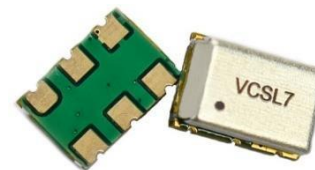


VCSL7 SERIES



ELECTRICAL SPECIFICATIONS

PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min.	Typ.	Max.	
Frequency Range	F _o		400		1000	MHz
Absolute Pull Range ¹	APR	0.3 ≤ VC ≤ 3.0	±25, ±50			ppm
Linearity	Lin	0 ≤ VC ≤ 2.5		5	15	%
Gain Transfer	Kv		+100			ppm/V
Supply Voltage	V _{cc}	(±10%)	2.97	3.3	3.63	V
Spurious Suppression	sp	Delta ref. to carrier		-60	-50	dBc
Vc Input Range	Vc	Vc center=1.65V	0.0		3.3	V
Modulation Bandwidth	Bw	MBW(-3db)	50			kHz
Vc Input Impedance	Zin	Vcc = 3.3, 0 ≤ VC ≤ Vcc	75			kΩ
Enable/Disable, PIN #2	OE	ENABLE: HIGH LEVEL OR OPEN	2.475		3.63	V
		DISABLE: LOW LEVEL OR GND	GND		0.3	V
Start-Up Time	t _{start}	T _a =25°C			10	ms
Operating Temperature Range	T _a		-40		+85	°C
Storage Temperature Range	T _(stg)	Absolute max	-55		+125	°C
Maximum Voltage	V _{cc(abs)}		0		4.5	V
Moisture Sensitivity Level	MSL	JEDEC J-STD-2	1			
Termination Finish			5x7mm FR5 package, Nickel Silver cover, Gold plating contacts			
ESD Sensitivity	HBM	Human body model JESD22-A114		3		kV

1. Value of pulling guaranteed over + 25°C calibration tolerance, and variation with operating temperature range, input voltage, load, aging, shock and vibration.

VCSSL7 SERIES

OUTPUT CHARACTERISTICS

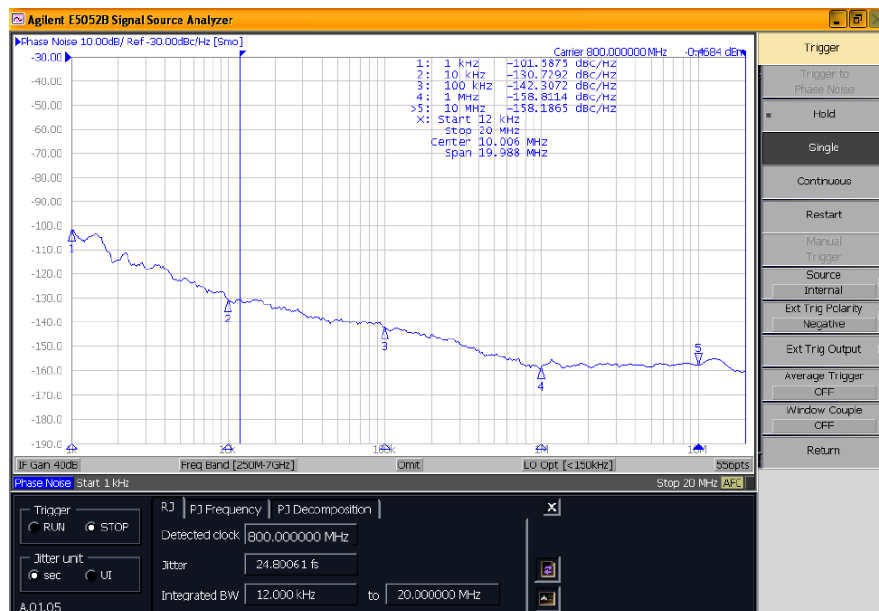
LVPECL	PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
				Min	Typ.	Max	
	Output Current	I_{out}				20	mA
	Mid- Level	V_m	Output termination 50Ω to $V_{cc}-2.0V$, $3.3V \pm 10\%$	$V_{cc}-1.4$	$V_{cc}-1.25$	$V_{cc}-1.0$	mV
	Single Ended Swing			450	600	750	mV-pp
	Differential Swing				1.5		V-pp
	Rise/Fall Time	T_r/T_f	20% to 80%	@ 400 ~ 849 MHz		400	ps
				@ 850 ~ 1000 MHz		300	ps
	Duty Cycle/ Symmetry	$D_{CY\%}$	@ 50% signal level	Standard	40	60	%
				Tight*	45	55	%
	Supply Current	I_s	Output termination 50Ω to $V_{cc}-2.0V$, $3.3V \pm 10\%$, $+25^\circ C$			100	mA
	Output Load	O_{CL}	to $V_{cc}-2.0V$		50		Ω

*Available for frequency higher than 600 MHz only.

PHASE NOISE

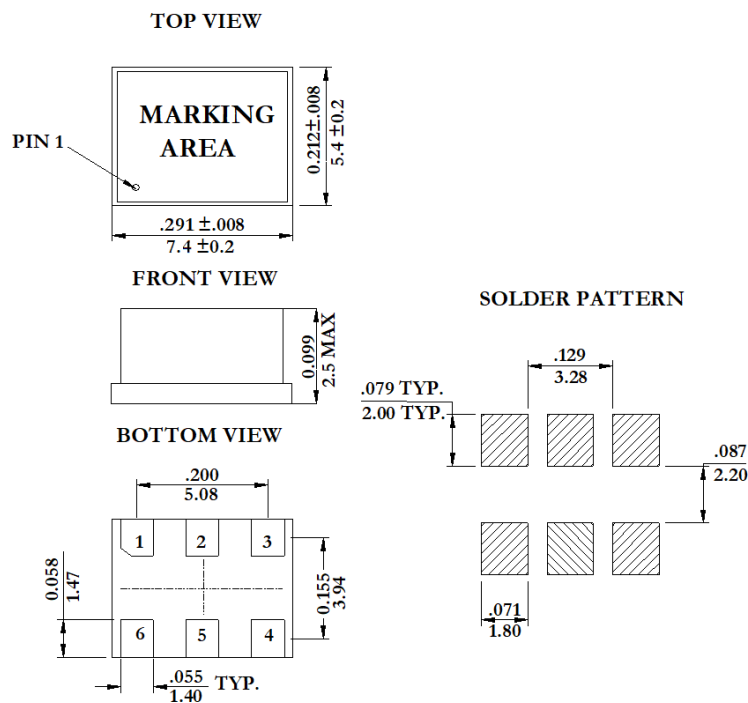
PARAMETER	SYMBOL	CONDITION	VALUE			UNIT
			Min	Typ	Max	
SSB Phase noise*	$\Sigma(\Delta f)$	$\Delta f=1kHz$		-98		dBc/Hz
		$\Delta f=10kHz$		-126		
		$\Delta f=100kHz$		-145		
		$\Delta f=1.0MHz$		-155		
		$\Delta f=10.0MHz$		-156		
Phase Jitter (12kHz~20MHz BW)	ϕJ			0.03		ps -rms
Period Jitter, RMS	ϕJ			2.5		ps

*Example for 800 MHz



VC SL7 SERIES

MECHANICAL DIMENSIONS, PIN FUNCTIONING & P/N



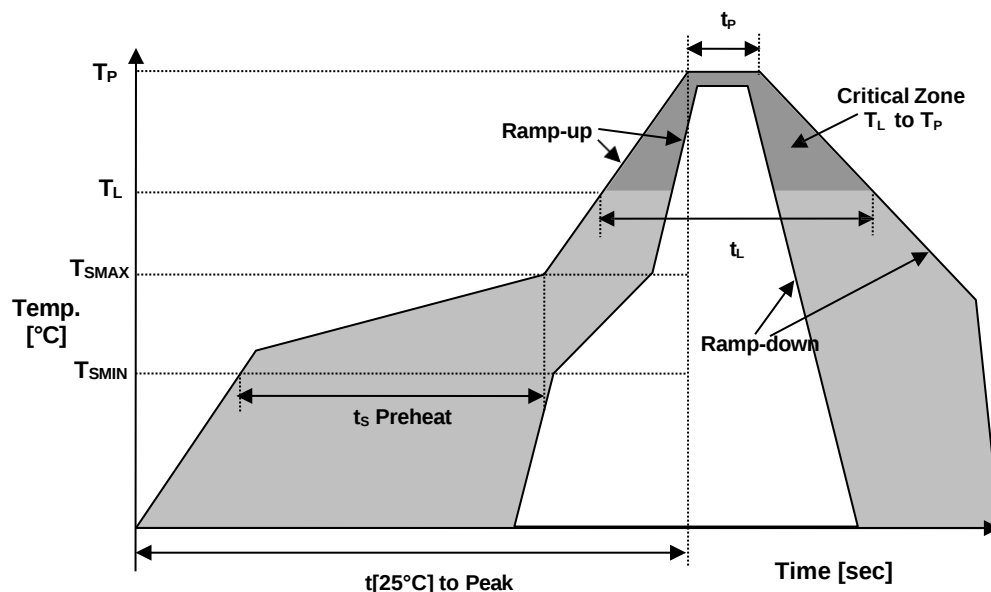
PIN	SYMBOL	FUNCTION
1	Vc	Voltage Control
2	OE	Enable/Disable High = Enable Low = Disable
3	GND	Case and Electrical Ground
4	Q	Output
5	/Q	Complementary output
6	Vcc	Power Supply Voltage

■ Marking:

VC SL7
FFF.FFF
• D/C

VCSL7 SERIES

REFLOW PROFILE



Recommended Solder Reflow Profile		
Temperature Min Preheat	T _S MIN	150°C
Temperature Max Preheat	T _S MAX	175°C
Time (T _S MIN to T _S MAX)	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°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t _L	60-150 sec.

■ PART NUMBERING SYSTEM

TYPE	SERIES	-	VOLTAGE (V)	-	TEMPERATURE RANGE (°C)	-	APR (ppm)	-	SYMMETRY (%)	-	FREQUENCY (MHz)
VCSL	7	-	3: 3.3	-	JZ: -10 ~+70 HZ: -20 ~+70 D3: -40 ~+85	-	25: ±25 50: ±50	-	blank: 40 to 60% T: 45 to 55%	-	400 ~ 1000

EXAMPLE: VCSL3-3-D3-25-T-698.000

Surface Mount VCSL7 Series, LVDS (7.4 x 5.4 mm), 3.3 VDC Supply Voltage, Operating Temperature Range -40°C to +85°C, APR ±25 ppm, Symmetry 45% to 55%, 698.000 MHz

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April, 2019