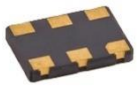
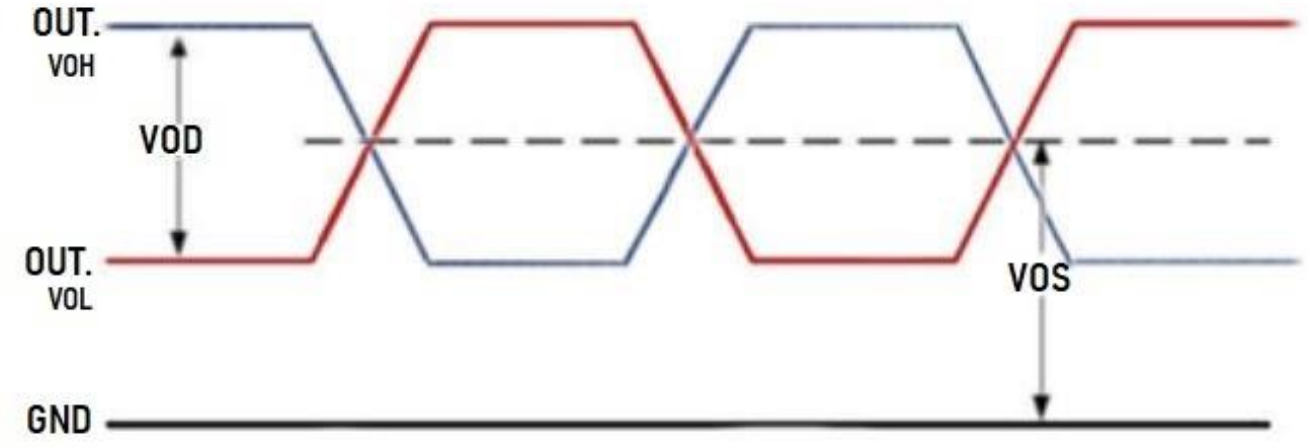
CL2520-156.250-2.5-20-X-T-TR-NS2

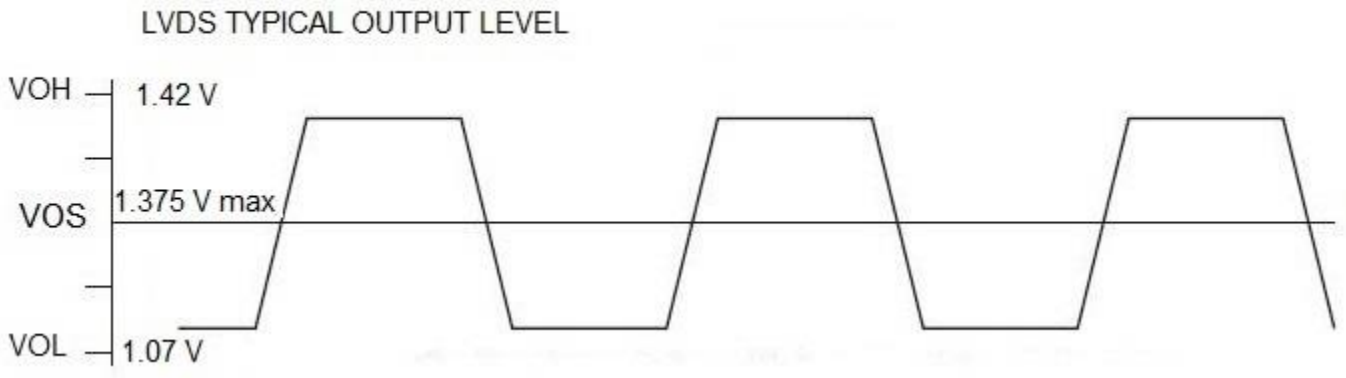


ELECTRICAL SPECIFICATION

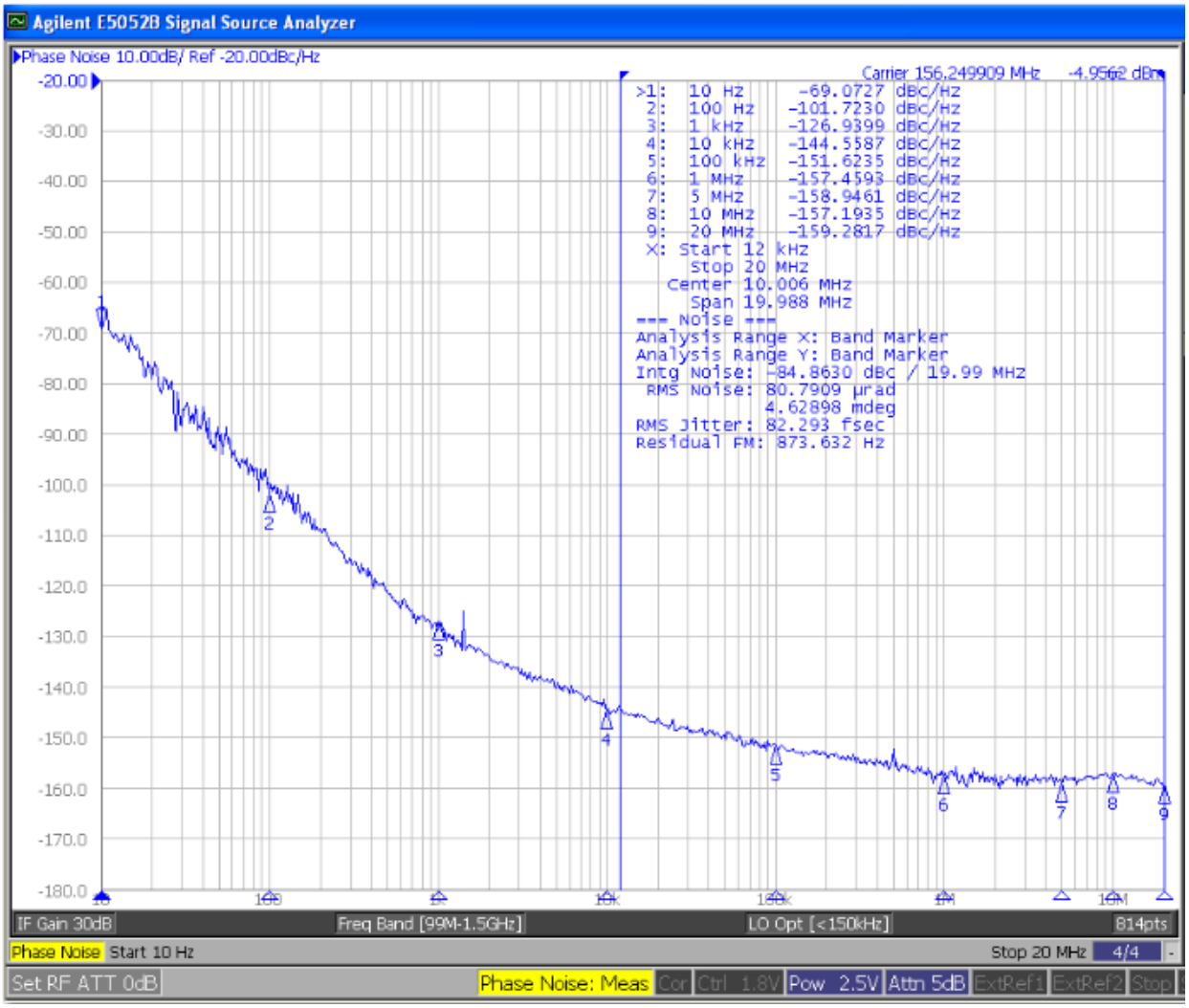
PARAMETERS	SYMBOL	CONDITIONS	VALUE	UNIT
Nominal Frequency	fo	Ta=25°C	156.250	MHz
Supply Voltage	V_{CC}	Vcc ±5%	2.5	VDC
Supply Current, max	I_S	Ta=25°C	40	mA
Operating Temperature Range	Ta		-40 ~ +85	°C
Storage Temperature Range	$T_{(stg)}$	Absolute max	-55 ~ +125	°C
Output Logic Type			LVDS	
Overall Freq. Stability, max.	Δf/fo	Inclusive of 25°C Tolerance, Changes due to Operating Temperature, 10 years Aging	±20 ⇦	ppm
Output Voltage	V_{OH}	V_{OH}, max, RL=100 Ω, CE≥Vcc-0.3V, OUT/OUTN	1.6	VDC
	V_{OL}	V_{OL}, min, RL=100 Ω, CE≥Vcc-0.3V, OUT/OUTN	0.9	VDC
Differential Voltage, min/max	$V_{OD}/V_{OD'}$	RL=100 Ω, CE≥Vcc-0.3V, OUT/OUTN	247 / 454	mV
Differential Voltage Deviation, max	ΔV_{OD}		50	mV
Offset Voltage, min/max	V_{OS}	RL=100 Ω, CE≥Vcc-0.3V, 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 x Vcc)	Pin 4 & 5 – Oscillation (Enabled)	
		Pin 1: Low (0.3 x Vcc)	Pin 4 & 5 – High Impedance (Disabled)	
Symmetry (Duty Cycle)	DC	@50% Wave form	45 ~ 55	%
Rise Time and Fall Time, max	tr / tf		400	ps
Jitter, RMS, typ/max	J	@12kHz ~ 20MHz	80 / 100	fs

WAVEFORM DIAGRAM



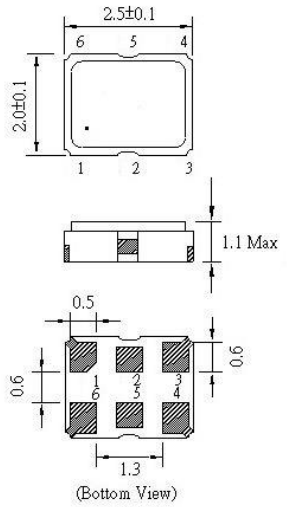

LVDS TYPICAL OUTPUT LEVEL
VOH
1.42 V
VOS
1.375 V max
VOL
1.07 V

PHASE NOISE


Agilent E5052B Signal Source Analyzer
Phase Noise 10.00dB/ Ref -20.00dBc/Hz
Carrier 156.249909 MHz -4.9562 dBm
>1: 10 Hz -69.0727 dBc/Hz
2: 100 Hz -101.7230 dBc/Hz
3: 1 kHz -126.9399 dBc/Hz
4: 10 kHz -144.5587 dBc/Hz
5: 100 kHz -151.6235 dBc/Hz
6: 1 MHz -157.4593 dBc/Hz
7: 5 MHz -158.9461 dBc/Hz
8: 10 MHz -157.1935 dBc/Hz
9: 20 MHz -159.2817 dBc/Hz
X: Start 12 kHz
Stop 20 MHz
Center 10.006 MHz
Span 19.988 MHz
--- Noise ---
Analysis Range X: Band Marker
Analysis Range Y: Band Marker
Intg Noise: -84.8630 dBc / 19.99 MHz
RMS Noise: 80.7909 µrad
4.62898 mdeg
RMS Jitter: 82.293 fsec
Residual FM: 873.632 Hz
-20.00
-30.00
-40.00
-50.00
-60.00
-70.00
-80.00
-90.00
-100.0
-110.0
-120.0
-130.0
-140.0
-150.0
-160.0
-170.0
-180.0
IF Gain 30dB
Freq Band [99M-1.5GHz]
LO Opt [<150kHz]
814pts
Phase Noise Start 10 Hz
Stop 20 MHz
4/4
Set RF ATT 0dB
Phase Noise: Meas
Cor
Ctrl 1.8V
Pow 2.5V
Attn 5dB
ExtRef1
ExtRef2
Stop

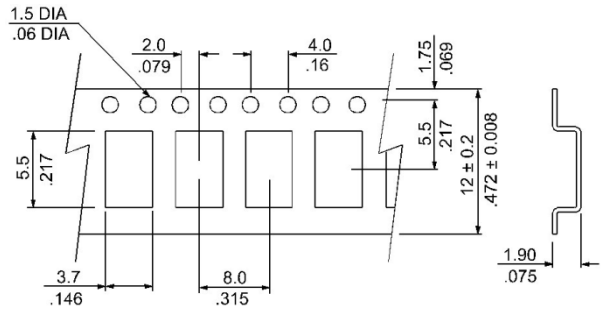
CL2520-156.250-2.5-20-X-T-TR-NS2

MECHANICAL SPECIFICATION



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

CARRIER TAPE DIMENSIONS

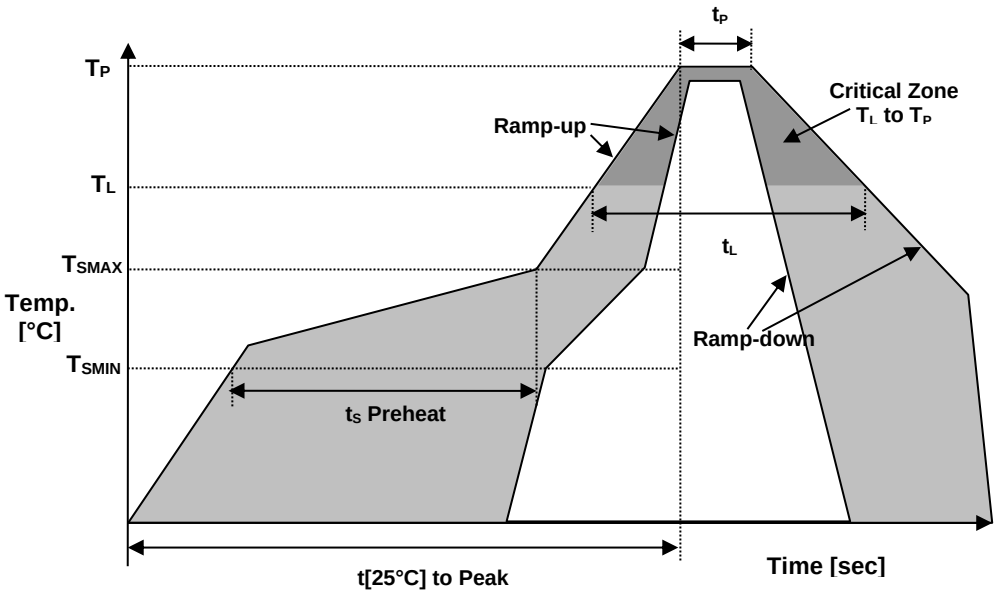


NOTE: REFER TO EIA-481 FOR DIMENSIONS NOT LISTED

PACKAGING

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

REFLOW PROFILE



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
•2DEyw

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, April 17, 2020
APPROVED BY:	JI, April 17,2020
REVISION:	A, Initial Release B AR, August 28, 2020, Updated Waveform Diagram C, Updated to current spec levels by XLiu, October 21, 2022