1. Device Name VC-TCXO
2. Model Name DSA535SA
3. Nominal Frequency 13.000 MHz
4. Mass 0.08g 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}	+2.6	+2.75	+2.9	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	Operable Temperature Range	$T_{_OPR}$	-30	-	+85	°C

7. Electrical Characteristics

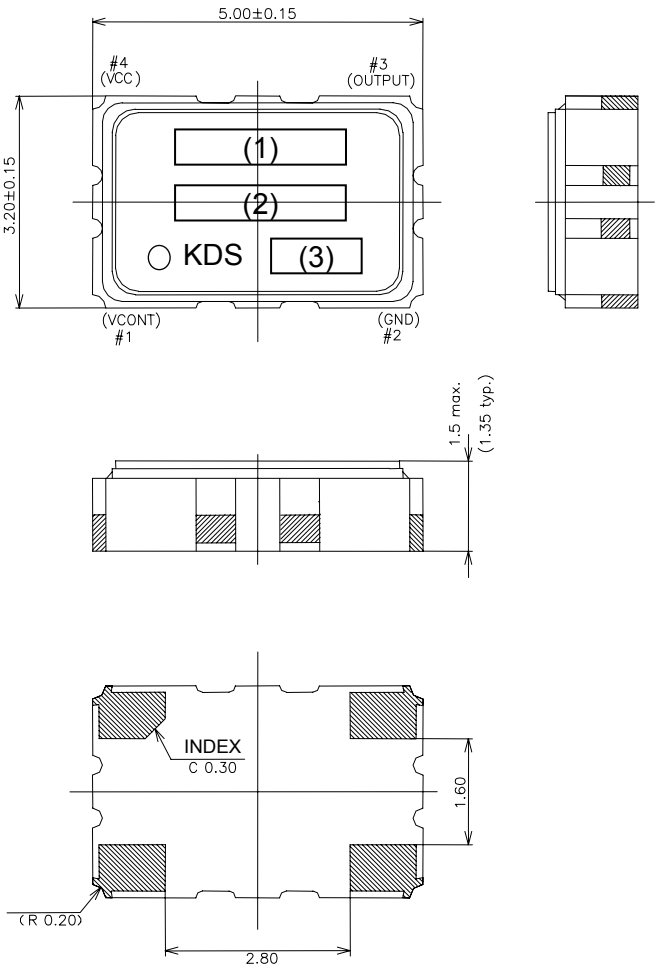
(T_A=-30 ~ +85°C, $L_{OAD_}$R//C=10kΩ//10pF, V_{CC}=+2.75V, V_{CONT}=+1.5V unless otherwise noted)

	Item	Conditions	Limits			unit	Notes
			min.	typ.	max.		
1	Current Consumption		-	-	1.3	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						
	1.Tolerance	At shipping	-	-	±0.5	ppm	2
		After 2 times reflow	-	-	±1.5	ppm	2,3
	2.vs Temperature	T_A=-30 ~ +85°C Ref. to Frequency(T_A=+25°C)	-	-	±2.5	ppm	
	3.vs Supply Voltage	V_{CC}=+2.75V±0.15V	-	-	±0.2	ppm	
	4.vs Load Variation	$L_{oad_}$R//C=(10kΩ//10pF)±10%	-	-	±0.2	ppm	
	5.vs Aging	T_A=Room ambient	-	-	±0.8	ppm/year	
6	Start Up	@90% of final Vout level	-	-	2.0	ms	
7	Frequency Control						
	1.Control Range	V_{CONT}=+0.5V ~ +2.5V(Ref:+1.5V)	±8	-	±12	ppm	4
	2.Input Resistance		1	-	-	MΩ	
8	SSB Phase Noise	Relative to F0 level offset 1kHz			-130	dBc/Hz	

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

8. Outline, Pin Connections

Outline



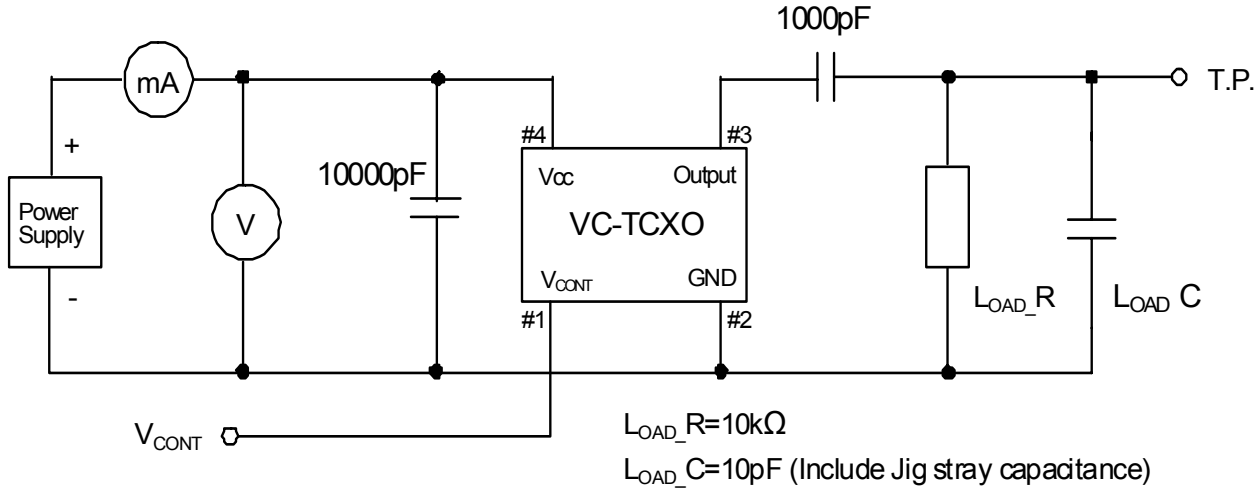
Pin Connections

Pin No.	Connection
#1	Vcont
#2	GND
#3	OUTPUT
#4	Vcc

Marking
(1) Frequency 13000(kHz, 5digits)
(2) Model code A535SA
(3) EIA Date code Year(1digit)+Week(2digits)
e.g. 2010/1/1 → 001

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

9. Measurement Circuit



L_{OAD}_R=10kΩ
L_{OAD}_C=10pF (Include Jig stray capacitance)

TITLE	Remark		
VC-TCXO PRELIMINARY SPECIFICATION			
Date	Spec. No.	Rev.	Page
2010/12/06	T10-0471(1XTQ13000RQA)	-	2/2