1. Device Name TCXO
2. Model Name DSB221SJ
3. Nominal Frequency 32.768MHz
4. Mass 0.02g max

5. Absolute Maximum Ratings

	Item	Symbol	Rating	unit
1	Supply Voltage	V_{CC}	-0.6~+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	Output Load	$L_{_CMOS}$	-	15	-	pF
3	Operable Temperature Range	$T_{_OPR}$	-40	-	+85	°C

7. Electrical Characteristics

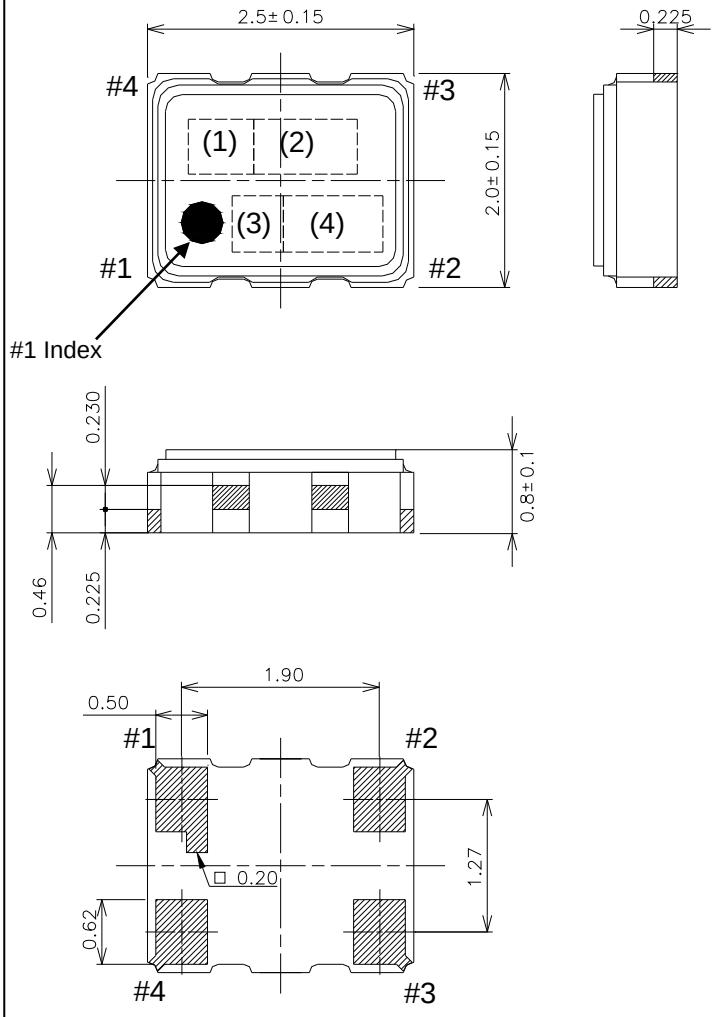
T_A=-40~+85°C, V_{CC}=+2.8V, $L_{_CMOS}$=15pF unless otherwise noted

	Item	Condition	Limits			unit	Notes
			min.	typ.	max.		
1	Current Consumption		-	-	6.0	mA	
2	Output Characteristics						
	1.Rise Time	V_{CC}x0.1~V_{CC}x0.9	-	-	10	ns	
	2.Fall Time	V_{CC}x0.1~V_{CC}x0.9	-	-	10	ns	
	3.Low Level		-	-	V_{CC}x0.1	V	
	4.High Level		V_{CC}x0.9	-	-	V	
	5.Symmetry	V_{CC}x0.5 Level	40	50	60	%	
3	Frequency Stability						
	1. Tolerance	After 2 times reflow Ref. to nominal frequency	-	-	±1.5	ppm	1,2
	2.vs Temperature	T_A=-40~+85°C Ref. to frequency(T_A=+25°C)	-	-	±2.5	ppm	
	3.vs Supply Voltage	V_{CC}=+3.3V±5%	-	-	±0.3	ppm	
	4.vs Load Variation	$L_{_CMOS}$=15pF±10%	-	-	±0.2	ppm	
	5.vs Aging	T_A= Room ambient	-	-	±1.0	ppm/year	
4	Start Up Time	Within ±0.5ppm of final frequency	-	-	2.0	ms	
5	SSB Phase Noise	Relative to F0 level offset 1kHz	-	-	-125	dBc/Hz	

Notes
1. T_A=+25°C
2. Please leave after reflow in 2h or more at room ambient.

8. Outline, Pin Connections

Outline



Pin Connections

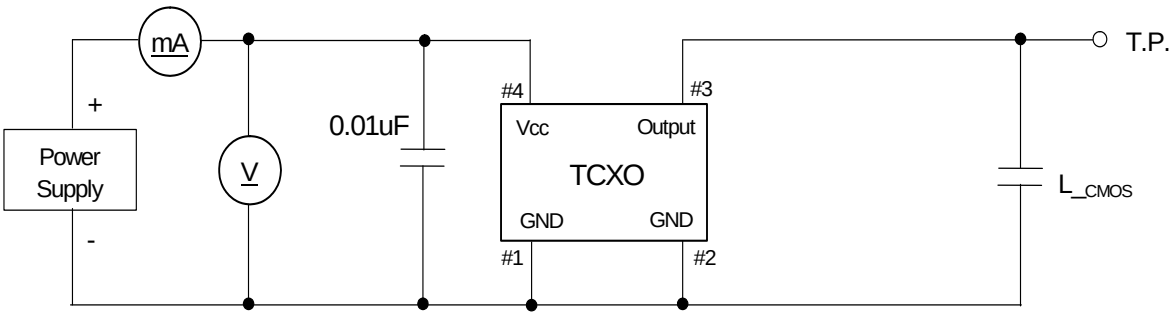
Pin No.	Connection
#1	GND
#2	GND
#3	Output
#4	V_{CC}

Marking

(1) Model code	N
(2) Frequency	32.7(MHz, 3digits)
(3) Logo	D
(4) Date code	Year(1digit)+Week(2digits)
	e.g.2018/1/1→ 801

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

9. Measurement Circuit



L_{CMOS}=15pF (Include Jig stray capacitance)

TITLE	Remark		
DSB221SJ TYPE SPECIFICATION			
Date	Spec. No.	Rev.	Page
2018/09/03	ZC13707	-	2/2