

1. Device Name VC-TCXO
2. Model Name DSA221SDN
3. Nominal Frequency 19.200 MHz
4. Mass 0.02g max.
5. Absolute Maximum Ratings

	Item	Symbol	Rating	unit
1	Supply Voltage	V _{CC}	-0.3~+4.6	V
2	Storage Temperature Range	T _{STG}	-40~+85	°C

6. Recommended Operating Conditions

	Item	Symbol	min.	typ.	max.	unit
1	Supply Voltage	V _{CC}	+2.66	+2.8	+2.94	V
2	Load Impedance (resistance part) (parallel capacitance)	LOAD_R	9	10	11	kΩ
		LOAD_C	9	10	11	pF
3	Control Voltage Range	V _{CONT}	+0.4	+1.4	+2.4	V
4	Operating Temperature Range	T _{OPR}	-30	-	+85	°C

7. Electrical Characteristics

(T_A=-30~+85°C, LOAD_R//C=10kΩ//10pF, V_{CC}=+2.8V, V_{CONT}=+1.4V, unless otherwise noted)

	Item	Conditions	Limits			unit	Notes		
			min.	typ.	max.				
1	Current Consumption		-	-	+1.5	mA			
2	Output Level		0.8	-	-	V _{P.P}	1		
3	Symmetry	GND level (DC cut)	40/60	-	60/40	%			
4	Harmonics		-	-	-5	dBc			
5	Frequency Stability	After 2 times reflow Ref. to nominal frequency	1.Tolerance	-	-	±1.5	ppm	2,3	
			2.vs Temperature	T _A =-30~+85°C Ref. to frequency (T _A =+25°C)	-	-	±2.0		ppm
			3.vs Supply Voltage	V _{CC} =+2.8V±0.14V	-	-	±0.3		ppm
			4.vs Load Variation	LOAD_R//C=(10kΩ//10 pF)±10%	-	-	±0.2		ppm
			5.vs Aging	T _A =Room ambient	-	-	±0.7		ppm/year
6	Start Up Time	@90% of final Vout level	-	-	3.0	ms			
		Within ±0.5ppm of final frequency	-	-	3.0	ms			
7	Frequency Control	V _{CONT} =+1.4V±1.0V	1.Control Range	±5.5	-	±12	ppm	4	
			2.Input Resistance	500	-	-	kΩ		
8	SSB Phase Noise	Relative to f0 level offset 10Hz	-	-	-86	dBc/Hz			
		Relative to f0 level offset 100Hz	-	-	-110	dBc/Hz			
		Relative to f0 level offset 1kHz	-	-	-137	dBc/Hz			
		Relative to f0 level offset 10kHz	-	-	-145	dBc/Hz			
		Relative to f0 level offset 100kHz	-	-	-150	dBc/Hz			

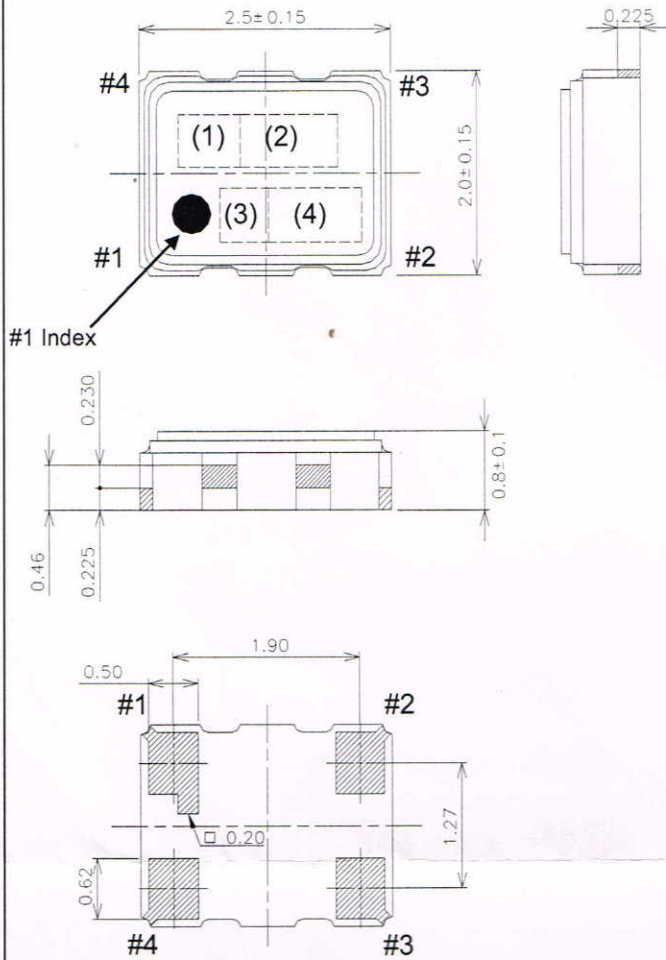
Notes

1. Clipped sine wave (DC-coupled)
2. T_A=+25°C
3. Please leave after reflow in 2h or more at room ambient.
4. Positive slope (Frequency becomes high in proportion to frequency control voltage.)

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8. Outline, Pin Connections

Outline



Pin Connections

Pin No.	Connection
#1	V _{CONT}
#2	GND
#3	Output
#4	V _{CC}

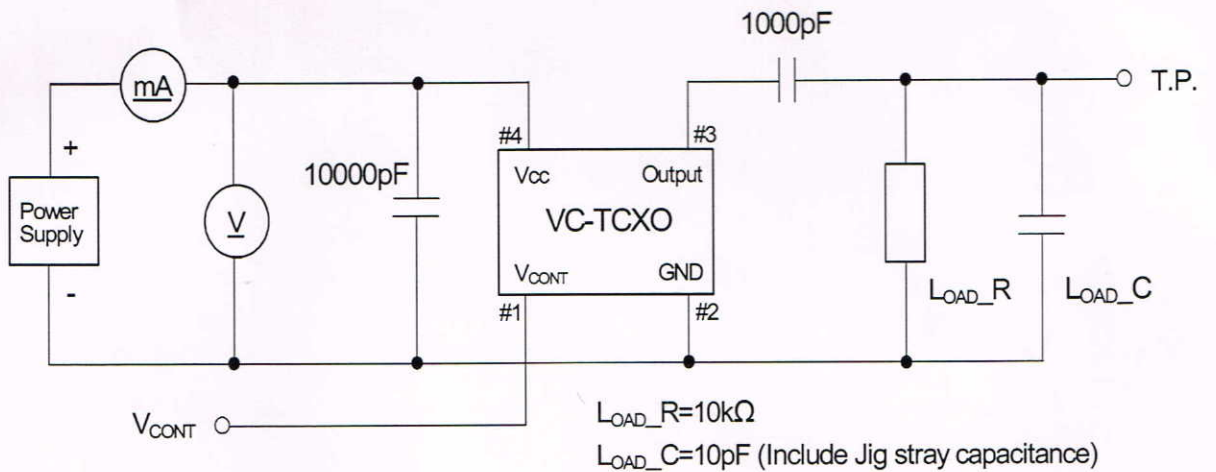
Marking

(1) Model code	AN
(2) Frequency	19.2 (MHz, 3digits)
(3) Logo	D
(4) Date code	Year (1digit) +Week (2digits) e.g.2015/1/1 → 501

unit: mm

Dimensional Tolerance: ±0.15
(Unless otherwise noted)

9. Measurement Circuit



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