



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

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## Product Specifications Approval Sheet

Product Description: Crystal Unit HC49US 12MHz

TST Part No.: TZ1733A

Customer Part No.: \_\_\_\_\_

|                             |
|-----------------------------|
| Customer signature required |
| Company: _____              |
| Division: _____             |
| Approved by : _____         |
| Date: _____                 |

Checked by: \_\_\_\_\_ Ginger Huang *Ginger Huang*

Approved by: \_\_\_\_\_ Kelly Huang *Kelly Huang*

Date: \_\_\_\_\_ 08/29/2011

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



**TAI-SAW TECHNOLOGY CO., LTD.**  
**HC49US 12MHz Crystal Unit**

MODEL NO.: TZ1733A

REV. NO.: 1.0

**Revise:**

| Rev. | Rev. Page | Rev. Account    | Date      | Ref. No. | Reviser      |
|------|-----------|-----------------|-----------|----------|--------------|
| 1    | N/A       | Initial release | 08/29/11' | N/A      | Ginger Huang |



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## HC49US 12MHz Crystal Unit

MODEL NO.: TZ1733A

REV. NO.: 1.0

### Features:

- Surface Mount Seam Weld Package
- Good Frequency Perturbation and Stability over temperature

RoHS Compliant  
Lead free  
Lead-free soldering

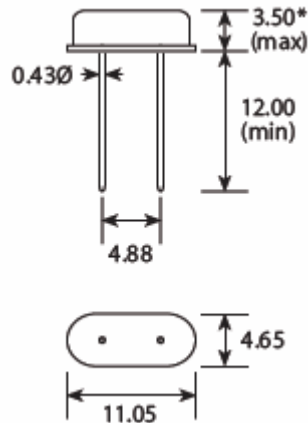
### Description and Applications:

HC49US crystal unit for use in wireless telecommunications devices

### Electrical Specifications:

| TZ1733A                                              | Specification                             |
|------------------------------------------------------|-------------------------------------------|
| Nominal Frequency                                    | 12.000000 MHz                             |
| Mode of Oscillation                                  | Fundamental                               |
| Storage Temperature Range                            | -40°C~+85°C                               |
| Operating Temperature Range                          | -10°C~+70°C                               |
| Frequency Stability over Operating Temperature Range | +/-30 ppm (referred to the value at 25°C) |
| Frequency Make Tolerance (FL)                        | +/-30 ppm @ 25°C +/- 3°C                  |
| Equivalent Series Resistance (ESR)                   | 50 Ω max.                                 |
| Nominal Drive Level                                  | 100 uW max                                |
| Shunt Capacitance (Co)                               | 7.0 pF max                                |
| Load Capacitance (CL)                                | 20 pF                                     |
| Aging                                                | +/-5.0 ppm/year                           |
| Insulation Resistance                                | 500 MΩ min./DC 100V                       |
| Marking                                              | Laser marking                             |

## Mechanical Dimensions (mm):



## Marking:

Line 1: Frequency (12.000)

Line 2: TST Logo + Date Code ("Z" stand for product code and "D" for date code) + Traceability Code (XX)



## Product Code Table

| Year         | 2008<br>2012 | 2009<br>2013 | 2010<br>2014 | 2011<br>2015 |
|--------------|--------------|--------------|--------------|--------------|
| Product Code | <u>z</u>     | <u>Z</u>     | <u>z</u>     | <u>Z</u>     |

## Date Code Table

| WK01 | WK02 | WK03 | WK04 | WK05 | WK06 | WK07 | WK08 | WK09 | WK10 | WK11 | WK12 | WK13 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| A    | B    | C    | D    | E    | F    | G    | H    | I    | J    | K    | L    | M    |
| WK14 | WK15 | WK16 | WK17 | WK18 | WK19 | WK20 | WK21 | WK22 | WK23 | WK24 | WK25 | WK26 |
| N    | O    | P    | Q    | R    | S    | T    | U    | V    | W    | X    | Y    | Z    |
| WK27 | WK28 | WK29 | WK30 | WK31 | WK32 | WK33 | WK34 | WK35 | WK36 | WK37 | WK38 | WK39 |
| a    | b    | c    | d    | e    | f    | g    | h    | i    | j    | k    | l    | m    |
| WK40 | WK41 | WK42 | WK43 | WK44 | WK45 | WK46 | WK47 | WK48 | WK49 | WK50 | WK51 | WK52 |
| n    | o    | p    | q    | r    | s    | t    | u    | v    | w    | x    | y    | z    |