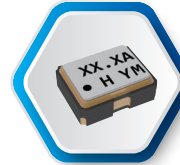


HSA221S SERIES

CRYSTAL OSCILLATOR, VC-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 _o ≤26MHz)/ +2.0mA Max.(26<f _o ≤52MHz)
Harmonics		- 5 dBc Max.
Output Level		0.8 Vp-p Min.
Output Load		10KΩ// 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} ±5%)
	vs Load Variation	± 0.2 ppm Max. (10KΩ//10pF±10%)
Frequency Control	vs Aging	± 1ppm / year
	Control Sensitivity	±9.0 ~ ± 15ppm / V _{cont} =+1.4V±1V@V _{dd} =2.8V
Start Up		2.0 ms Max.

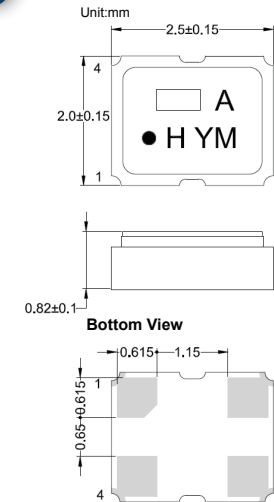
PHASE NOISE (FREQUENCY vs OFFSET)

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

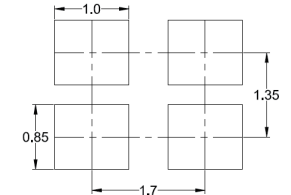
* For other specification, please contact us.

Packing Unit : 3,000pcs/Reel.

DIMENSION



Recommended Land Pattern Tolerance: ±0.1

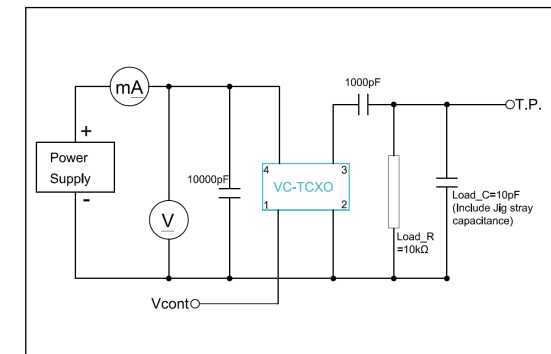


Pin Connections

1	V _{cont}
2	GND
3	Output
4	V _{dd}

TEST CIRCUIT AND OUTPUT WAVEFORM

Measurement Circuit


 Actual Size