

# SHOULDER ELECTRONICS LIMITED

## APPROVAL SHEET

### VC-TCXO

<b>Model</b>	VU025H16803TVC(3225VCTCXO16.800 2.5PPM 3.0V)
<b>Size</b>	3225
<b>Frequency</b>	16.800000MHz
<b>Type</b>	VC-TCXO
<b>Vcc</b>	+2.5V ~ +3.3V
<b>Vcont</b>	+1.5 ± 1.0V
<b>AFC Range</b>	±9.0 ~ ±15.0ppm
<b>Temp.</b>	±2.5ppm max.@-30 ~ +85°C
<b>Slope</b>	±0.2ppm/°C max.@-20 ~ +70°C
<b>Initial Frequency</b>	±1.0ppm max.

<b>Issued</b>	
<b>Revised</b>	
<b>Customer</b>	
<b>Prepared part</b>	R&D
<b>Drawn</b>	LEO
<b>Checked</b>	JENNY
<b>Approved</b>	PERCY

	<b>Product Specification</b>	Produced date Revised date	
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## 1. Electrical Characteristics

Supply Voltage(Vcc)	+2.8V±5%
	+3.0V±5%
Output Load	10kohm//10pF±10%
Control Voltage(Vcont)	+1.5 ± 1.0V

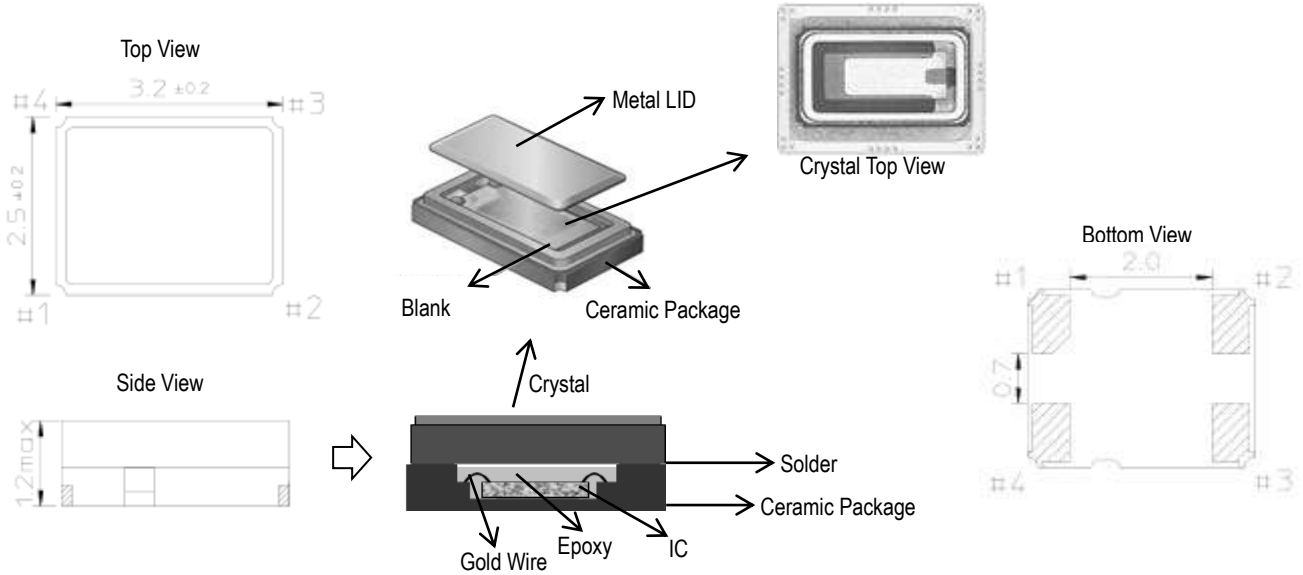
Parameter	Value	Conditions
Output Level	0.8Vp-p min	Clipped sine wave(DC-coupled)
Current	1.5mA max	10koms//10pF±10%
Operating Temperature Range	-30~+85℃	
Storage Temperature Range	-40~+85℃	
Frequency Stability		
vs. Temperature(-30 ~ +85℃)	±2.5ppm max.	Referenced to +25℃ frequency
vs. Supply Voltage	±0.2ppm max.	+2.8V±5%, +3.0V±5%
vs. Load	±0.2ppm max.	10koms//10pF±10% each
vs. Aging	±1.0ppm max.	1Year
vs. Reflow soldering	±1.0ppm max.	2times
Frequency Stability Slope		
vs. Temperature(-20 ~ +70℃)	±0.2ppm/℃ max.	Every +2℃
Initial Frequency Tolerance	±1.0ppm max.	+25℃
Startup Time	2ms max.	more than 90% of final amplitude
Voltage Control Range	±9.0 ~ ±15.0ppm	+1.5 ± 1.0V
Phase Noise	-90dBc/Hz typ. -114dBc/Hz typ. -135dBc/Hz typ. -146dBc/Hz typ. -146dBc/Hz typ.	10Hz offset 100Hz offset 1KHz offset 10KHz offset 100KHz offset

Notes:

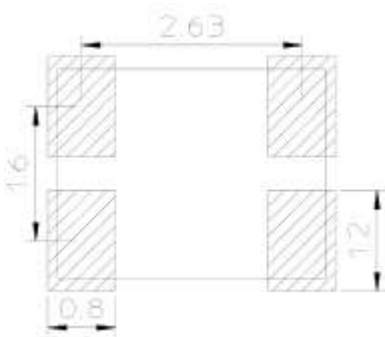
- Please leave after reflow in 2h or more at room ambient

## 2. Outline Specification

Unit: mm

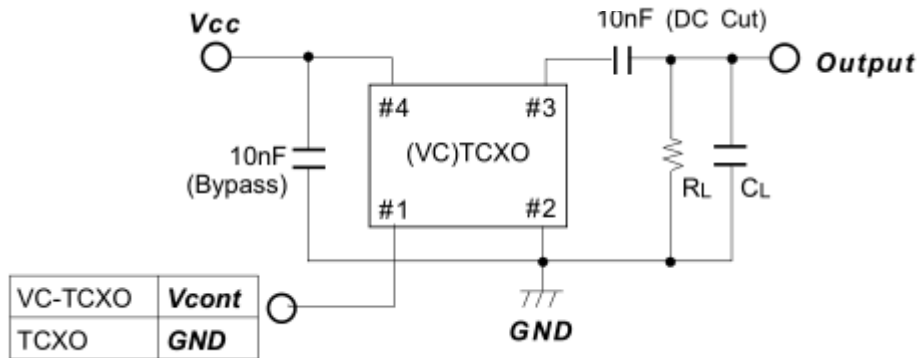


### Recommended Land Pattern



Pad No.	Connection	
	TCXO	VC-TCXO
#1	GND	Vcont
#2	GND	GND
#3	Output	Output
#4	Vcc	Vcc

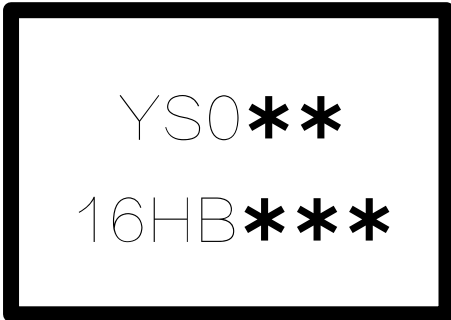
### Measurement Circuit



#### Notes:

- Please connect a bypass capacitor closely to Vcc Pad.
- Load capacitance (CL) includes probe and test board capacitance.

### 3. Marking Specification



- Mark-1:  $\frac{YS0^{①} **^{②③④⑤}}$
- Mark-2:  $\frac{16HB^{①②③} ***^{④⑤⑥⑦}}$

Mark-1 (X-TAL Marking)		
Digit order	Symbol	Explanation
1	Y	Logo
2~3	S0	Frequency
4~5	**	Production Week
Mark-2 (TCXO Marking)		
Digit order	Symbol	Explanation
1~3	16H	Frequency
4	B	Serial Number(A~Z)
5~7	***	Production Year + Month + Day

X-TAL Frequency: <b>S0</b>					
Symbol	Frequency [MHz]	Symbol	Frequency [MHz]	Symbol	Frequency [MHz]
A0	26.000000	E0	16.367000	I0	24.576000
B0	19.200000	F0	16.384000	J0	20.480000
C0	40.000000	G0	27.456000	Q0	12.800000
D0	16.368000	H0	38.400000	<b>S0</b>	<b>16.800000</b>
TCXO Frequency: <b>16H</b>					
Symbol	Frequency [MHz]	Symbol	Frequency [MHz]	Symbol	Frequency [MHz]
16B	16.367667	13A	13.000000	40A	40.000000
16C	16.367000	19B	19.200000	38B	38.400000
16D	16.367600	26A	26.000000	<b>16H</b>	<b>16.800000</b>
16E	16.368000	32A	32.000000		
16F	16.369000	32B	32.768000		