1. Device Name VC-TCXO
2. Model Name DSA321SDA
3. Nominal Frequency 20.000 MHz
4. Mass 0.03g max.

5. Absolute Maximum Ratings

	Item	Symbol	Rating	unit
1	Supply Voltage	V_{CC}	-0.3~+6.0	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}	+3.135	+3.3	+3.465	V
2	Load Impedance (resistance part)	L_{OAD}_R	9	10	11	kΩ
	(parallel capacitance)	L_{OAD}_C	9	10	11	pF
3	Control Voltage Range	V_{CONT}	+0.5	+1.5	+2.5	V
4	Operating Temperature Range	$T_{_OPR}$	-40	-	+85	°C

7. Electrical Characteristics

(T_A=-40~+85°C, L_{OAD}_R//C=10kΩ//10pF, V_{CC}=+3.3V, V_{CONT}=+1.5V, unless otherwise noted)

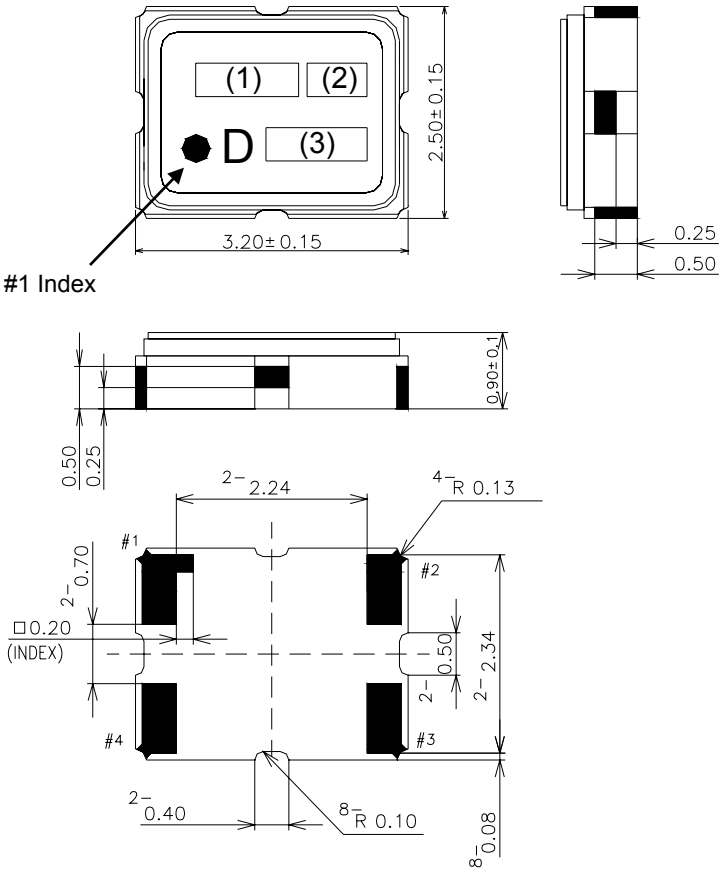
	Item	Conditions	Limits			unit	Notes
			min.	typ	max.		
1	Current Consumption		-	-	+1.5	mA	
2	Output Level		0.8	-	-	V_{P-P}	1
3	Symmetry	GND level (DC cut)	40/60	-	60/40	%	
4	Frequency Stability 1.Tolerance	After 2 times reflow Ref. to Nominal Frequency	-	-	±1.5	ppm	2
	2.vs Temperature	T_A=-30~+85°C Ref. to Frequency (T_A=+25°C)	-	-	±0.5	ppm	
		T_A=-40~-30°C Ref. to Frequency (T_A=+25°C)	-	-	±1.0	ppm	
	3.vs Supply Voltage	V_{CC}=+3.3V±5%	-	-	±0.2	ppm	
	4.vs Load Variation	L_{OAD}_R//C=(10kΩ//10pF)±10%	-	-	±0.2	ppm	
	5.vs Aging	T_A=Room ambient	-	-	±1.0	ppm/year	
5	Start Up Time	@90% of final Vout level	-	-	2.0	ms	
6	Frequency Control 1.Control Range	V_{CONT}=+0.5V~+2.5V(Ref.+1.5V)	±9	-	±15	ppm	3
	2.Input Resistance		500	-	-	kΩ	
7	SSB Phase Noise	Relative to f0 level offset 1kHz	-	-	-130	dBc/Hz	

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

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8. Outline, Pin Connections

Outline



Pin Connections

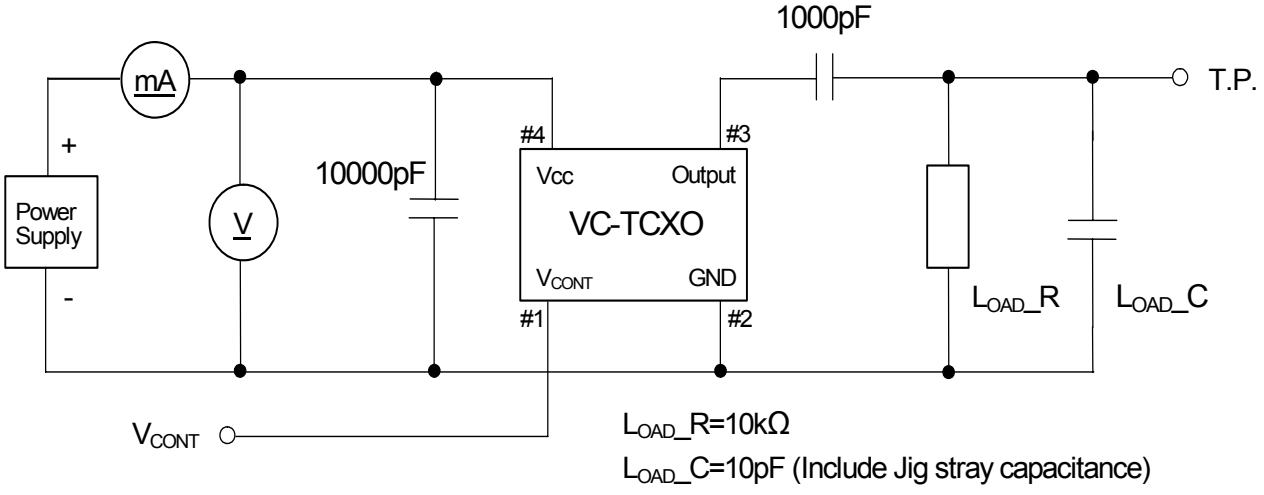
Pin No.	Connection
#1	V_{CONT}
#2	GND
#3	Output
#4	V_{CC}

Marking

(1) Frequency	20.00 (MHz, 4digits)
(2) Model code	S
(3) Date code	Year (1digit) +Week (2digits) e.g.2012/01/01→ 201

unit: mm
Dimensional Tolerance: ±0.15
(Unless otherwise noted)

9. Measurement Circuit



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