

VC8620D-D3-20-100.000-4-5V

ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Nominal	F _o	V _{cc} =5.0V, V _c =2.5V, T _A =25°C		100.000		MHz
Supply Voltage	V _{cc}		4.5	5.0	5.5	V
Sub-Harmonics	sH	Delta Ref. to carrier		none		dBc
Spurious	Sp			-80		
Temperature Frequency Stability	st	-40°C to 55°C, ref. to +25°C.	-20		+20	ppm
V _c Input Range	V _c	Centered @ +2.5V	0		5.0	V
Tuning sensitivity	K _v			+25		ppm/V
Settable at Nominal Frequency	V _c sett	T _A =+25°C	2.0	2.5	3.0	V
V _c Input Impedance	Z _{in}	V _{cc} = 5.0V, 0 ≤ V _c ≤ 5.0V	100			kΩ
Absolute Pull Range	P _r	Minimum guaranteed pull above: Operating Temp. (-40/+55°C) 10 Years of Aging ±5% Power Supply and 10% Load Variation	±20			ppm
V _c Linearity	V _c lin	Positive slope, MB= >10kHz@-3dB			±10	%
Start-Up Time	t _{start}	T _A =25°C		2	5	ms
Operating Temperature	T _a	±20ppm Max. ref to +25°C	-40		+55	°C
Operable Temperature	T _A		-40		+85	
Storage Temperature	T _(stg)	Absolute max	-40		105	°C
Maximum Voltage V _{cc} / V _c	V _{cc(abs)} / V _c		-0.2		6.0/10	V
Aging			<3ppm 1 st year / <1 ppm years thereafter			
Moisture Sensitivity Level	MSL	JEDEC J-STD-2	1			
Termination Finish			FR5 Board, Nickel Silver Cover, Gold plated contacts.			
ESD Sensitivity	HBM	Human body model JESD22-A114		3		kV

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OUTPUT CHARACTERISTICS

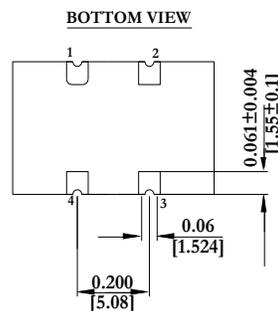
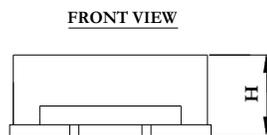
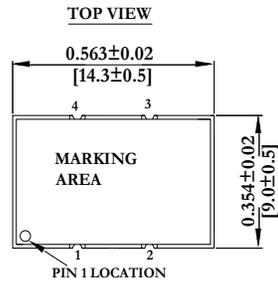
SINE-WAVE	PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
				Min	Typ.	Max	
	Output Power Level	Pw	Vcc= 5.0V ±10%; 50 ohms load	+5	+7		dBm
	Second Harmonic	H ²			-25		dBc
	Supply Current	Is			30	45	mA

PHASE NOISE TABLE

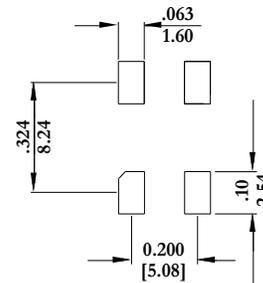
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
SSB Phase noise	$\Sigma(\Delta f)$	$\Delta f=10\text{Hz}$		-85		dBc/Hz
		$\Delta f=100\text{Hz}$		-120		
		$\Delta f=1\text{kHz}$		-145		
		$\Delta f=10\text{kHz}$		-168		
		$\Delta f=100\text{kHz}$		-175		
		$\Delta f=1.0\text{MHz}$		-175		
		$\Delta f=10\text{MHz}$		-175		
		$\Delta f=20\text{MHz}$		-175		

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MECHANICAL DIMENSIONS AND PIN FUNCTIONING



RECOMMENDED SOLDER PATTERN
TOP VIEW



H=4MM / 0.155" Max.

OUTLINE TOLERANCE:
±0.008" / 0.2mm
(Unless otherwise specified)

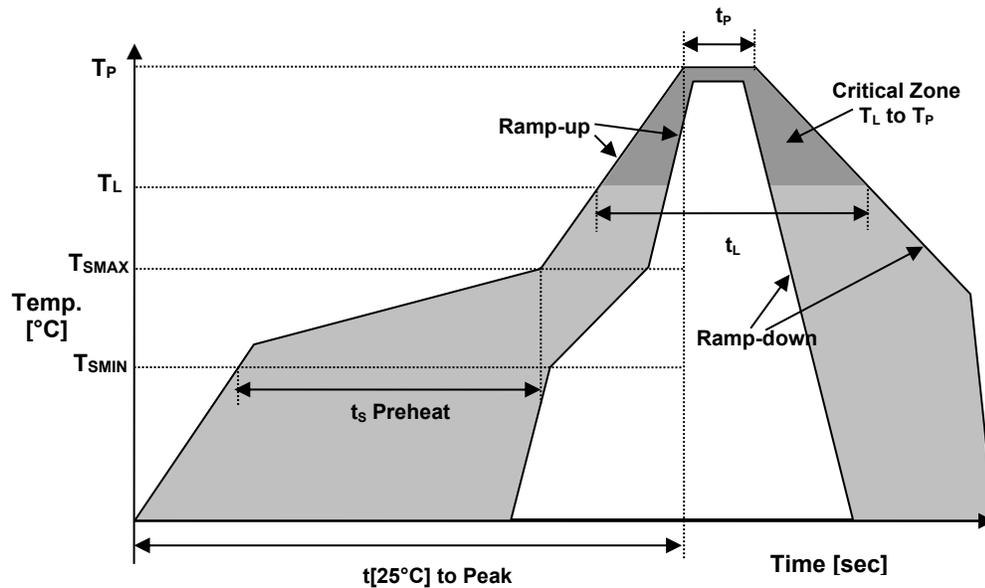
PIN FUNCTIONS:
[1] VC (Voltage Control)
[2] CASE / GROUND
[3] RF OUTPUT
[4] Vcc (Voltage supply)

MARKING:

VC8620D-D3-20
100.000-4-5V
▪ D/C

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REFLOW PROFILE



Recommended Solder Reflow Profile		
Temperature Min Preheat	T_{SMIN}	150°C
Temperature Max Preheat	T_{SMAX}	175°C
Time (T_{SMIN} to T_{SMAX})	t_s	60-180 sec.
Temperature	T_L	217°C
Peak Temperature	T_P	260°C
Ramp-up rate	R_{UP}	3°C/sec max.
Ramp-down rate	R_{DOWN}	6°C/sec max.
Time within 5°C of Peak Temperature	t_p	10 sec max.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}] \text{ to Peak}$	480 sec.
Time	t_L	60-150 sec.

APPROVALS		
Eng. approval, date:	IM	07/30/2025
Created by, date:	MP	07/30/2025
Revision: A		

