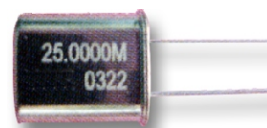


## X49U, X49T



- Excellent frequency-temperature characteristics extending across a wide temperature range.
- Low cost.
- High quality quartz crystal units for PC, Micro-processor, communication.

Table 1 Specifications

Parameter	X49U	X49T
Frequency Range	1.8432~200MHz	
Vibration Mode	AT Cut/Fund, 3rd, 5th, 7th Over Tune	
Frequency Tolerance(@25°C ±2°C)	±5~±10ppm	
Frequency Stability vs Operation	See Table 2	
Temperature Range		
Resonance Resistance	See Table 3	
Shunt Capacitance	7pF max	
Load Capacitance	6pF ~ ∞, Series	
Drive Level	2uW ~ 1000uW, 500uW typical	
Insulation Resistance	500MΩ @DC100V	
Aging	±2ppm/year	
Package	49U	49T
Package Option	-MJ: Mounted & Jacket -T: Tape and Reel	TW: With Top Wire

Table 2 Frequency Stability vs Operation Temperature Range(Ref to 25°C) & Option Code

	±3ppm	±5ppm	±10ppm	±20ppm
0~50°C	A03	A05	A10	A20
-10~60°C	B03	B05	B10	B20
-20~70°C		C05	C10	C20
-30~75°C			D10	D20
-40~85°C				E20

Table 3 Resonance Resistance

Frequency	Vib. Mode	X49U/T
1.8~3.5MHz	Fund.	400Ω
3.5~5MHz	Fund.	100Ω
5~10MHz	Fund.	40Ω
10~50MHz	Fund	25Ω
35~120MHz	3rd O.T.	40Ω
75~200MHz	5th O.T.	70Ω
100~200MHz	7th O.T.	100Ω

### Thru-Hole Crystals

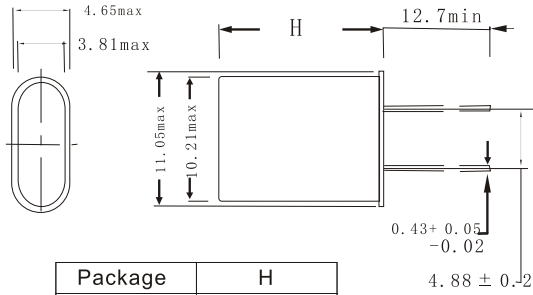
### Part Numbering Key

Sample Part Numbers  
[X49U-20P25-FB25-TW](#)  
 @32.768MHz  
[X49T-18P50-3C50-T](#)  
 @45.545MHz

SERIES	CIRCUIT CONDITION	FREQ. TOLERANCE @25°C	MODE	FREQ. STABILITY vs. TEMP	PACKAGE	PACKAGE OPTIONS	FREQUENCY
X49U X49T	S=Series 10p, 12p 15p, 20p 30p, 32p extra	±5~±100ppm	F=Fund. 3=3rd O.T. 5=5th O.T. 7=7th O.T.	See Table 2	49U 49T	See Table 1	
X49U X49T	20p 18p	25 50	F 3	B25 C50		-TW -T	32.768MHz 45.545MHz

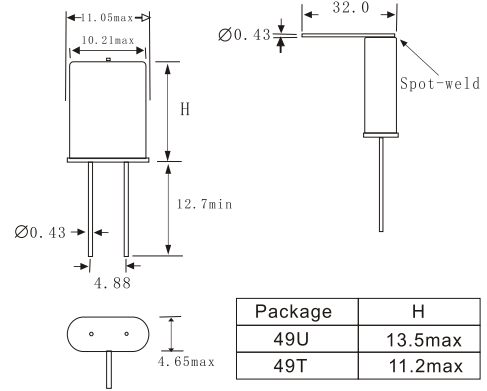
### Package 49U, 49T

Unit: mm



Package	H
49U	13.5max
49T	11.2max

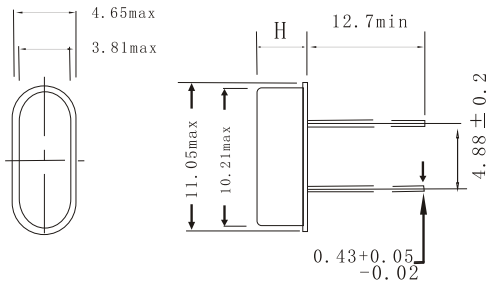
### Package 49U,49T with Top Wire (-TW) Unit:mm



Package	H
49U	13.5max
49T	11.2max

### Package 49S1,49S2

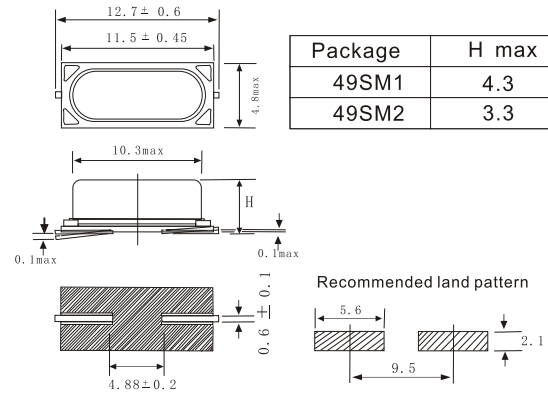
Unit:mm



Package	H
49S1	3.5max
49S2	2.5max

### Package 49SM1,49SM2

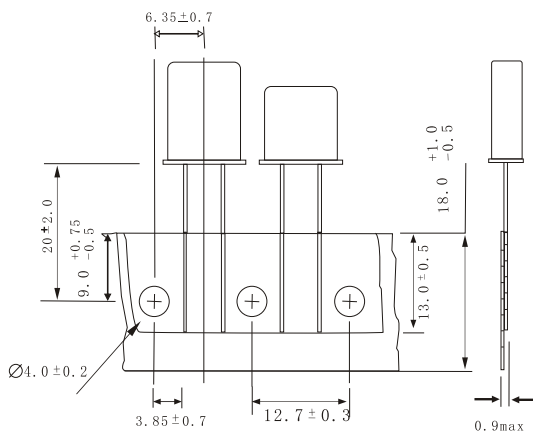
Unit:mm



Package	H max
49SM1	4.3
49SM2	3.3

### Tape 49U,49T,49S1,49S2

Unit:mm



### Tape,49SM1,49SM2

Unit:mm

