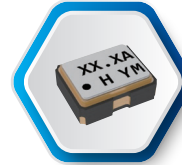


HSB221S SERIES

CRYSTAL OSCILLATOR, TCXO

 RoHS Compliant Pb Free


STANDARD SPECIFICATION

Items		Parameter
Frequency Range		13 ~ 52MHz
Supply Voltage		1.8 ~ 3.3 V
Current Consumption		1.5 mA Max. (f \leq 26MHz) / +2.0mA Max. (26 \leq f \leq 52MHz)
Harmonics		-5 dBc Max.
Output Level		0.8 V _{p-p} Min.
Output Load		10K Ω // 10pF
Frequency Stability	Tolerance	± 1.5 ppm Max. (After 2 times reflow)
	vs Temperature	± 0.5 ppm Max. / -30 ~ +85°C
	vs Slope	± 0.2 ppm/°C Max. (-30 ~ +85°C)
	vs Supply Voltage	± 0.2 ppm Max. (v _{dd} \pm 5%)
	vs Load Variation	± 0.2 ppm Max. (10K Ω //10pF \pm 10%)
	vs Aging	± 1 ppm / year
Start Up		2.0 ms Max.

PHASE NOISE (FREQUENCY vs OFFSET)

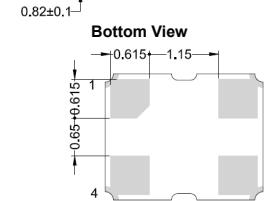
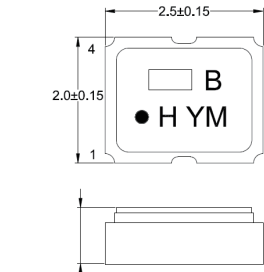
	1kHz	10kHz	100kHz
f \leq 26MHz	-130 dBc/ Hz	-150 dBc/ Hz	-155 dBc/ Hz
26MHz<f \leq 40MHz	-130 dBc / Hz	-150 dBc / Hz	-155 dBc / Hz
40MHz<f \leq 52MHz	-125 dBc / Hz	-145 dBc / Hz	-150 dBc / Hz

*For other specification, please contact us.

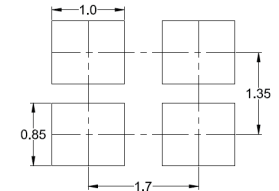
Packing Unit : 3,000pcs/Reel.

DIMENSION

Unit:mm



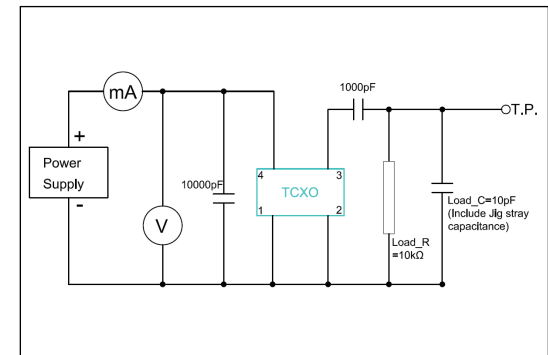
Recommended Land Pattern Tolerance: ± 0.1



Pin Connections	
1	GND or NC
2	GND
3	Output
4	V _{dd}

TEST CIRCUIT AND OUTPUT WAVEFORM

Measurement Circuit


 Actual Size