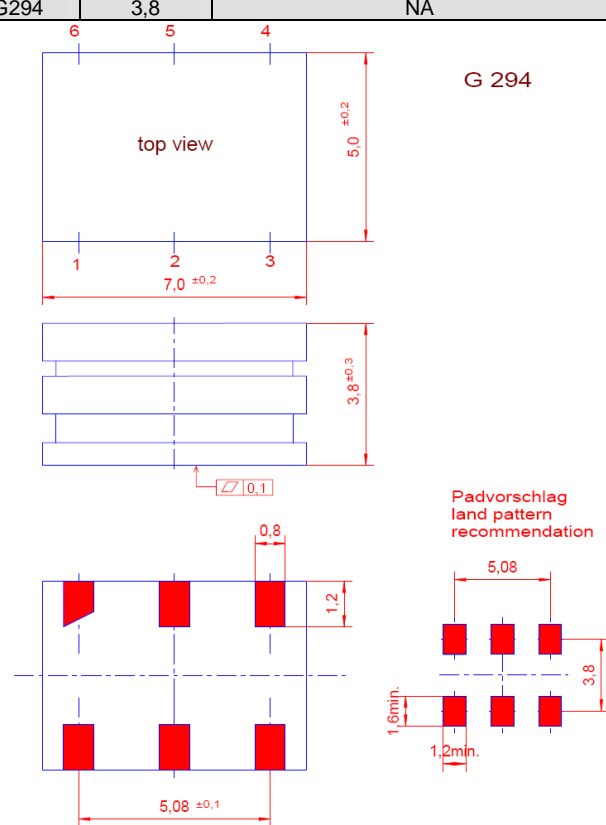
Standard Shipping Method



Production tolerance complying DIN IEC 286-3

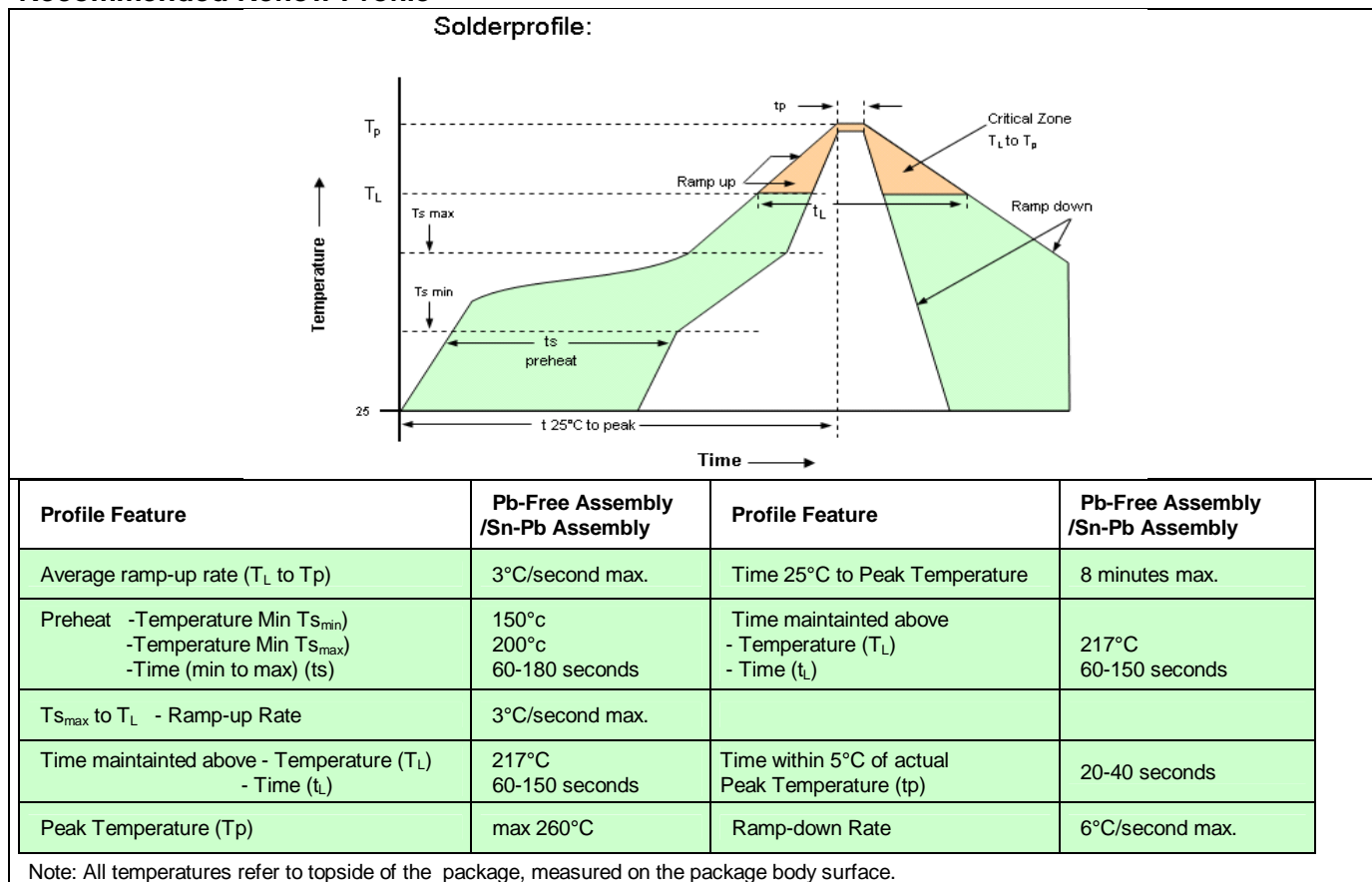
Enclosure Type	Tape width W [mm]	Quantity per meter	Quantity per reel	Dimension P
G294	12	150.	750.	8

Enclosures

Code A		
Package Codes:		
Type G294	Height "H" 3,8	Pin Length "L" NA
 <p style="text-align: center;">G 294</p> <p style="text-align: center;">top view</p> <p style="text-align: center;">Dimensions: mm</p> <p style="text-align: center;">Padvorschlag land pattern recommendation</p>		

Pin Connections
1 Voltage Control (Vc) / Enable / N.C. 2 N.C. 3 Ground (Case) 4 RF output 5 RF output complementary 6 Supply Voltage Input (Vs)
Marking
TX-702-xxxx frequency * VI AYYWW

Recommended Reflow Profile



How to order this product:

Model	Stability Code	Supply Voltage Code	RF Output Code	Package Code	Frequency Control/ Enable	Frequency
TX-702	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

Supply:

D: 3.3V

Tuning Range:

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

Enclosure:

A: G294

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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

Signal:

P: LVPECL
L: LVDS

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.