

Helping Customers Innovate, Improve & Grow



Features

EFC Standard
Small Size
100% RoHS compliant
Low Profile

Typical Applications

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

Previous Vectron Model Numbers

Frequency Range 52 MHz – 1 GHz

Standard Frequencies 622.08 MHz

Frequency stabilities¹

Parameter	Min	Typ	Max	Units	Operating temperature range	Options ⁵
vs. operating temperature range	-1.5		+1.5	ppm	-40 ... +70°C	
	-1.0		+1.0	ppm	-40 ... +70°C	
(Referenced to +25°C)	-2.5		+2.5	ppm	-20 ... +70°C	
	-1.0		+1.0	ppm	-20 ... +70°C	
	-1.0		+1.0	ppm	0 ... +50°C	
	-0.5		+0.5	ppm	0 .. +50°C	
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]

Parameter	Min	Typ	Max	Units	Operating temperature range	Options ⁵
vs. operating temperature range (Referenced to +25°C)	-0.8		+0.8	ppm	-20 ... +70°C	
	-0.28		+0.28	ppm	0 ... +50°C	
	-0.28		+0.28	ppm	-20 ... +70°C	
	-0.80		+0.80	ppm	-40 ... +85°C	
	-0.28		+0.28	ppm	-30 ... +85°C	
	-0.28		+0.28	ppm	-40 ... +85°C	
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	$V_s \pm 5\%$	
vs. load change	-0.1		+0.1	ppm	Load $\pm 10\%$	
vs aging /20 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						

Supply Voltage (Vs)

Parameter	Min	Typ	Max	Units	Condition
Supply voltage [Standard]	3.135	3.3	3.465	VDC	
Current consumption			12	mA	steady state @ +25°C

RF Output

Parameter	Min	Typ	Max	Units	Condition
Signal	PECL				$V_s - 2V$ 20 to 80 %
Load		50		Ω	
Rise and Fall time			1	ns	
Duty cycle	45		55	%	
Signal	LVDS				10 to 90 %
Load		100		Ω	
Rise and Fall time			1	ns	
Duty cycle	40		60	%	

Frequency Tuning (EFC) or Enable

Parameter	Min	Typ	Max	Units	Condition
Tuning Range	Fixed TCXO; No adjust				
Tuning Range for Stability: 807; 287; 157 Stratum 3 Version	± 5.0	±14.0	± 20.0	ppm	
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	

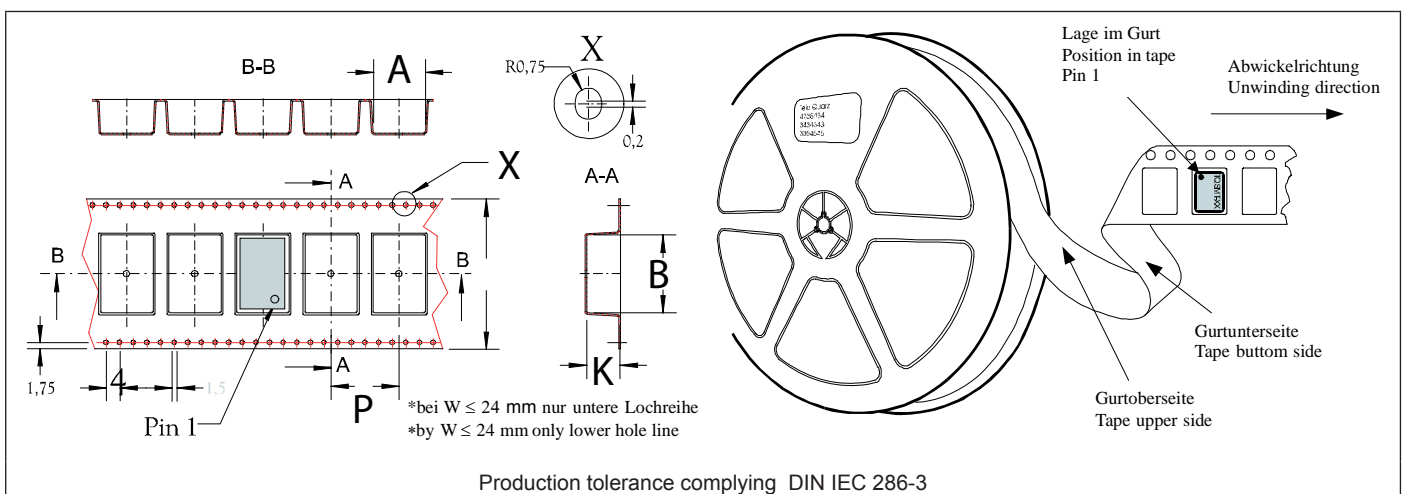
Additional Parameters

Parameter	Min	Typ	Max	Units	Condition	
Phase Noise ³		-55		dBc/Hz	10	Hz
		-85		dBc/Hz	100	Hz
		-105		dBc/Hz	1	kHz
		-115		dBc/Hz	10	kHz
		-112		dBc/Hz	100	kHz
		-130		dBc/Hz	1	MHZ
	-146		dBc/Hz	10	MHZ	
Jitter		0,5		ps	12kHz - 20 MHz	
Weight			4g			
Processing & Packing	Handling & processing note					

Absolute Maximum Ratings

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

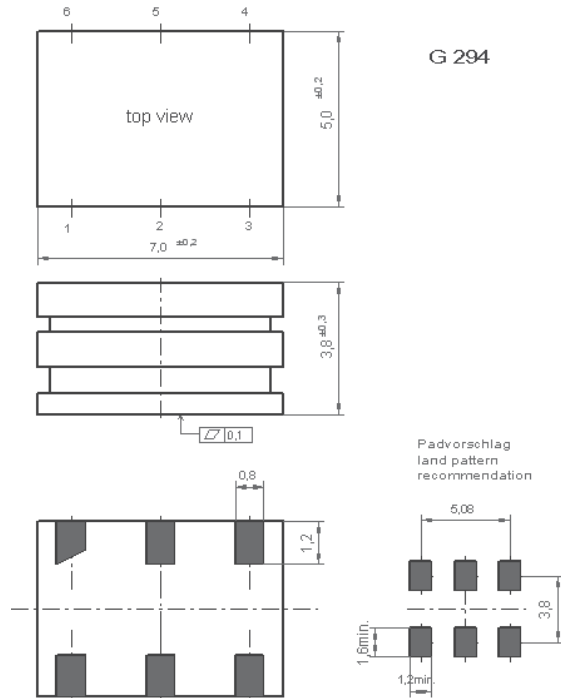
Standard Shipping Methode



Enclosure Type	Tape width W	Quantity per	Quantity per reel	Dimension P
C294	12	150.	750.	8

Enclosure

Package Codes: 700		
Type	Height "H"	Pin Length "L"
G294	2.5	NA



Dimensions: mm

Pin Connections

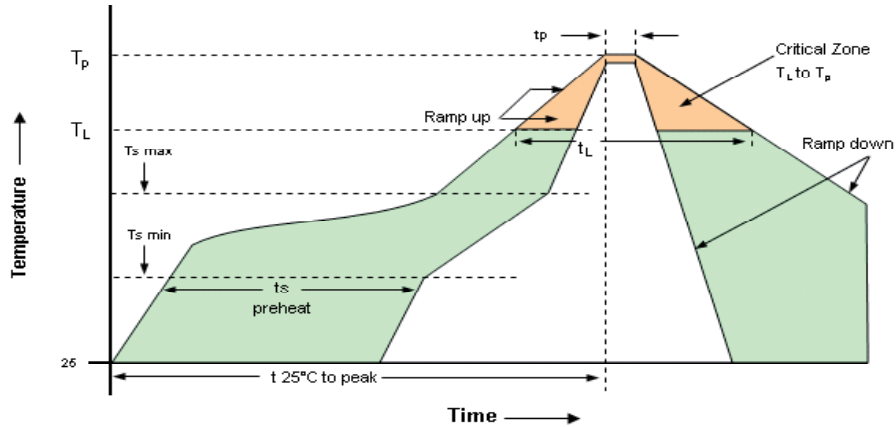
- 1: Voltage Control (Vc) / Enable / N.C
- 2: N.C.
- 3: Ground (Case)
- 4: RF output
- 5: RF output compl.
- 6: Supply Voltage Input (Vs)

Marking

TX-702
Frequency
● AYYWW

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 $T_{s\ min}$ -Temperature Min $T_{s\ max}$ -Time (min to max) t_s	150°C 200°C	Time maintained above -Temperature (T_L)	217°C
$T_{s\ max}$ 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 (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:

Use this worksheet to forward the following information to your factory representative:										
Model	Height	-	Supply Voltage	RF Output Code	Temperature Range	-	Stability	Frequency Control/ Enable	-	Frequency
TX-702	0	-	E	C	J	-	256	0	-	100MHz

Supply Voltage Code:
E: 3,3 V

RF Output Code:
C: LVPECL
D: LVDS

Temperature Range:
E: -40...+70°C
H: -30...+70°C
J: -20...+70°C
P: 0...+50°C

Frequency Control:

0: No Tuning
1: ±5.0ppm...±20.0ppm
2: ±8.0ppm...±20.0ppm

Stability Code:

256 ±2,5ppm
156: ±1,5ppm
106: ±1,0ppm
807 ±0,8ppm
507: ±0,5ppm

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.