

LVDS CLOCK OSCILLATOR

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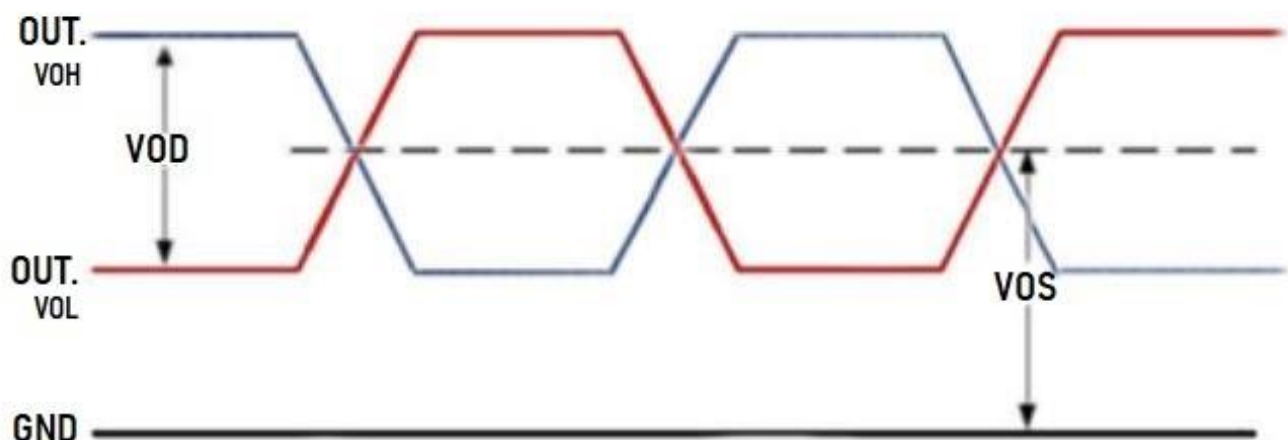
CL2520-156.250-1.8-20-X-T-TR-N1

ELECTRICAL SPECIFICATION

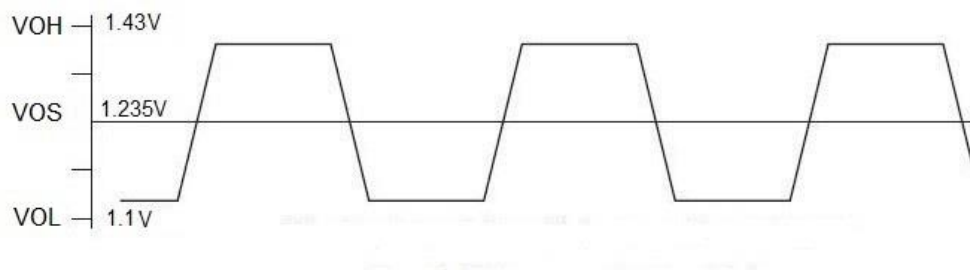


PARAMETERS	SYMBOL	CONDITIONS	VALUE	UNIT
Nominal Frequency	f_o	$T_a=25^{\circ}\text{C}$	156.250	MHz
Supply Voltage	V_{CC}	$V_{CC} \pm 5\%$	1.8	VDC
Supply Current, max	I_s	$T_a=25^{\circ}\text{C}$	30	mA
Operating Temperature Range	T_a		-40 ~ +95	$^{\circ}\text{C}$
Storage Temperature Range	$T_{(stg)}$	Absolute max	-55 ~ +125	$^{\circ}\text{C}$
Output Logic Type			LVDS	
Overall Freq. Stability, max.	$\Delta f/f_o$	Inclusive of 25°C Tolerance, Changes due to Operating Temperature and Aging	± 20 ⇐	ppm
Output Voltage	V_{OH}	V_{OH} , max, $R_L=100\ \Omega$, $CE \geq V_{CC}-0.3\text{V}$, OUT/OUTN	1.6	VDC
	V_{OL}	V_{OL} , min, $R_L=100\ \Omega$, $CE \geq V_{CC}-0.3\text{V}$, OUT/OUTN	0.9	VDC
Differential Voltage, min/max	$V_{OD}/V_{OD'}$	$R_L=100\ \Omega$, $CE \geq V_{CC}-0.3\text{V}$, OUT/OUTN	247 / 454	mV
Differential Voltage Deviation, max	ΔV_{OD}		50	mV
Offset Voltage, min/max	V_{OS}	$R_L=100\ \Omega$, $CE \geq V_{CC}-0.3\text{V}$, OUT/OUTN	1.125 / 1.375	V
Offset Deviation, max	ΔV_{OS}		50	mV
Output Swing, min	V_{opp}		0.25	V
Output Load		Connected between Out and Complementary Out	100	Ω
Enable / Disable Function	E/D	Pin 1: N.C. (Open) or High ($0.7 \times V_{CC}$)	Pin 4 & 5 – Oscillation (Enabled)	
		Pin 1: Low ($0.3 \times V_{CC}$)	Pin 4 & 5 – High Impedance (Disabled)	
Symmetry (Duty Cycle)	DC	@50% Wave form	45 ~ 55	%
Rise Time and Fall Time, max	t_r / t_f		0.5 ⇐	ns
IC Junction Temperature, max			+125	$^{\circ}\text{C}$
Operational Case Temperature Range Based On The IC max Temperature, max			+125	$^{\circ}\text{C}$
Thermal Resistance Between Case Temperature and IC Junction Temp				
Jitter, RMS, typ/max	J	@12kHz ~ 20MHz	100 / 150	fs

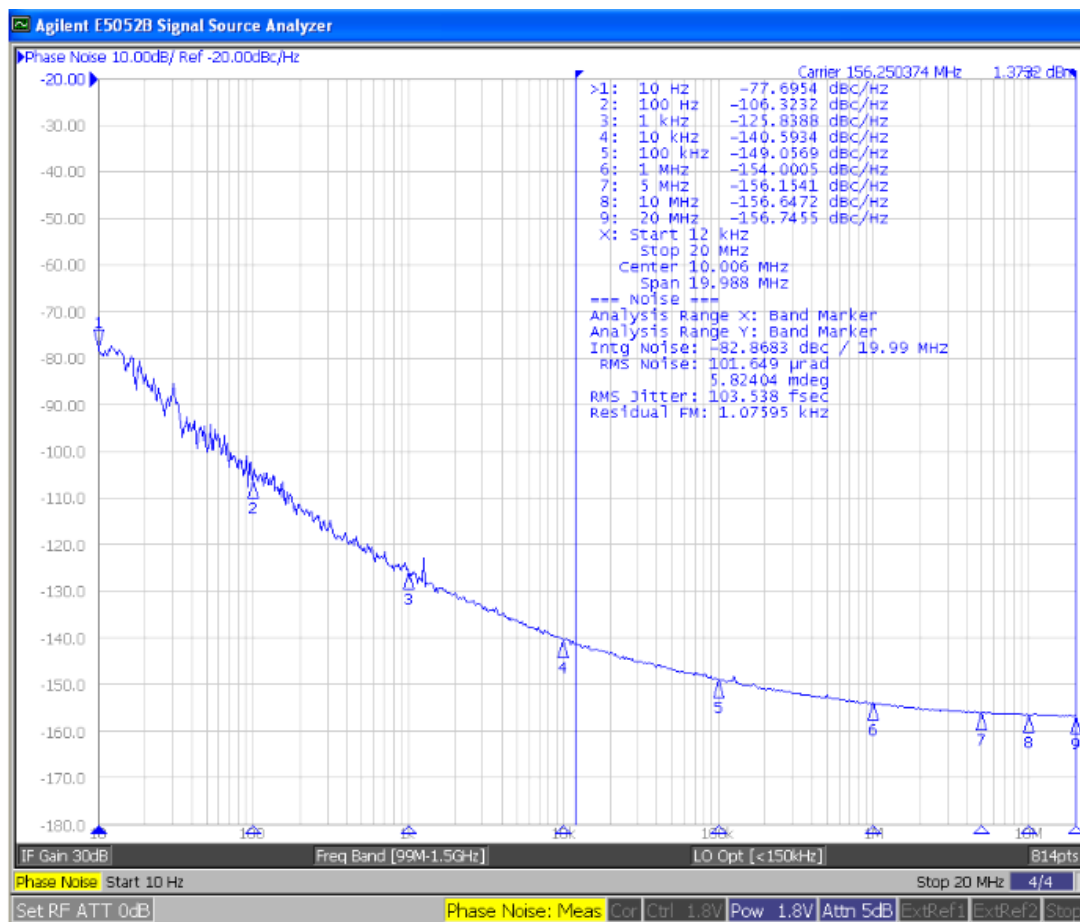
WAVEFORM DIAGRAM



LVDS TYPICAL OUTPUT LEVEL



■ PHASE NOISE

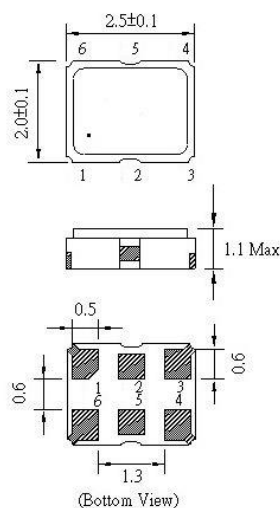


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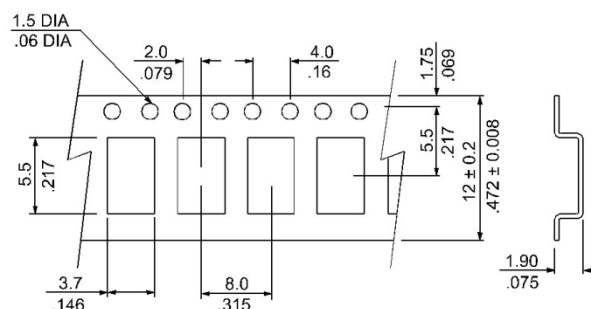
MECHANICAL SPECIFICATION



Pin Connections

- 1 – Enable / Disable
- 2 – NC
- 3 – Ground
- 4 – Output
- 5 – Complimentary Output
- 6 – Vcc

CARRIER TAPE DIMENSIONS

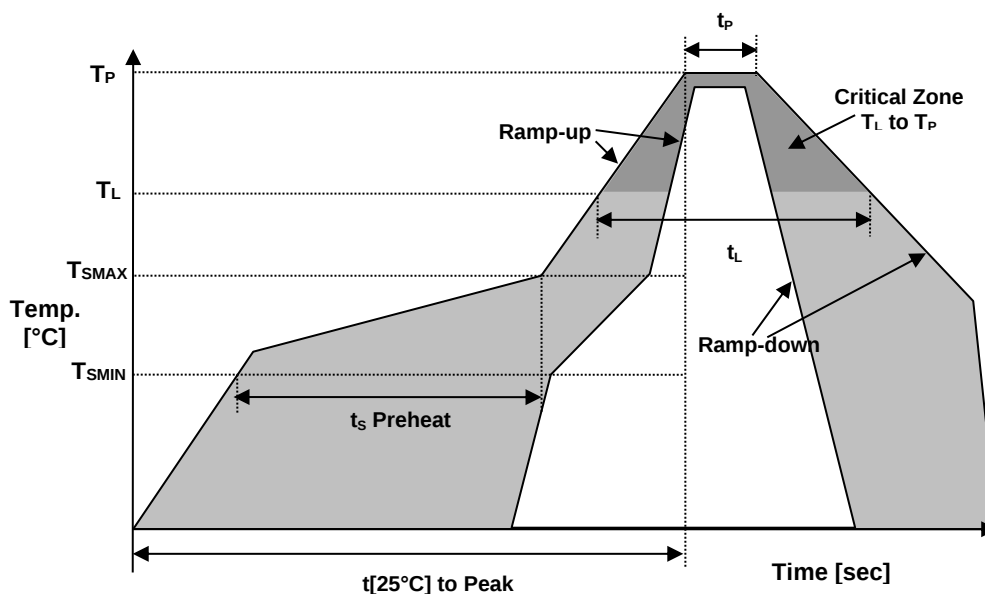


NOTE: REFER TO EIA-481 FOR DIMENSIONS NOT LISTED

PACKAGING

- 178 mm REEL DIAMETER
- 12 mm TAPE WIDTH, 8 mm PITCH
- QUANTITY: 3000 PIECES PER REEL

REFLOW PROFILE



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Reflow profile		
Temperature Min Preheat	T _{SMIN}	150°C
Temperature Max Preheat	T _{SMAX}	200°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.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t _L	60-150 sec.

ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS	Compliant
REACH-SVHC	Compliant
HALOGEN-FREE	Compliant
TERMINATION FINISH	Au



MARKING

Rx156.25

•1DEyw

x – 1 or 2 Digits as Internal Production ID code

y – Year code

w – Week code

YEAR CODE	
Year	Code
2018	8
2019	9
2020	0
2021	1
2022	2
2023	3
2024	4
2025	5
2026	6
2027	7
2028	8
2029	9

ALPHA WEEK CODE TABLE					
Week	Code	Week	Code	Week	Code
1	a	19	s	37	K
2	b	20	t	38	L
3	c	21	u	39	M
4	d	22	v	40	N
5	e	23	w	41	O
6	f	24	x	42	P
7	g	25	y	43	Q
8	h	26	z	44	R
9	i	27	A	45	S
10	j	28	B	46	T
11	k	29	C	47	U
12	l	30	D	48	V
13	m	31	E	49	W
14	n	32	F	50	X
15	o	33	G	51	Y
16	p	34	H	52	Z
17	q	35	I		
18	r	36	J		

APPROVAL

RALTRON	
DRAWN BY:	CP, October 14, 2019
APPROVED BY:	JL, October 14, 2019
REVISION:	A, Initial Release B, CP, April 17, 2020 Added Jitter Value C, AR, August 26, 2020 Updated Waveform Diagram D, Updated to current spec levels by XLiu E, Updated to current spec levels by XLiu, October 21, 2022 F, Updated to current spec levels by AR November 21, 2023 G, Updated to current spec levels by KJ January 2, 2024

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