

SURFACE MOUNT TUNING FORK CRYSTAL UNIT



SERIES :

OS 147

RoHS
Compliant

Specifications

Item	Specifications
Nominal Frequency	32.768 kHz
Frequency Tolerance	±20PPM, ±50PPM
Turnover Temperature	±25°C ±5°C
Temperature Coefficient	$(-3.5 \pm 1.0) \times 1.0^{-8}/^{\circ}\text{C}^2$
Load Capacitance	7pF or 12.5pF
Equivalent Series Resistance	65 KOHMS MAXIMUM
Drive Level	0.1μW TYP, 1μW MAX.
Shunt Capacitance	0.8pF TYPICAL
Aging(First Year)	±3PPM MAXIMUM(+25°C±3°C, First year)
Operating temperature range	-40°C to +85°C
Storage temperature range	-55°C to +125°C
Reflow Conditions	260°C MAX for 5sec. MAX (IR Reflow)

Features

- ▶ Suitable for time of day clock applications
- ▶ 1.4mm height Low profile
- ▶ Excellent heat resistance and shock
- ▶ Excellent for automatic and high density surface mounting

Packing

- ▶ 330mm Reel diameter
- ▶ 16mm Tape width, 8mm pitch
- ▶ 3000 Pieces per reel

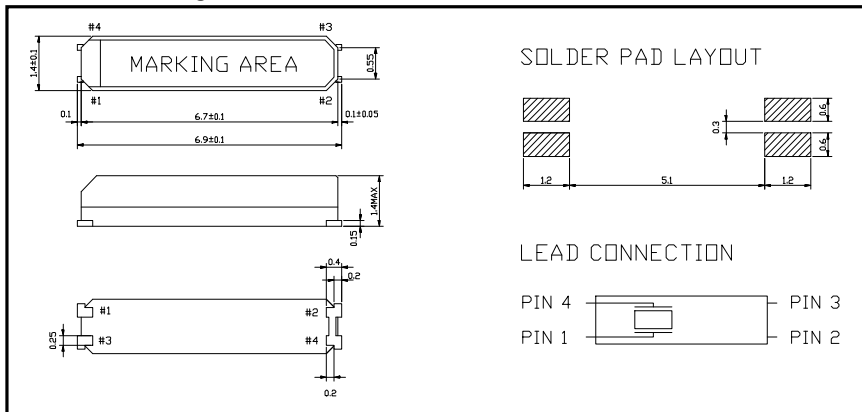
Part Numbering System

Holder Type	Frequency	Load Capacitance	Tape & Reel
OS147	IN kHz	7pF or 12.5pF	TR

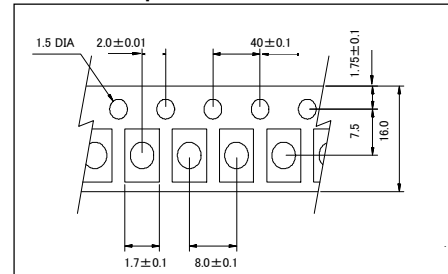
Example: OS147-32.768-7-TR

Outline Drawing

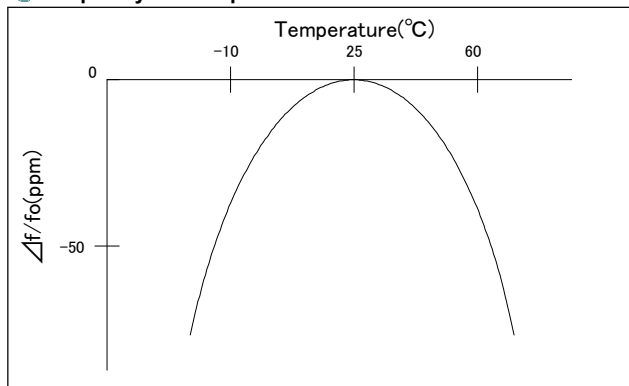
Unit : mm



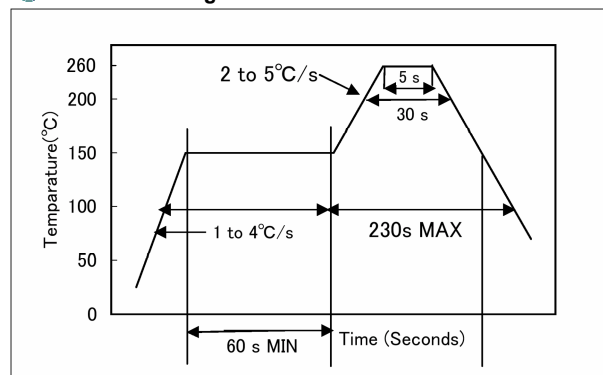
Carrier Tape Dimensions



Frequency VS. Temperature Curve



Reflow Soldering Profile



5F daVinci Shin-Yokohama131Bldg., 1-3-1, Shin-Yokohama, Kohoku-ku, Yokohama-city, Kanagawa 222-0033, Japan

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SURFACE MOUNT TUNING FORK CRYSTAL UNIT



SERIES :

OS 156

RoHS
Compliant

Specifications

Item	Specifications
Nominal Frequency	32.768 kHz
Frequency Tolerance	±10PPM, ±20PPM, ±50PPM (Can be used in high accurate products)
Turnover Temperature	+25°C ±5°C
Temperature Coefficient	$(-3.5 \pm 1.0) \times 10^{-8} / ^\circ\text{C}^2$
Load Capacitance	7.0pF to 12.5pF
Equivalent Series Resistance	55 kOHMS MAXIMUM
Drive Level	0.1μW TYP, 1μW MAX.
Shunt Capacitance	0.95pF TYPICAL
Aging(First Year)	±3PPM MAXIAMUM(+25°C±3°C, First year)
Operating temprature range	-40°C to +85°C
Storage temprature range	-55°C to +125°C
Reflow Conditions	230°C MAX for 20sec. x2 items (IR Reflow)

Features

- ▶ Suitable for time of day clock applications
- ▶ 1.6mm height Low profile
- ▶ Excellent heat resistance and shock
- ▶ Excellent for automatic and high density surface mounting

Packing

- ▶ 330mm Reel diameter
- ▶ 16mm Tape width, 4mm pitch
- ▶ Quantity : 3000 Pieces per reel

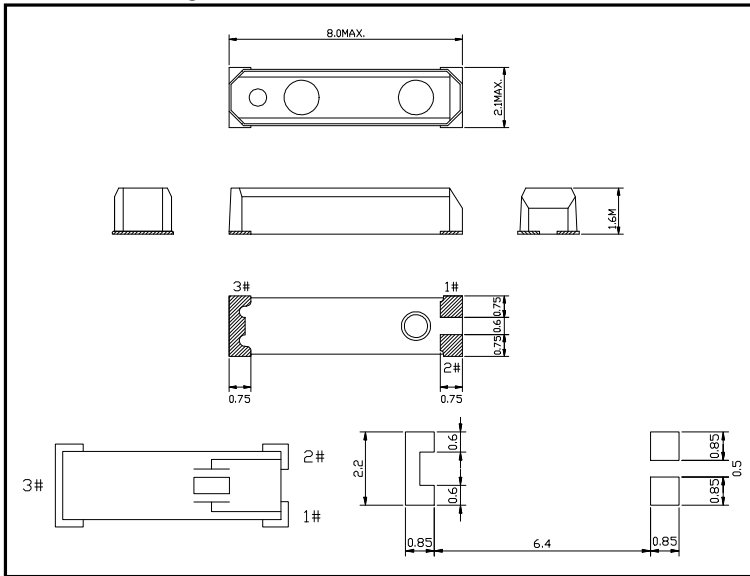
Part Numbering System

Holder Type	Frequency	Load Capacitance	Tape & Reel
OS156	IN kHz	12.5pF	TR

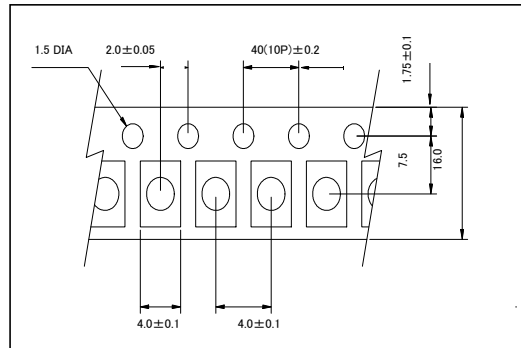
Example: OS156-32.768-12.5-TR

Outline Drawing

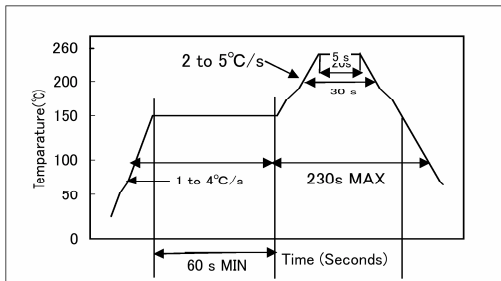
Unit : mm



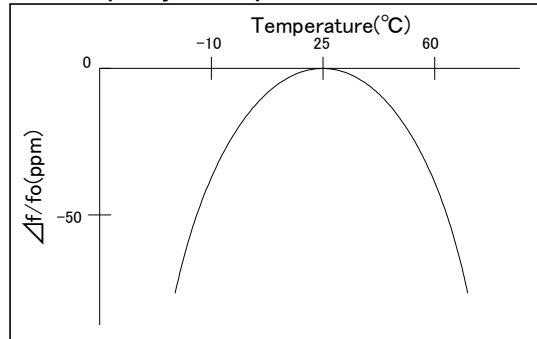
Carrier Tape Dimensions



Reflow Soldering Profile



Frequency VS. Temperature Curve



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SURFACE MOUNT TUNING FORK CRYSTAL UNIT



SERIES :

OS 3215

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	32.768kHz
Frequency Tolerance	±20PPM,±50PPM
Turnover Temperature	+25°C ±5°C
Temperature Coefficient	$(-3.5 \pm 1.0) \times 10^{-8} / ^\circ\text{C}^2$
Operating Temperature	-40°C~+85°C
Storage Temperature	-55°C~+125°C
Equivalent Series Resistance	80kΩ MAX.
Load Capacitance	7.0pF,9.0pF,12.5pF
Maximum Drive Level	1.0μW MAX.
Recommand Drive Level	0.1μW MAX.
Shunt Capacitance	1.6pF TYP.
Aging	±3PPM /First year
Reflow Conditions	260°C MAXIMUM for 5sec.

Features

- ▶ Ultra-thin 0.75mm max high.
- ▶ Ultra minmum package 3.2mm x1.5mm
- ▶ Excellent heat resistance and shock
- ▶ Lead free

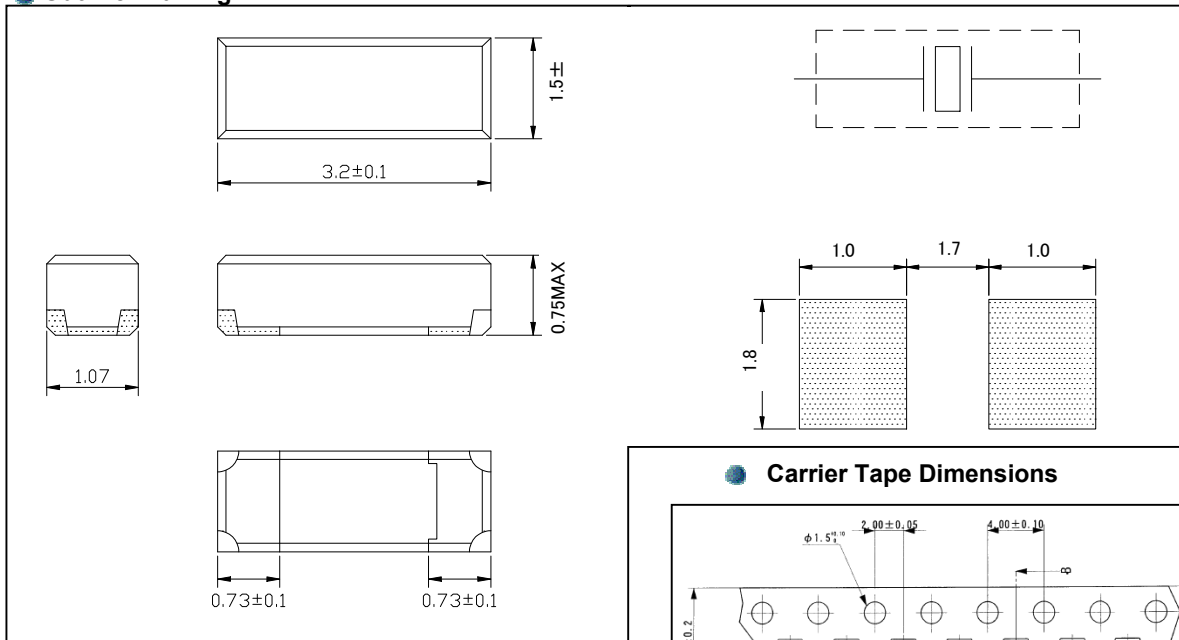
Packing

- ▶ 180mm Reel diameter
- ▶ 8mm Tape width,4mm pitch
- ▶ 3,000 Pieces per reel

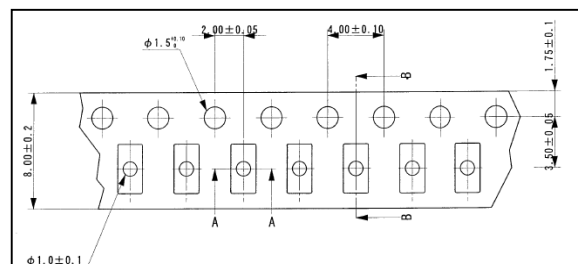
Holder Type	Frequency	Load Capacitance
OS3215	IN kHz	9pF,12.5pF

Example : OS3215-32.768kHz-12.5pF

Outline Drawing



Carrier Tape Dimensions



5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama, Kohoku-ku, Yokohama-city, Kanagawa, 222-0033, Japan
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SURFACE MOUNT TUNING FORK CRYSTAL UNIT

OMCG CO., LTD

SERIES :

OS 4115

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	32.768kHz
Frequency Tolerance	±20PPM
Temperature Coefficient	-0.034±0.006PPM/°C ² MAX
Operating Temperature	-40°C~+85°C
Storage Temperature	-55°C~+125°C
Series Resistance	70kΩ MAX.
Load Capacitance	7.0pF,9.0pF,12.5pF
Drive Level	1.0μW MAX.
Peak Temperature(Frequency)	25°C±5°C
Shunt Capacitance	1.05pF TYP

Features

- ▶ Ultra-thin 0.9mm max high.
- ▶ Compact package 4.1mm x1.5mm

Packing

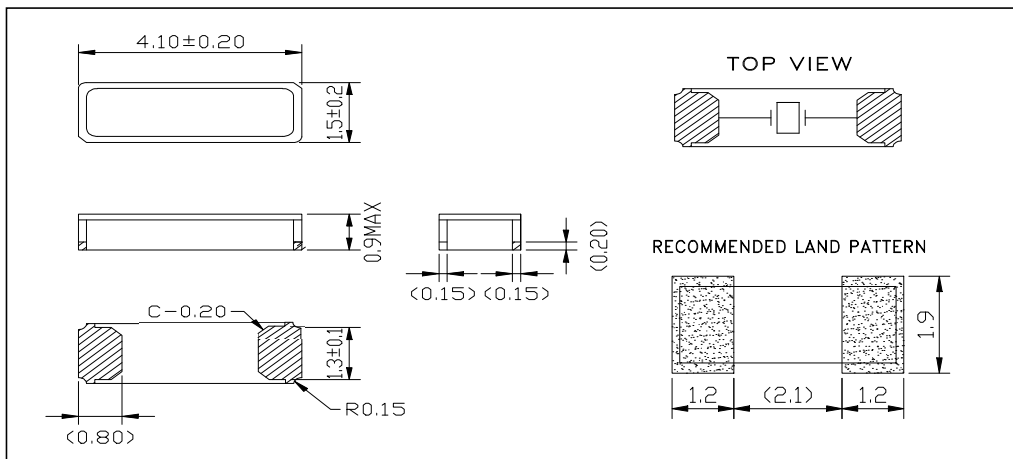
- ▶ 178mm Reel diameter
- ▶ 12mm Tape width,4mm pitch

Holder Type	Frequency	Load Capacitance
OS4115	IN kHz	9pF,12.5pF

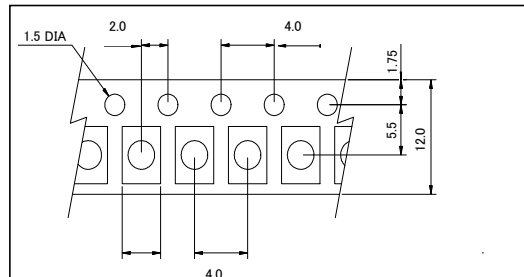
Example : OS4115-32.768kHz-9pF

Outline Drawing

Unit:mm



Carrier Tape Dimensions



OMCG CO., LTD

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SURFACE MOUNT CRYSTAL UNIT

SERIES :

OS5019

RoHS
Compliant

Specifications

Item	Specifications	
Nominal Frequency	32.768kHz	32.00kHz~100.000kHz
Frequency Tolerance(at 25°C)	$\pm 20 \times 10^{-5}$	$\pm 50 \times 10^{-5}, \pm 100 \times 10^{-5}$
Drive Level	0.5μW max.	
Peak Temperature	+25°C±5°C	
Temperature Coefficient	-0.04x10 ⁻⁹ /°C ² MAX	
Load Capacitance	7pF, 12.5pF	
Series Resistance	65kΩ MAX.	70kΩ MAX~25kΩ MAX.
Motional Capacitance	1.7fF TYP.	2.5fF~0.7fF
Shunt Capacitance	1.3fF TYP.	1.6fF~0.7fF
Insulation Resistance	500MΩ MIN.	
Aging	$\pm 3 \times 10^{-9}$ /Year MAX (Ta=+25°C±3°C:First year)	
Operating Temperature Range	-40°C~+85°C	
Storage Temperature Range	-55°C~+125°C	
Shock Resistance※	$\pm 8 \times 10^{-5}$ MAX.	

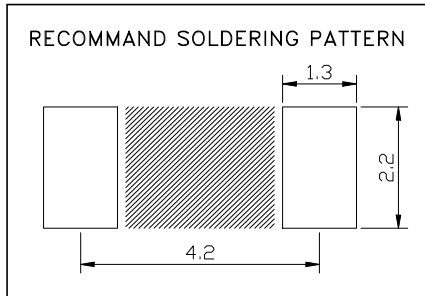
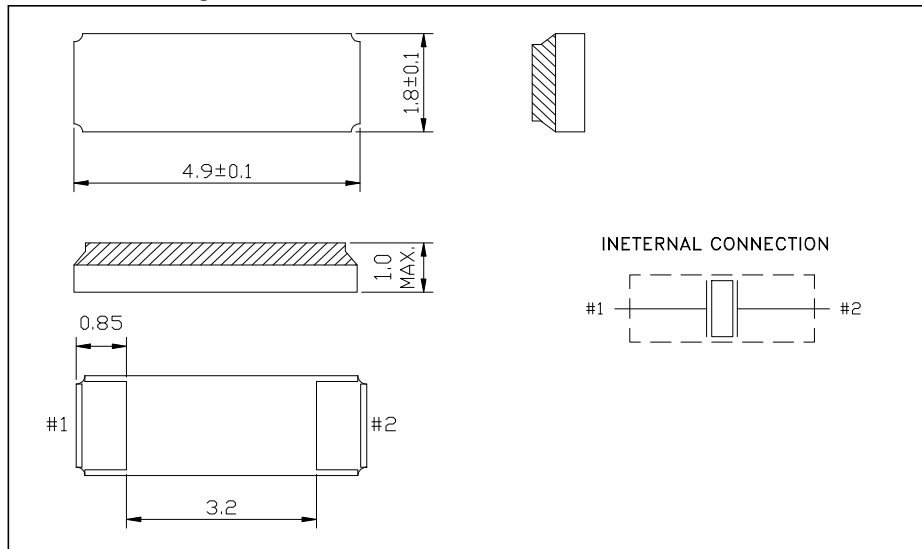
Features

- ▶ Ultra miniature SMD package
- ▶ Excellent environmental capability

※10 drops on a concret from 1500mm height with x3 directions.

Outline Drawing

Unit:mm



SURFACE MOUNT TUNING FORK CRYSTAL UNIT

SERIES :

OS 1A,1B,2C,2D

Specifications

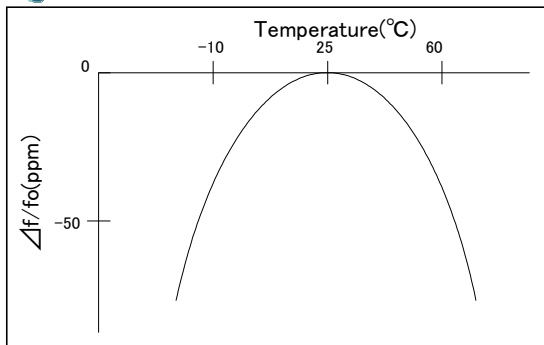
RoHS Compliant

Item	Specifications
Nominal Frequency	32.768 kHz / 32 Khz~200kHz
Frequency Tolerance	±20PPM, ±50PPM, ±100PPM
Turnover Temperature	+25°C ±5°C / +25°C ±8°C
Temperature Coefficient	$(-3.5 \pm 0.8) \times 10^{-8} / ^\circ\text{C}^2$
Load Capacitance	6.0pF to 12.5pF
Equivalent Series Resistance	50 KOHMS MAXIMUM
Drive Level	0.1µW TYP, 1µW MAX.
Shunt Capacitance	1.0pF TYPICAL / 0.95pF TYPICAL
Aging(First Year)	±5PPM MAXIAMUM(+25°C±3°C, First year)
Operating temperature range	-40°C to +85°C
Storage temperature range	-55°C to +125°C
Reflow Conditions	230°C MAX for 20sec. MAX X2 items (IR Reflow)

Standard frequencies (kHz)

32.000
32.768
38.400
40.000
75.000
76.800
96.000
100.000
106.000
130.000
150.000
153.600
200.000

Frequency VS. Temperature Curve



Features

- ▶ Suitable for time of day clock applications
- ▶ Low frequency range
- ▶ Excellent heat resistance and shock
- ▶ Excellent for automatic and high density surface mounting

Packing

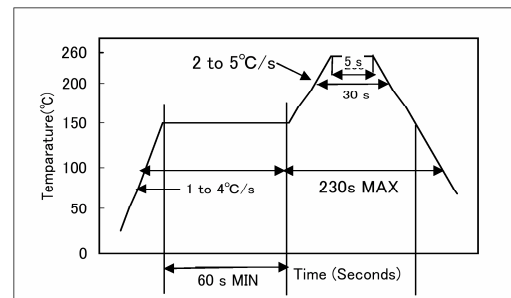
- ▶ 330mm Reel diameter
- ▶ 16mm Tape width, 4mm pitch
- ▶ Quantity : 1A,1B 2,000pieces per reel
2C,2D 3,000 Pieces per reel

Part Numbering System

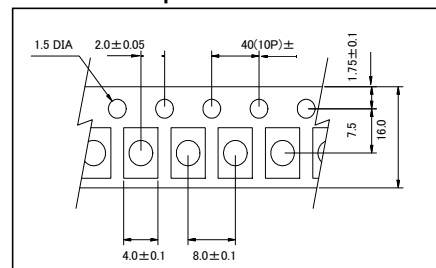
Holder Type	Type	Load Capacitance	Frequency	Tape & Reel
OS	1A 1B 2C 2D	12.5pF	IN kHz	TR

Example: OS2C-32.768-12.5-TR

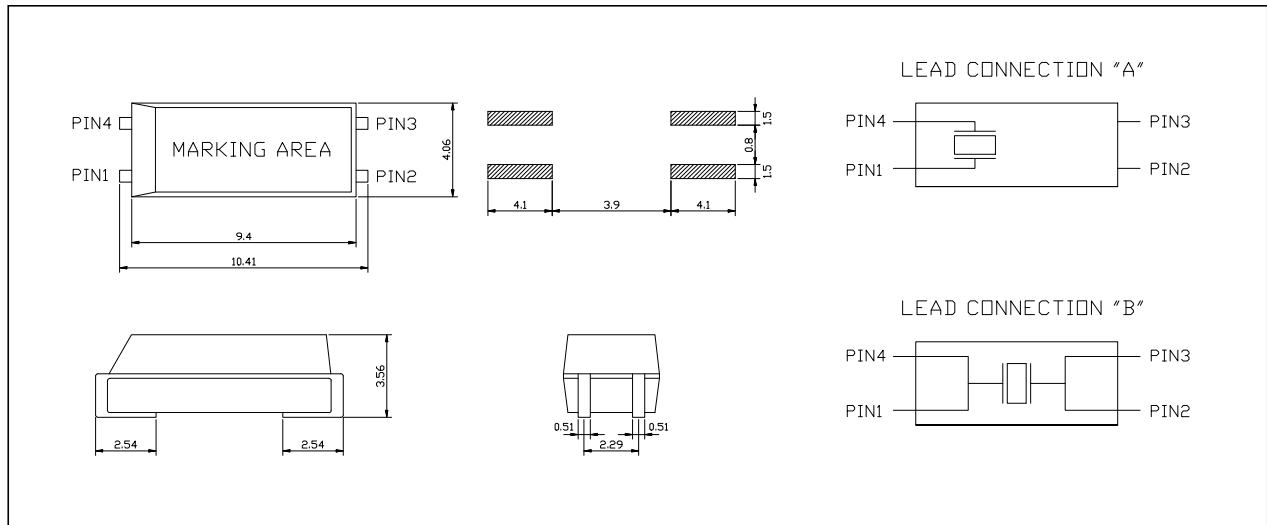
Reflow Soldering Profile



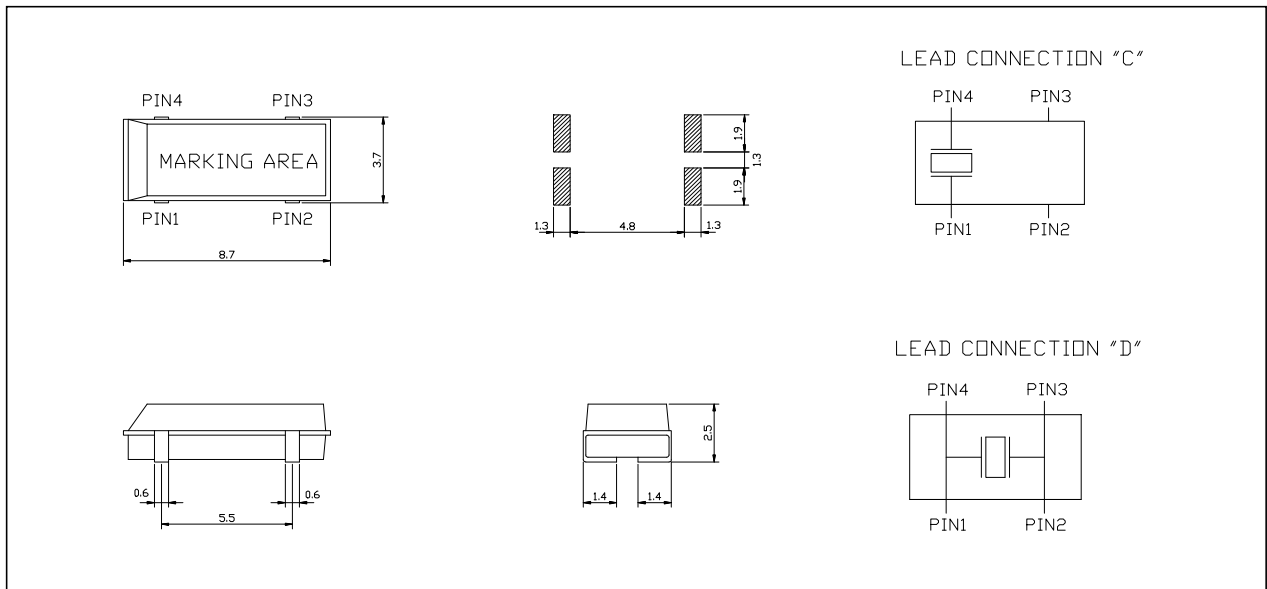
Carrier Tape Dimensions



※OS 1A,1B



※OS 2C,2D



SURFACE MOUNT TUNING FORK CRYSTAL UNIT

OMCG CO., LTD

SERIES :

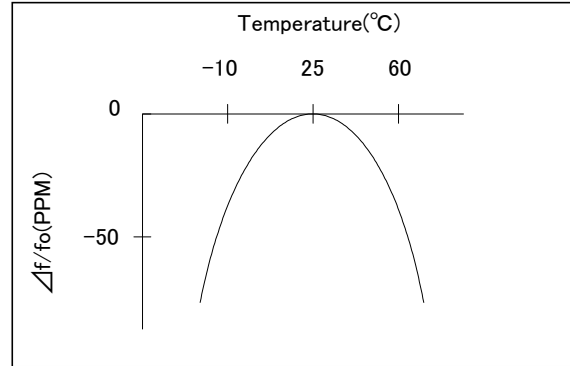
OM200S

RoHS
Compliant

● Specifications

Item	Specifications
Nominal Frequency	32.768kHz
Turnover Temperature	25±5°C
Frequency Tolerance	±20X10 ⁻⁶ at 25°C
Frequency Temperature Coefficient	-0.034±0.006PPM/°C ²
Equivalent Series Resistance	50kΩ
Load Capacitance	12.5pF TYP.
Motional Capacitance	0.003pF TYP
Shunt Capacitance	1.35pF TYP
Capacitance Ratio	450 TYP
Insulation Resistance	500MΩ MINIMUM,DC100V±15V
Drive Level	1 μW MAXIMUM
Aging	±3PPM MAX/First year at 25±3°C
Shock Resistance	±5X10 ⁶
Storage Temperature Range	-55~125°C
Operating Temperature Range	-40~+85°C

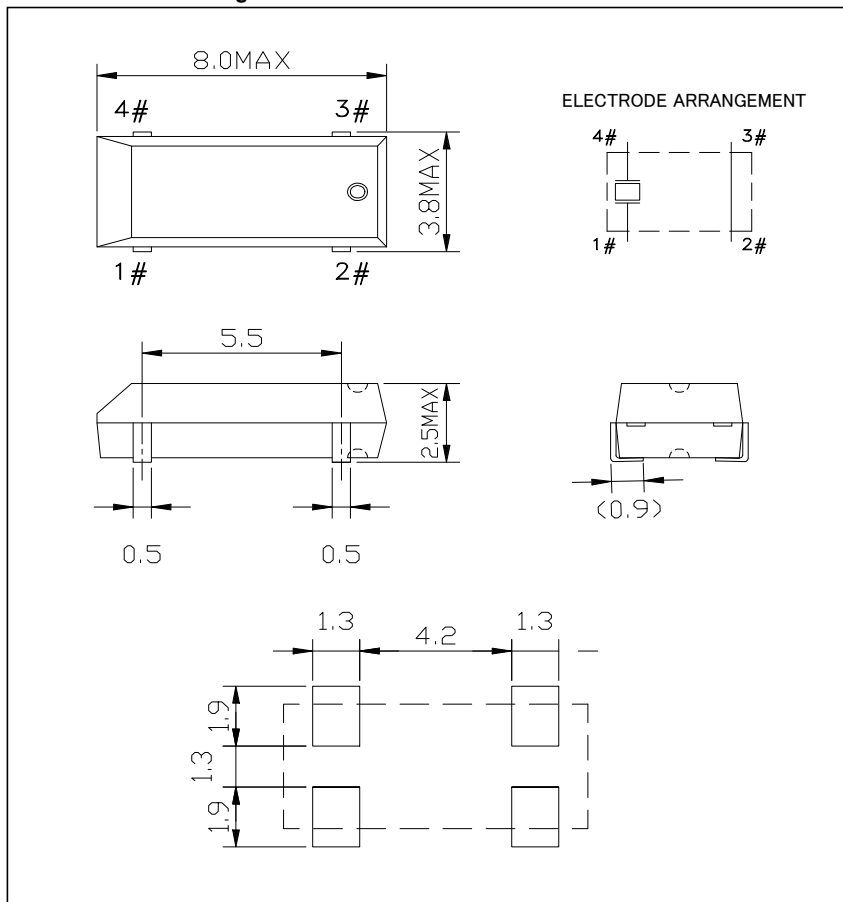
● Frequency VS. Temperature Curve



※Three drops on a hard board from 750mm or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions

● Outline Drawing

Unit:mm



OMCG CO., LTD

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TUNING FORK CRYSTAL UNIT

OMCG CO., LTD

SERIES :

M26, M38, M145

● **Features**

- ▶ Miniature Size
- ▶ Excellent shock and environmental characteristics

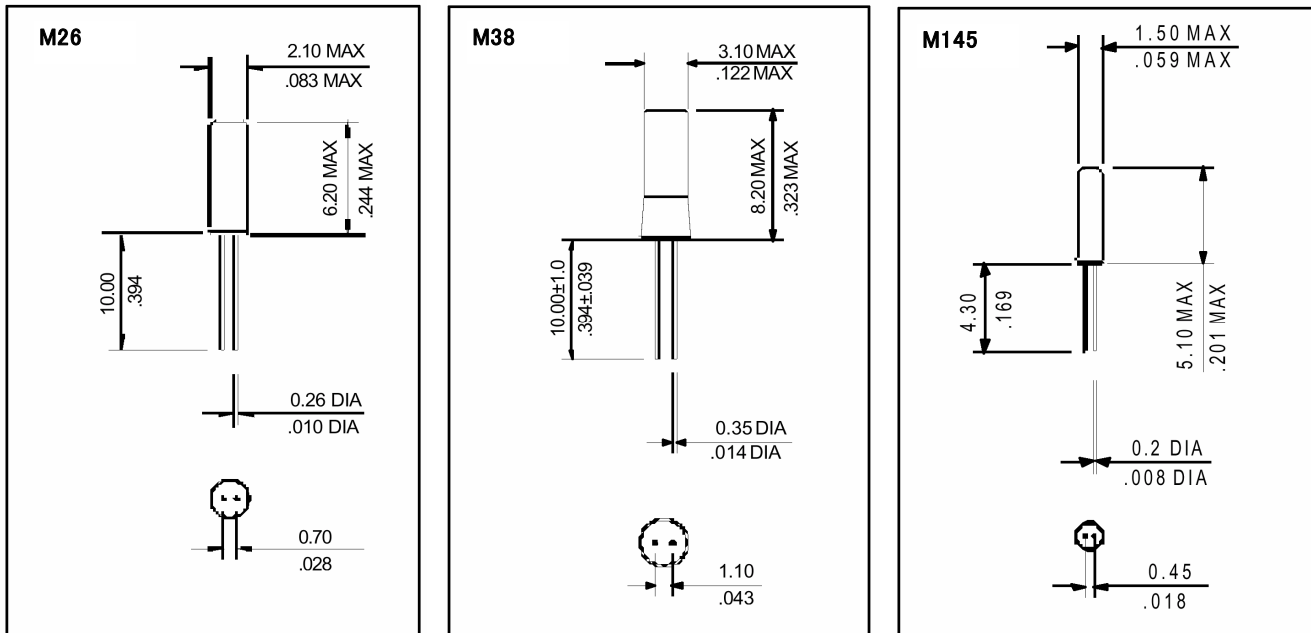
RoHS Compliant

● **Specifications**

Item	Specifications			
	M26	M38	M145	M26, M38
Nominal Frequency	32.768kHz			30.0~153.6kHz
Frequency Tolerance	±5, ±10, ±20PPM			
Turnover Temperature	+25°C ±5°C			
Shunt Capacitance	1.35pF TYP.	1.6pF TYP.	1.0pF TYP.	0.8~1.7pF TYP.
Load Capacitance	6 or 12.5pF		8.0pF	6 or 12.5pF
Insulation Resistance	500M Ω MIN			
Drive Level	1.0μW TYP.			
Operating Temperature Range	-20°C ~ +60°C Standard, -40°C ~ +85°C Extended			
Storage Temperature Range	-40°C ~ +85°C			
Motional Capacitance	0.0030pF TYP.	0.0035pF TYP.	0.0025pF TYP.	0.001pF~0.004pF TYP.
Parabolic Curvature Constant	-0.034PPM/C ² at Δf/f=K(To-T) ² (K:Parabolic Curvature Constant)			
Equivalent Series Resistance	35k Ω MAX.		40k Ω MAX.	30k Ω~50k Ω MAX.
Capacitance Ratio	450 TYP.	460 TYP.	400 TYP.	425~800 TYP.
Aging	±3PPM MAX/First year	±3PPM MAX/First year	±3PPM MAX/First year	±5PPM MAX/First year
Quality Factor	70000 TYP.	90000 TYP.	80000 TYP.	As Frequency & Package Spec.
Shock Resistance	Three drops on a hard board from 750mm or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions			

● **Outline Drawing**

Unit : mm



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SURFACE MOUNT TUNING FORK CRYSTAL UNIT

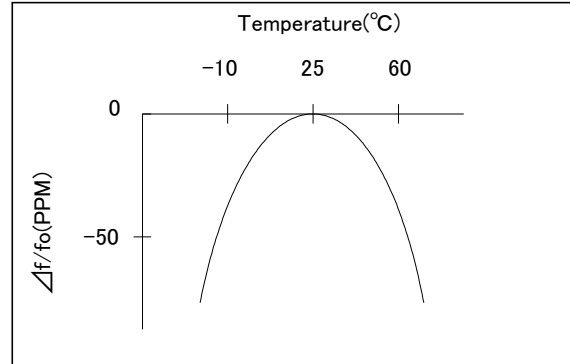
SERIES :

OTR206

● Specifications

Item	Specifications
Nominal Frequency	30~165kHz
Turnover Temperature	25±5°C
Frequency Tolerance	±30PPM at 25°C
Frequency Temperature Coefficient	-0.034±0.006PPM/°C ²
Equivalent Series Resistance	35kΩ~50kΩ at 25°C
Load Capacitance	12.5pF TYP. or as per request
Motional Capacitance	0.001pF TYP ~0.004pF TYP.
Shunt Capacitance	0.8pF ~1.7pF TYP
Capacitance Ratio	425~800 TYP
Insulation Resistance	500MΩ MINIMUM,DC100V±15V
Drive Level	1 μ W MAXIMUM
Aging	±5PPM MAX/First year at 25±3°C
Shock Resistance ※	±5PPM MAX
Storage Temperature Range	-55~+125°C
Operating Temperature Range	-40~+85°C
Sealing	1x10 ⁻² μ Pa·m ³ /s MAX.

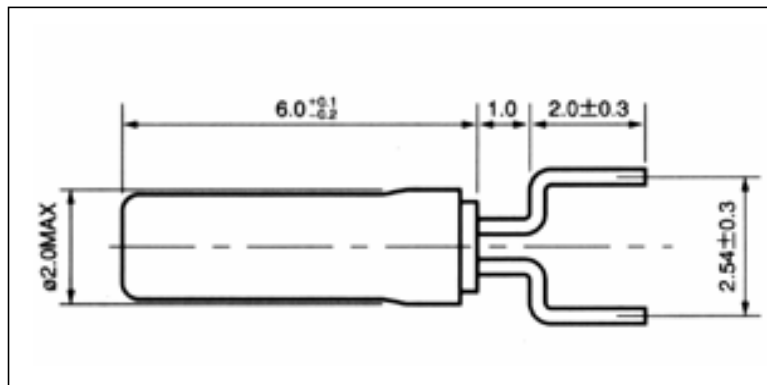
● Frequency VS. Temperature Curve



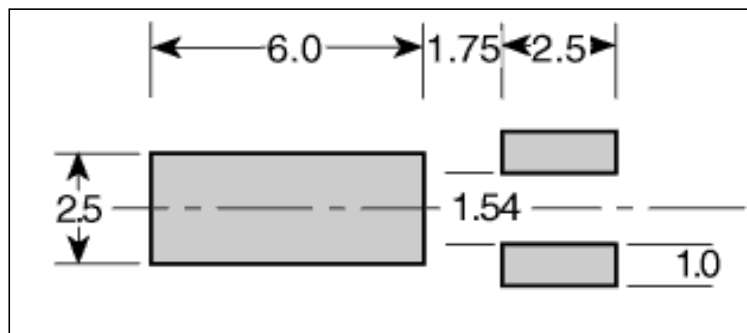
※Three drops on a hard board from 750mm or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions

● Outline Drawing

Unit:mm



<RECOMMENDED SOLDERING PATTERN>



SURFACE MOUNT TUNING FORK CRYSTAL UNIT

OMCG CO., LTD

SERIES :

OTFH 206

Specifications

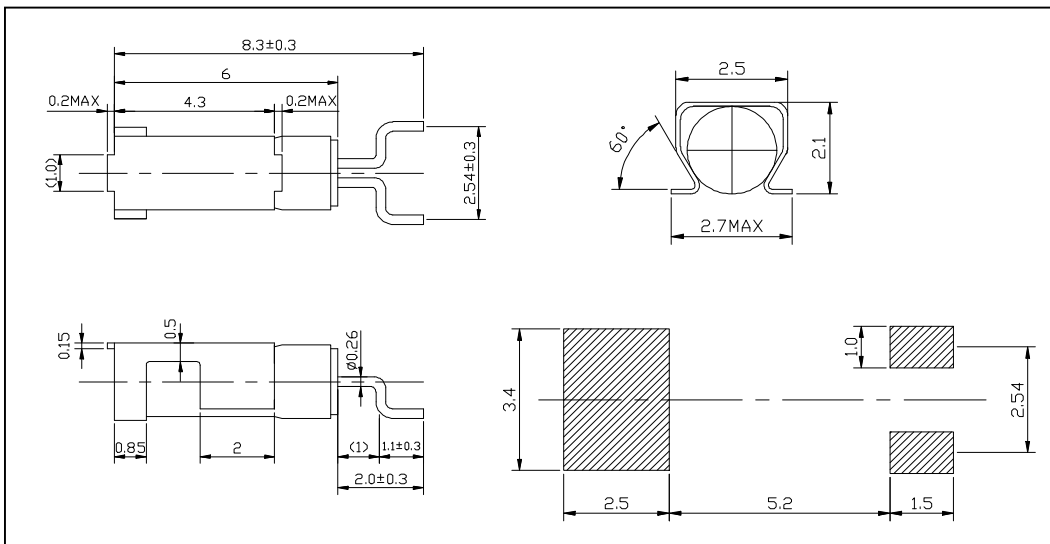
Item	Specifications
Nominal Frequency	32.768 kHz
Adjustment Tolerance	$\pm 20\text{PPM MAX}/25^\circ\text{C}$
Turnover Temperature	$+25^\circ\text{C} \pm 5^\circ\text{C}$
Temperature Coefficient	$-0.034 \pm 0.006\text{PPM}/^\circ\text{C}^2$
Load Capacitance	12.5pF or As customer request
Equivalent Series Resistance	50 kOHMS MAX/25°C
Drive Level	1 μW MAX.
Insulation Resistance	500M Ω MIN/DC100V $\pm 15\text{V}$
Operating temperature range	-40°C to $+85^\circ\text{C}$
Storage temperature range	-55°C to $+125^\circ\text{C}$

Packing

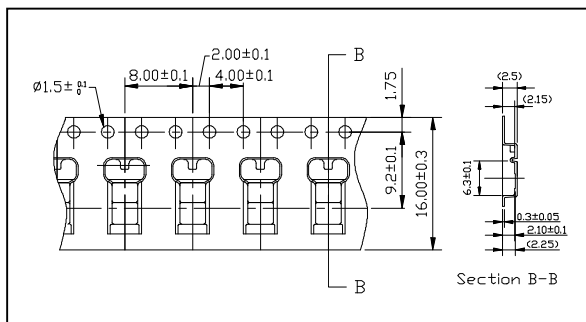
- ▶ 330mm Reel diameter
- ▶ 16mm Tape width, 8mm pitch
- ▶ 3000 Pieces per reel

Outline Drawing

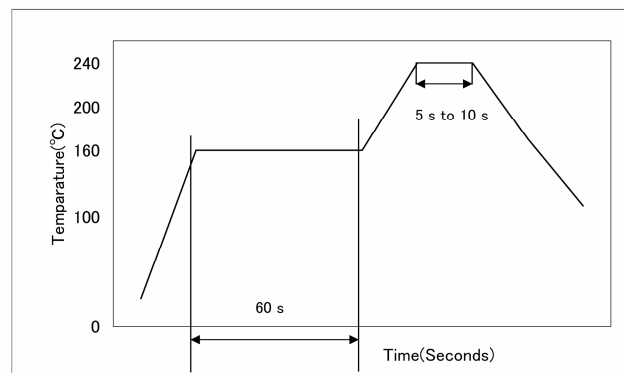
Unit : mm



Carrier Tape Dimensions



Reflow Soldering Profile



OMCG CO., LTD

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SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

OH 2520

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	26.0 to 50.0MHz
Frequency Tolerance	±15PPM,±20PPM,±30PPM,±50PPM,±100PPM
Turnover Temperature	+25°C ±5°C
Shunt Capacitance	5.0pF MAXIMUM
Load Capacitance	As Per Requested
Insulation Resistance	500ΩMIN at DC100V±15V
Drive Level	200μW MAX.
Frequency Stability Temperature(Ref to 25°C)	0~+50°C
	-10~+60°C
	-20~+70°C
	-40~+85°C
Storage temprature range	-40°C to +85°C

Features

- ▶ Ultra miniature package
2.5mmx2.0mmx0.6mm MAX
- ▶ Ceramic package and metal lid with
high accuracy and stability

Packing

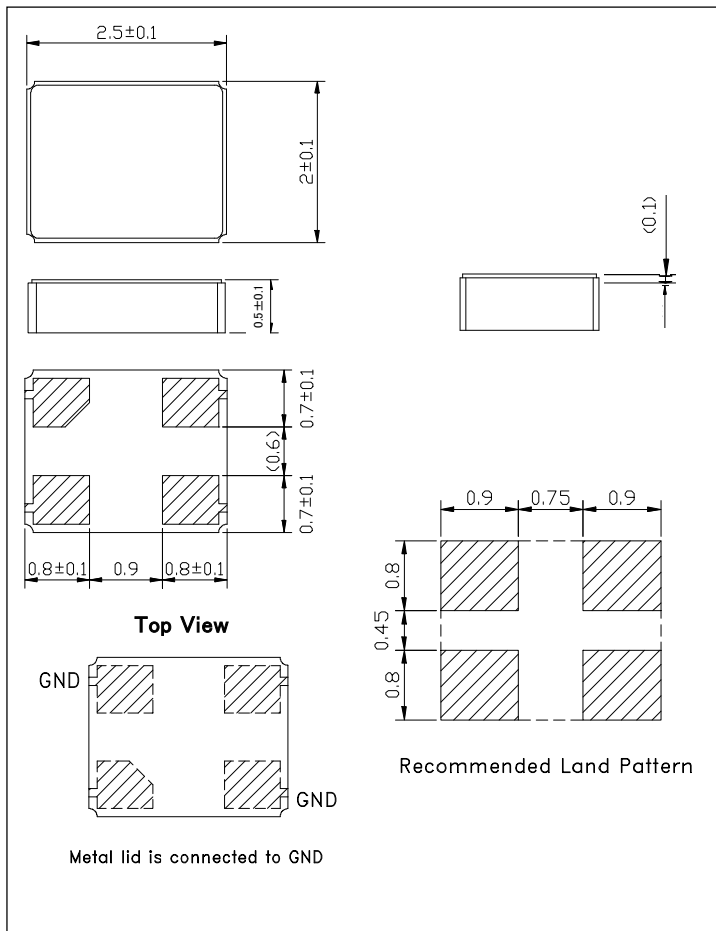
Part Numbering System

Holder Type	-	Frequency	-	Load Capacitance
OH2520	-	IN MHz	-	As Per Requested

Example: OH2520-26.000-9

Outline Drawing

Unit : mm



Frequency(MHz)	Series Resistance
26.0 ~ 34.999	100 MAX
35.0 ~ 50.0	50 MAX



OMCG CO., LTD

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SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT



SERIES :

OH 3225

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	12 to 60 MHz(AT Fund)
Frequency Tolerance	±10PPM to ±50PPM
Turnover Temperature	±25°C ±3°C
Frequency Deviation with Temp and Operating Temp	±5 ~(-10°C~+60°C)
	±10 ~(-20°C~+70°C)
Equivalent Series Resistance	150 OHMS MAX
Load Capacitance	As Per Requested
Reflow Conditions	260°C MAXIMUM for 10sec. MAXIMUM

Features

- ▶ Ultra-thin 0.9mm max high.(0.7mm Max is available)
- ▶ Tight tolerance and stability to ±10ppm
- ▶ Wide frequency range

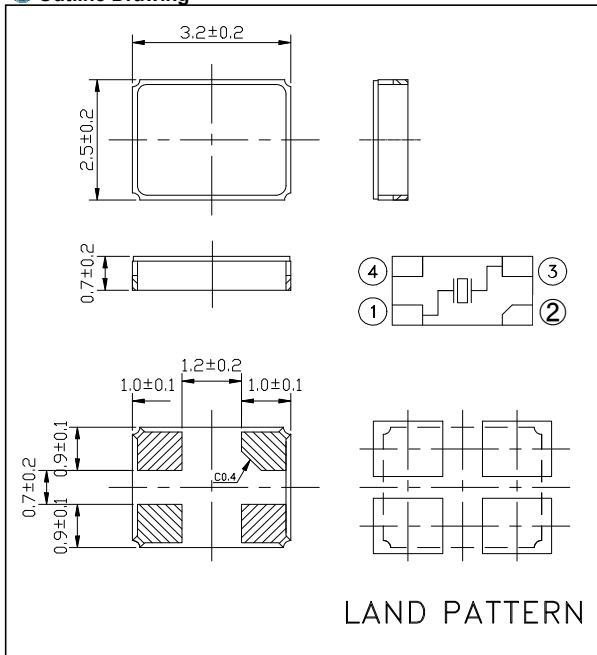
Packing

- ▶ 180mm Reel diameter
- ▶ 8mm Tape width,4mm pitch
- ▶ 1,000 pcs per reel

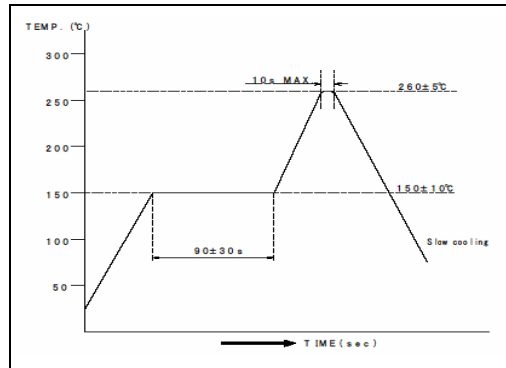
Holder Type	Frequency	Load Capacitance
OH3225	IN MHZ	As Per Req

Example : OH3225-16.000-16

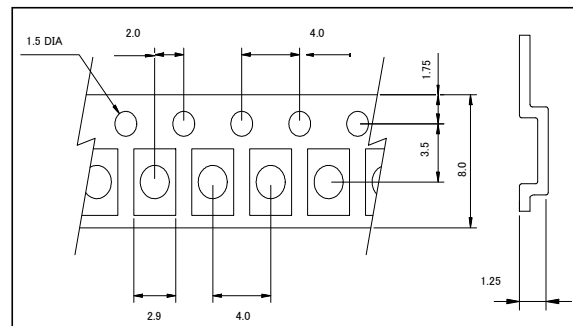
Outline Drawing



Reflow Soldering Profile



Carrier Tape Dimensions



SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT



SERIES :

OH 4025

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	12.6 to 50 MHz(Fund)
	60 to 100(3rd)
Frequency Tolerance	±10PPM to ±50PPM
Turnover Temperature	±25°C ±3°C
Frequency Deviation with Temp and Operating Temp	±5 ~(-10°C~+60°C)
	±10 ~(-20°C~+70°C)
	±15 ~(-30°C~+80°C)
Equivalent Series Resistance	150 OHMS MAX(Fund)
	80 OHMS MAX(3rd)
Load Capacitance	As Per Requested
Reflow Conditions	260°C MAXIMUM for 10sec. MAXIMUM

Features

- ▶ Ultra miniature package
- ▶ Tight tolerance and stability
- ▶ Wide frequency range

Packing

- ▶ 178mm Reel diameter
- ▶ 12mm Tape width,4mm pitch
- ▶ 1,000 Pieces per reel

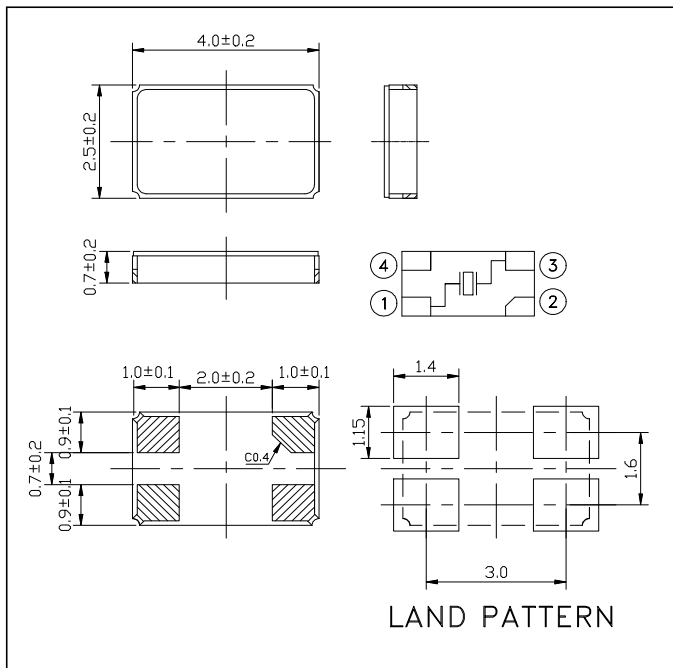
Part Numbering System

Holder Type	Frequency	CL	Extended Temp.range
OH 4025	IN MHz	9	EX

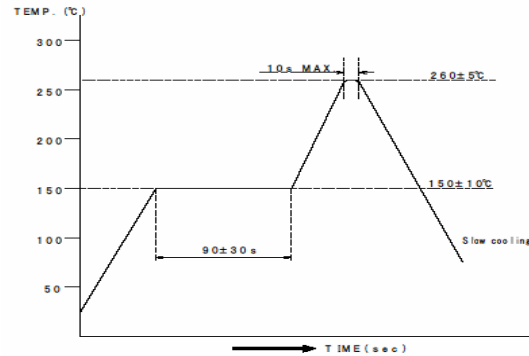
Example:OH4025-16.000-9-EX

Outline Drawing

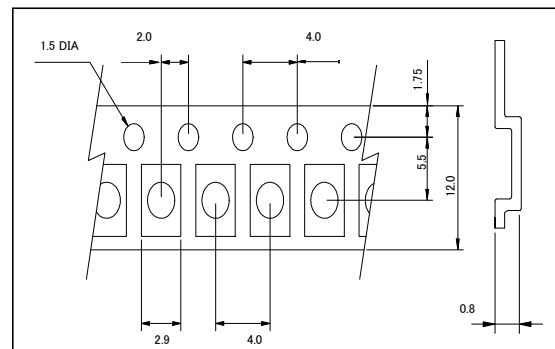
Unit:mm



Reflow Soldering Profile



Carrier Tape Dimensions



5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan
 Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT



SERIES :

OH 5032

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	10 to 50 MHz(Fund)
Frequency Tolerance	±10PPM to ±50PPM
Turnover Temperature	±25°C ±3°C
Frequency Deviation with Temp and Operating Temp	±5 ~(-10°C~+60°C)
	±10 ~(-20°C~+70°C)
	±15 ~(-30°C~+80°C)
Equivalent Series Resistance	60 OHMS MAX
Lord Capacitance	As Per Requested
Reflow Conditions	260°C MAXIMUM for 10sec. MAXIMUM

Features

- ▶ Ultra miniature package
- ▶ High accuracy and stability
- ▶ Wide frequency range

Packing

- ▶ 178mm Reel diameter
- ▶ 12mm Tape width, 8mm pitch
- ▶ 1,000 Pieces per reel

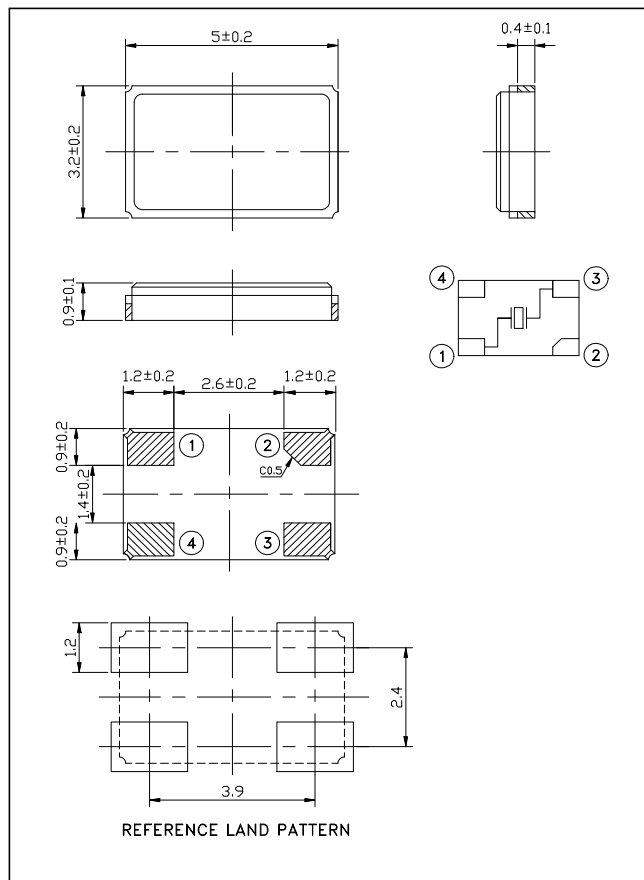
Part Numbering System

Holder Type	-	Frequency	-	Lord Capacitance
OH 5032	-	IN MHz	-	16pF

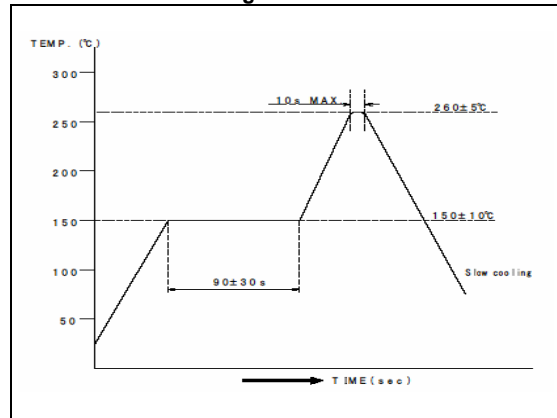
Example:OH5032-10.000MHZ-16

Outline Drawing

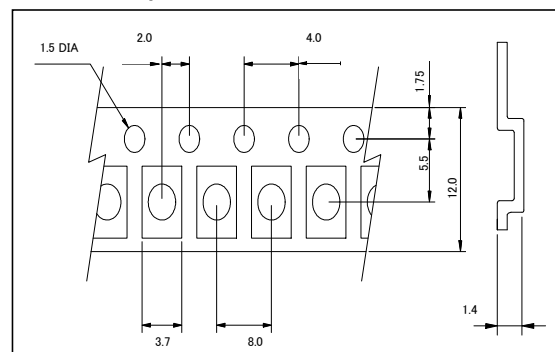
Unit:mm



Reflow Soldering Profile



Carrier Tape Dimensions



5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan

Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

OH5032A

Specifications

Item	Specifications	
Nominal Frequency	8.0 to 60.0MHz	
Frequency Tolerance	±15PPM,±30PPM,±50PPM,±100PPM	
Turnover Temperature	+25°C ±5°C	
Shunt Capacitance	7.0pF MAXIMUM	
Load Capacitance	As Per Requested	
Insulation Resistance	500ΩMIN at DC100V±15V	
Drive Level	500μW MAX.	
Frequency Stability Temperature(Ref to 25°C)	0~+50°C	±10PPM,±30PPM,±50PPM,±100PPM
	-10~+60°C	±15PPM,±30PPM,±50PPM,±100PPM
	-20~+70°C	±20PPM,±30PPM,±50PPM,±100PPM
	-40~+85°C	±30PPM,±50PPM,±100PPM
Storage temperature range	-40°C to +85°C	

Features

- ▶ Ultra miniature package
5.0mm x 3.2mmx1.5mm MAX
- ▶ Ceramic package with high accuracy and stability

Packing

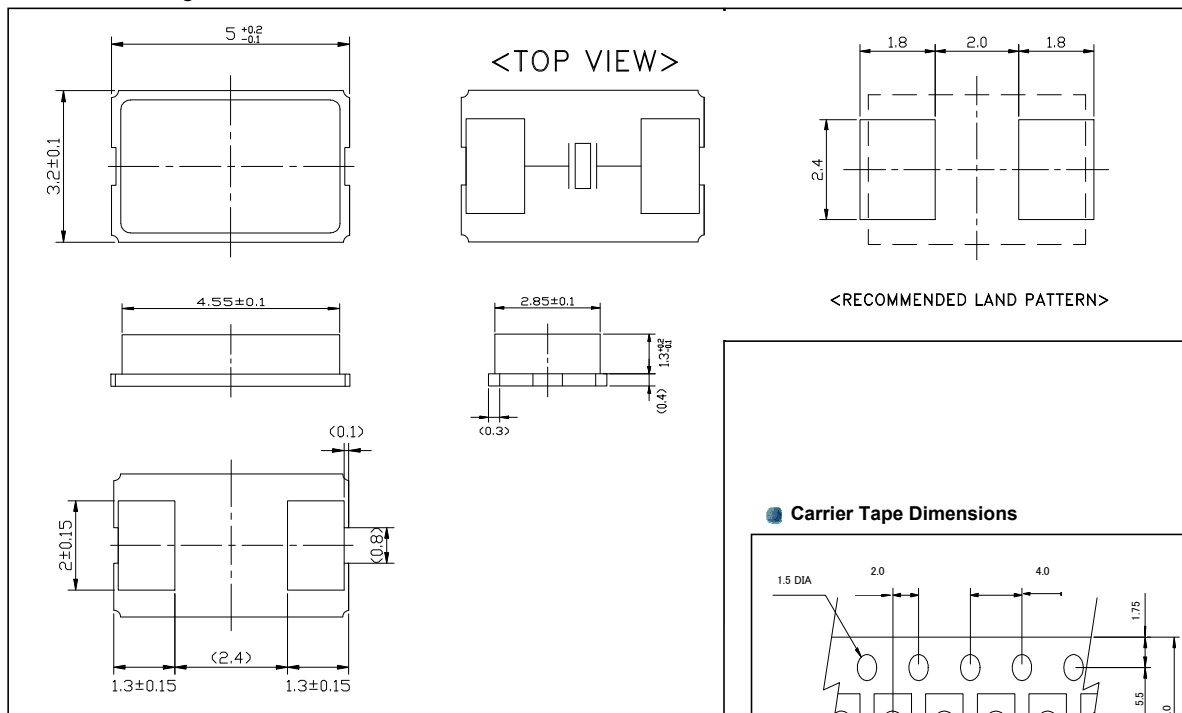
- ▶ 330mm Reel diameter
- ▶ 12mm Tape width,8mm pitch

Part Numbering System

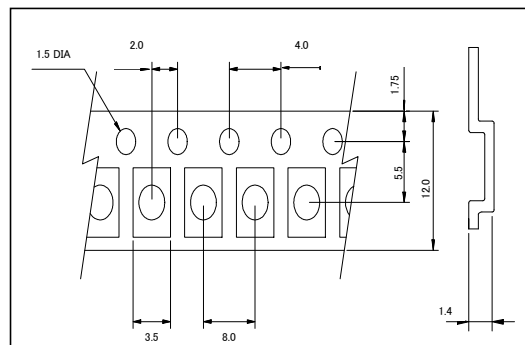
Holder Type	Frequency	Lord Capacitance
OH5032A	- IN MHz	- As Per Requested

Example:OH5032A-10.000-20

Outline Drawing



Carrier Tape Dimensions



OMCG CO., LTD

5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan
Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT



SERIES :

OH 6035

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	9.000 to 50.000 MHZ(Fund)
Frequency Tolerance	±10PPM to ±50PPM
Turnover Temperature	±25°C ±3°C
Frequency Deviation with Temp and Operating Temp	±5 ~(-10°C~+60°C)
	±10 ~(-20°C~+70°C)
Equivalent Series Resistance	60 OHMS MAX
Load Capacitance	As Per Requested
Reflow Conditions	260°C MAXIMUM for 10sec. MAXIMUM

Features

- ▶ Ultra-thin 1.0mm max high.
- ▶ High accuracy and stability
- ▶ Wide frequency range

Packing

- ▶ 178mm Reel diameter
- ▶ 12mm Tape width, 8mm pitch
- ▶ 1,000 Pieces per reel

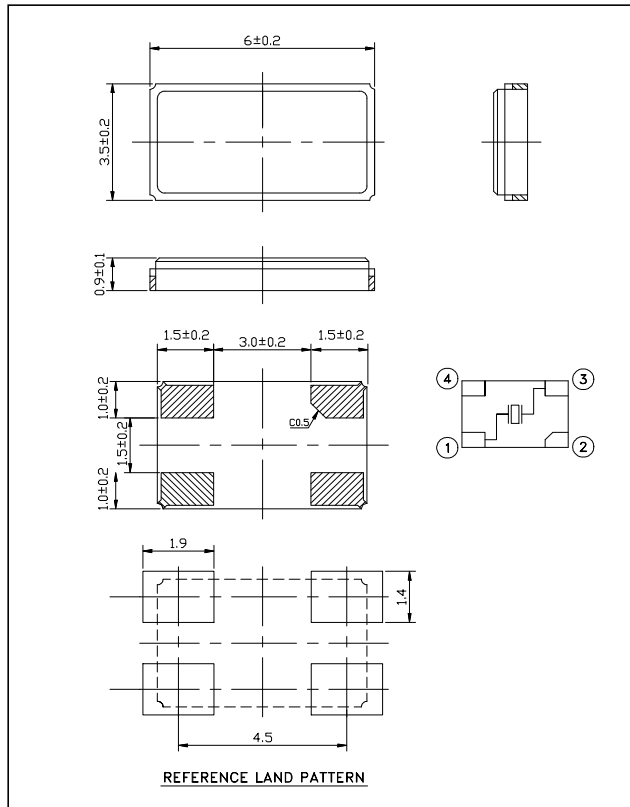
Part Numbering System

Holder Type	-	Frequency	-	CL
OH 6035	-	IN MHz	-	20

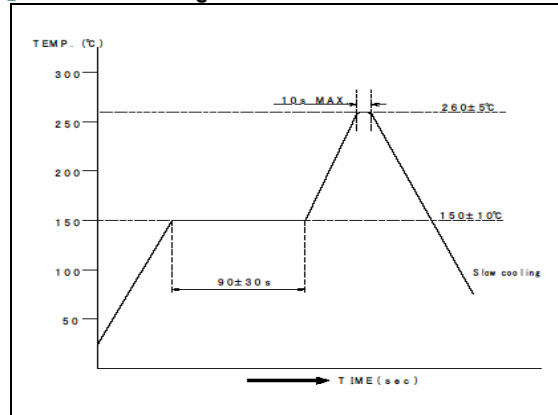
Example: OH6035-10.000-20

Outline Drawing

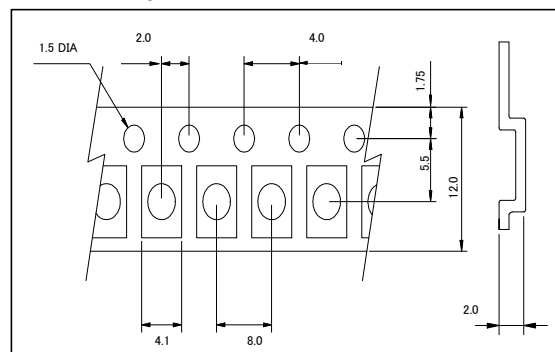
Unit:mm



Reflow Soldering Profile



Carrier Tape Dimensions



5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan
Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

SURFACE MOUNT CRYSTAL UNIT

SERIES :

OH6035A

● Specifications

Item	Specifications	
Nominal Frequency	10.0~40.0MHz	40.0~67.0MHz
Mode	Fundamental	3rd OT
Frequency Stability	±50PPM at 25°C ±50PPM or ±100PPM at -10~60°C	
Operating Temperature Range	-10~+60°C	
Load Capacitance	16.0pF TYP	Series
Drive Level	0.1mW	

● Features

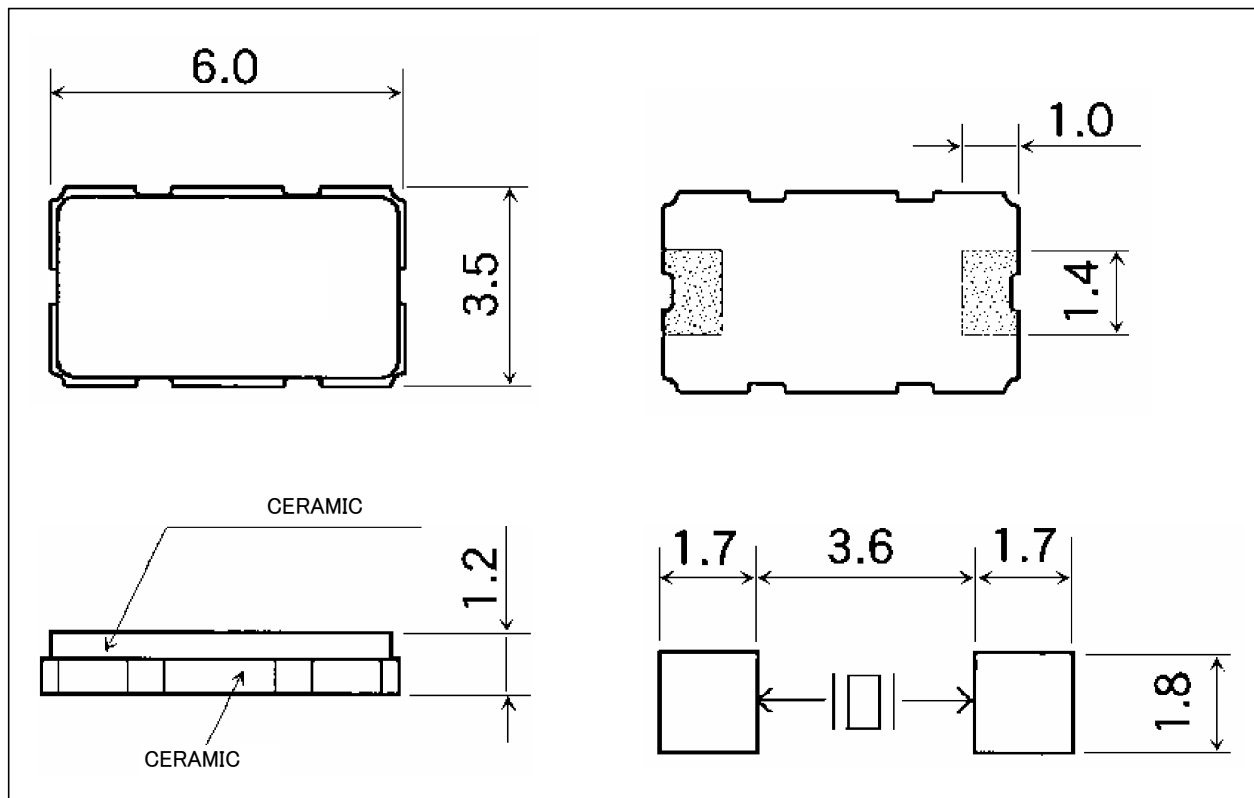
- ▶ Ultra miniature package by resin sealed
- ▶ Compact the type with height 1.2mm
- ▶ Wide frequency range

● ESR Table

Frequency(MHz)	Series Resistance
10.00~11.999	80Ω MAX
12.00~15.999	60Ω MAX
16.00~40.00	40Ω MAX
40.00~67.00	70Ω MAX

● Outline Drawing

Unit:mm



SURFACE MOUNT CRYSTAL UNIT

SERIES :

OH6035CS

Specifications

Item	Specifications
Nominal Frequency	12.00~50.00MHz(Fund)
Frequency Tolerance	±30PPM or ±50PPM
Frequency Temperature Coefficient	±30PPM or ±50PPM
Operating Temperature Range	-10~+60°C
Storage Temperature Range	-40~+85°C
Equivalent Series Resistance	50Ω MAX
Load Capacitance	16.0pF TYP
Shunt Capacitance	7.0pF MAX
Insulation Resistance	500MΩ MINIMUM,DC100V±15V
Drive Level	50 μW ±10 μW
Sealing	1x10 ⁻² μPa·m ³ /s MAX
Aging	±5PPM MAX/First year at 25±3°C
Shock Resistance※	±5PPM MAX

※Three drops on a hard board from 750mm or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions

Features

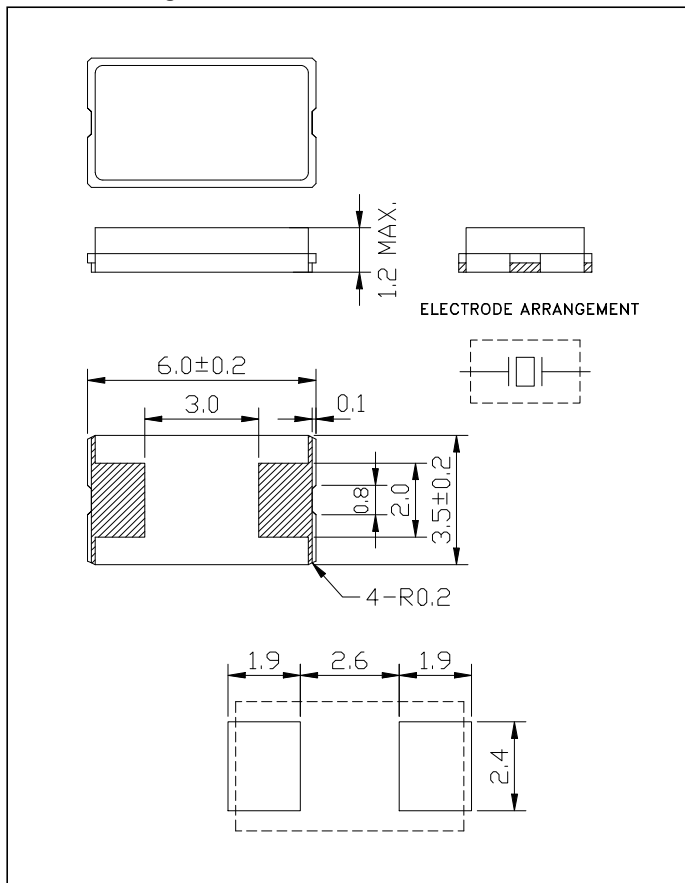
- ▶ Ultra miniature package
- ▶ Enables automatic mounting
- ▶ Excellent heat-resisting characteristics and environmental

Packing

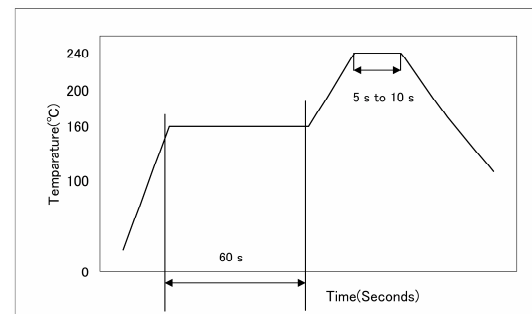
- ▶ 330mm Reel diameter
- ▶ 12mm Tape Width,8mm pitch
- ▶ 2000 Pieces per reel

Outline Drawing

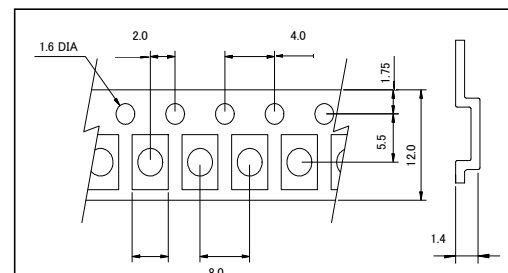
Unit:mm



Reflow Soldering Profile



Carrier Tape Dimensions



SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT



SERIES :

OH 7050

RoHS Compliant

Specifications

Item	Specifications
Nominal Frequency	8.000 to 40 MHZ(Fund)
	30.000 to 100.000(3rd)
Frequency Tolerance	±10PPM to ±50PPM
Turnover Temperature	±25°C ±3°C
Frequency Deviation with Temp and Operating Temp	±5 ~(-10°C~+60°C)
	±10 ~(-20°C~+70°C)
	±15 ~(-30°C~+80°C)
Equivalent Series Resistance	300 OHMS MAX(Fund)
	80 OHMS MAX(3rd)
Load Capastance	As Per Requested
Reflow Conditions	240°C MAXIMUM for 10sec. MAXIMUM

Features

- ▶ Seam sealing Type
- ▶ Tight tolerance and stability
- ▶ Wide frequency range

Packing

- ▶ 330mm Reel diameter(Fund)
- ▶ 330mm Reel diameter(3rd)
- ▶ 16mm Tape width,8mm pitch
- ▶ 1,000 Pieces per reel

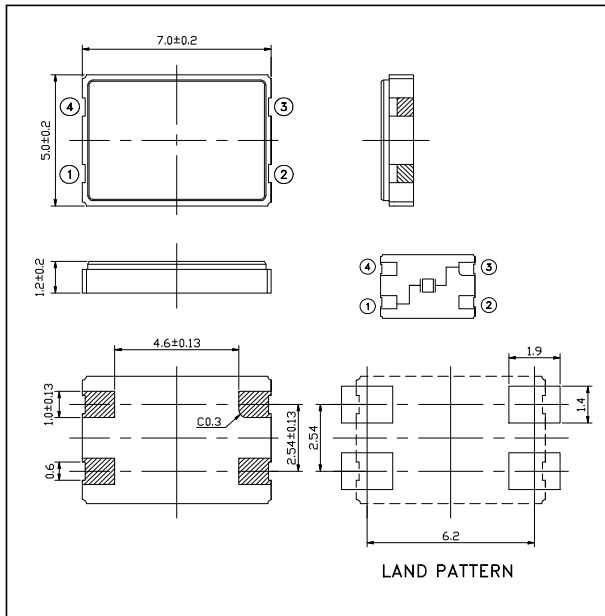
Part Numbering System

Holder Type	-	Frequency	-	CL
OH7050	-	IN MHZ	-	18

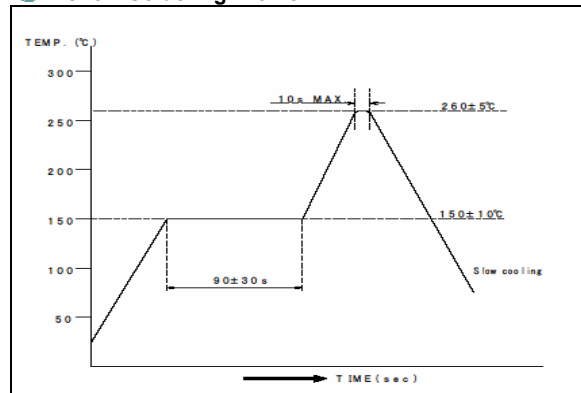
Example:OH7050-20.000-18

Outline Drawing

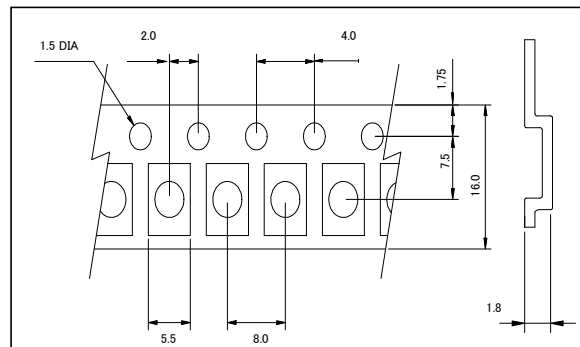
Unit:mm



Reflow Soldering Profile



Carrier Tape Dimensions



SERIES :

OH8045

RoHS Compliant

Specifications

Item	Specifications
Frequency Range	10.00~80.0MHz
Load Capacitance	10pF MIN.(Customer specified)
Shant Capacitance	7pF MAX.
Frequency Tolerance	±30,±50±100PPM /at 25°C
Frequency Stability	±30,±50±100PPM /at 25°C
Insulator Resistance	500MΩ/100V _{DC}
Drive Level	100μW TYP./300μW MAX
Aging	±5PPM/Year at 25°C
Operating temperature range	-10°C ~ +70°C
Storage temperature range	-40°C ~ +85°C

Features

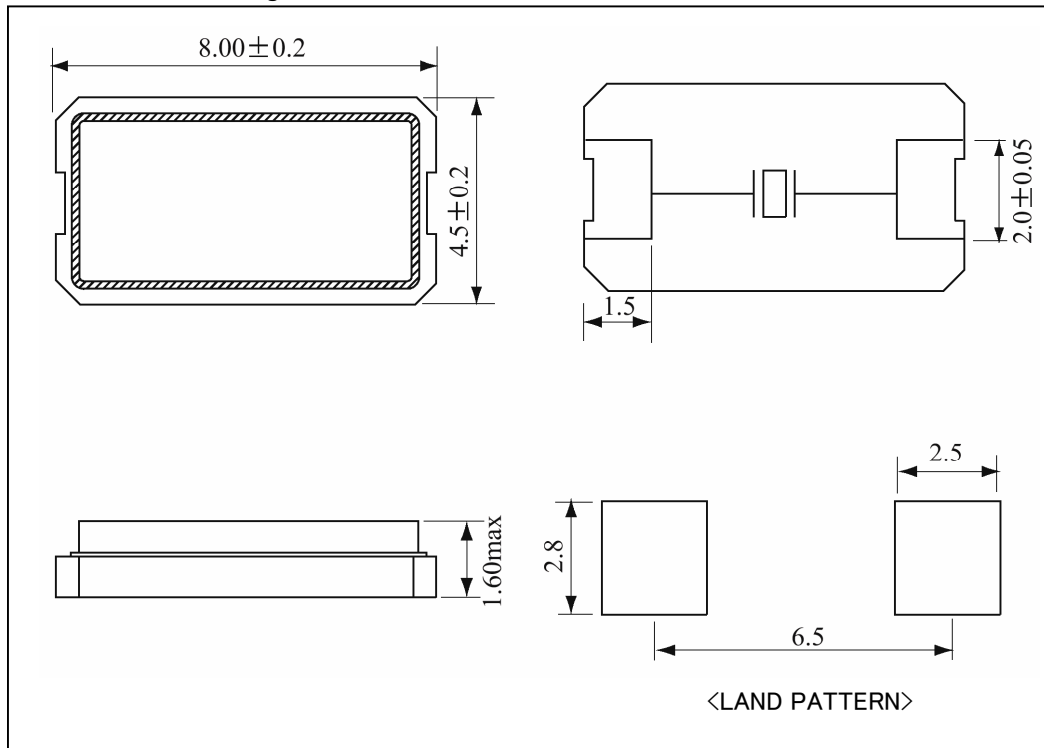
- ▶ Compact thin type with height 1.6mm
- ▶ Wide frequency range
- ▶ Glass sealing

ESR Table

Mode	Frequency(MHz)	Series Resistance
AT Fund	10.0~11.999	80 MAX
	12.0~39.999	50 MAX
3rd OT	40.0~80.0	70 MAX

Outline Drawing

Unit : mm



QUARTZ CRYSTAL UNITS

SERIES :

HC-49/U-S

RoHS
Compliant

Specifications

Item	Specifications
Frequency Range	3.2~60 MHz
Frequency Tolerance	±30PPM Typical ±50PPM Maximum
Frequency Temperature at Oper.Temp	±30PPM Typical ±50PPM Maximum
Equivalent Capacitance	7pF Max
Drive Level	0.5mW MAX.
Operating temperature range	-10°C ~ +60°C Standard
	-40°C ~ +85°C Extended
Storage temperature range	-55°C to +125°C
Aging	$\Delta f/f : \pm 5\text{PPM MAX}$
Shock Resistance	$\Delta f/f : \pm 10\text{PPM}$ Free falls on hard wood
	Height 75cm, Times 3sideX3Times

※Please contact us for tight spec.

Features

- ▶ Metal case and completely sealed type.
- ▶ Compact low profile type(2.0~3.5mm)
- ▶ One type covers all requirements
- ▶ Pb Free Available

Part Numbering System

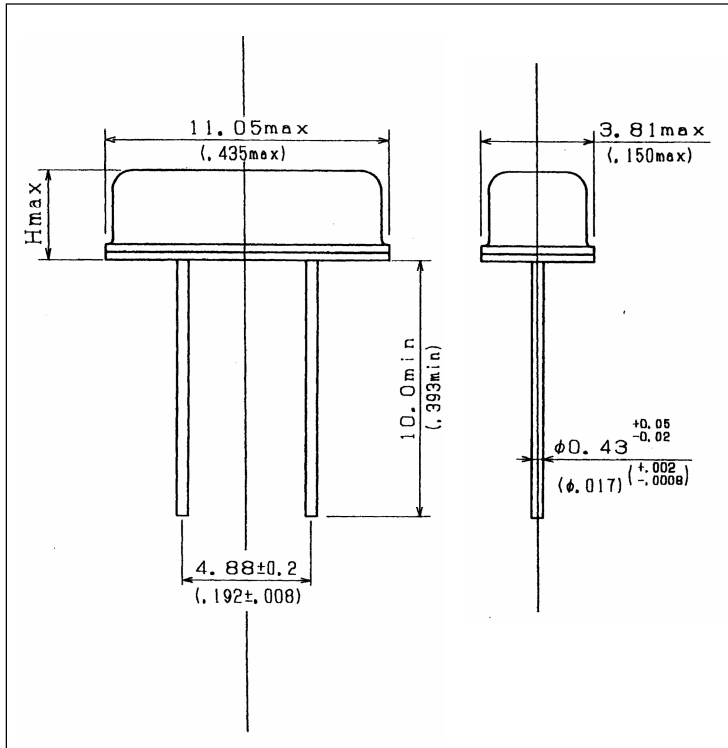
Holder	FREQ.	-	Load Cap.	-	Hight
HC-49/U-S	In Mhz	-	xx	-	2.5mm 3.0mm 3.5mm

(Std=4.0mm)

Example: HC-49/U-S-20.000-30

Outline Drawing

Unit : mm



ESR TABLE

Mode	Frequency(MHz)	Series Resistance
AT Fund	3.0~3.5	250 MAX
	3.5~4.0	200 MAX
	4.0~4.5	150 MAX
	4.5~7.0	100 MAX
	7.0~14.0	70 MAX
	14.0~30.0	60 MAX
3rd OT	20.0~60.0	100 MAX

NO.	High
H20	2.0mm MAX.
H25	2.5mm MAX
H35	3.5mm MAX

QUARTZ CRYSTAL UNITS SMD SERIES

OMCG CO., LTD

SERIES :

SM-49-4
(HC-49/U-S-SMD)

RoHS
Compliant

Specifications

Item	Specifications
Frequency Range	3~60 MHz
Frequency Tolerance	±30PPM Typical ±50PPM Maximum
Frequency Temperature at Oper.Temp	±30PPM Typical ±50PPM Maximum
Equivalent Capacitance	7pF MAX
Drive Level	0.5mW MAX.
Operating temperature range	-10°C ~ +60°C Standard -40°C ~ +85°C Extended
Storage temperature range	-40°C to +85°C
Aging	$\Delta f/f$: ±5PPM MAX
Shock Resistance	$\Delta f/f$: ±10PPM Free falls on hard wood Height 75cm, Times 3sideX3Times

※Please contact us for tight spec.

Features

- ▶ Metal case and completely sealed type.
- ▶ Compact low profile type(2.5~4.2mm)
- ▶ For automatic mounting
- ▶ Re-flow soldering can be accommodated

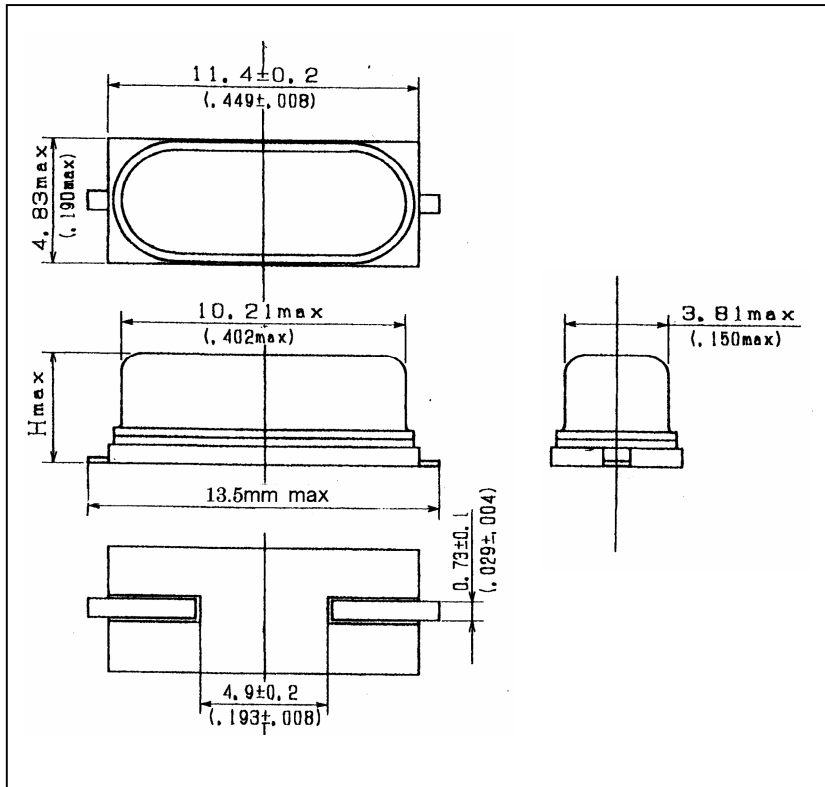
Part Numbering System

Holder Type	Freq.	-	CL	-	Height
SM-49-4	in Mhz	-	16pF	-	H25 H30 H32 H42

Example: SM-49-4-20.000-16-H42

Outline Drawing

Unit : mm



ESR TABLE

Mode	Frequency(MHz)	Series Resistance
AT Fund	3.0~3.5	250 MAX
	3.5~4.0	200 MAX
	4.0~4.5	150 MAX
	4.5~7.0	100 MAX
	7.0~14.0	70 MAX
3rd OT	14.0~30.0	60 MAX
	20.0~60.0	100 MAX

NO.	High
H25	2.5mm MAX
H30	3.0mm MAX
H32	3.2mm MAX
H42	4.2mm MAX

OMCG CO., LTD

5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan

Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT

SERIES :

OHC-4PDA,B

Specifications

Item	Specifications		
Frequency Range	3.5~36.0MHz	22.0~46.0MHz	32.0~65.0MHz
Mode of Oscillation	AT Fundamental	BT Fundamental	AT 3rd OT
Load Capacitance	12pF~32pF or Series		
Frequency Tolerance	±30PPM Typical/at 25±3°C		
Frequency Stability(-10~+60°C)	±50PPM	±100PPM	±50PPM
Drive Level	100µW TYP.		
Operating temperature range	-40°C ~ +85°C		
Storage temperature range	-55°C ~ +125°C		

Features

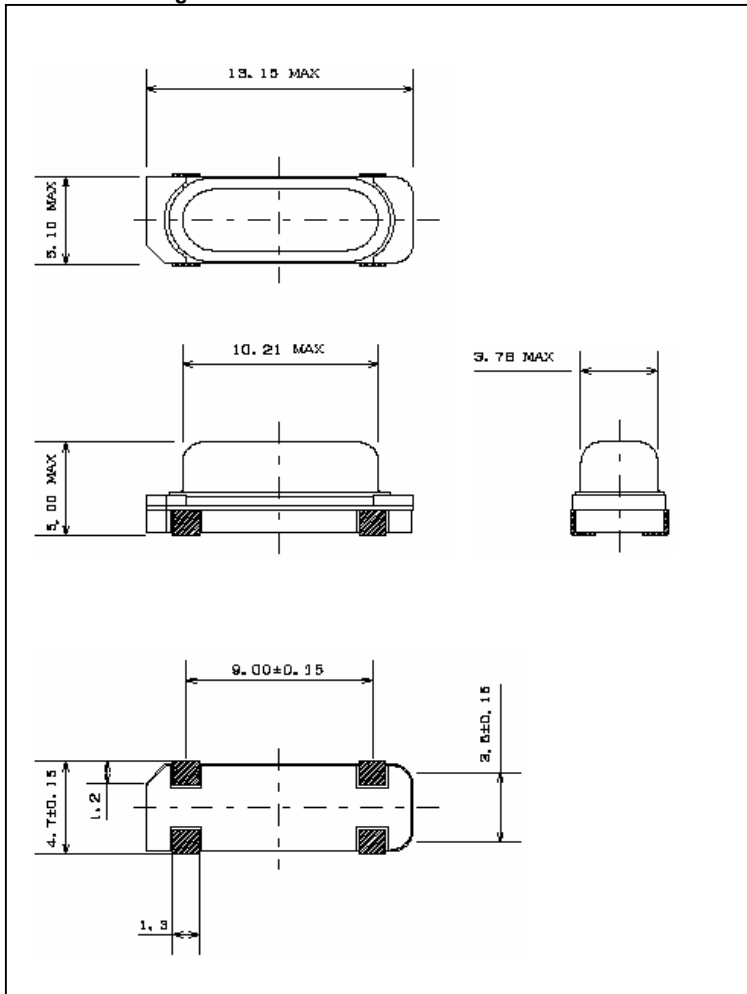
- ▶ Excellent long term stability
- ▶ Land pattern possible to exchange with popular mold package crystal
- ▶ Alternative solution for MA505, MA506

ESR Table

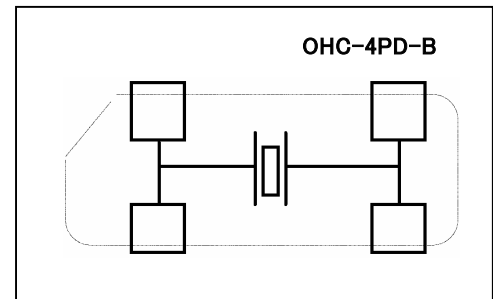
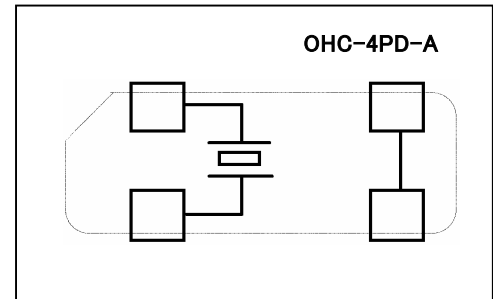
Mode	Frequency(MHz)	Series Resistance
AT Fund	3.5~4.0	180 MAX
	4.0~5.0	150 MAX
	5.0~6.0	120 MAX
	6.0~7.0	100 MAX
	7.0~9.0	80 MAX
	9.0~13.0	60 MAX
	13.0~20.0	50 MAX
	20.0~36.0	40 MAX
BT Fund	22.0~46.0	40 MAX
3rd OT	32.0~65.0	80 MAX

Outline Drawing

Unit : mm



<PIN LAYOUT>



SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT

SERIES :

OHC-2SPD

Specifications

Item	Specifications		
Frequency Range	3.5~36.0MHz	22.0~46.0MHz	32.0~65.0MHz
Mode of Oscillation	AT Fundamental	BT Fundamental	AT 3rd OT
Load Capacitance	12pF~32pF or Series		
Frequency Tolerance	±30PPM Typical/at 25±3°C		
Frequency Stability(-10~+60°C)	±50PPM	±100PPM	±50PPM
Drive Level	100µW TYP.		
Operating temperature range	-40°C ~ +85°C		
Storage temperature range	-55°C ~ +125°C		

Features

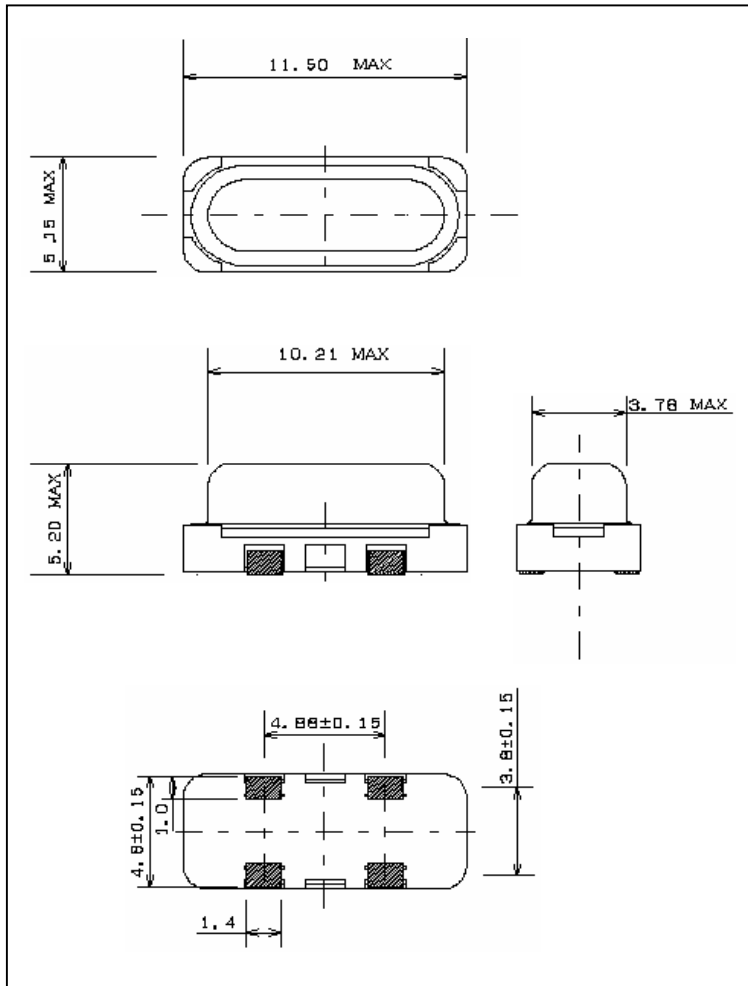
- ▶ Excellent long term stability
- ▶ Excellent aging by proven resistance weld metal package

ESR Table

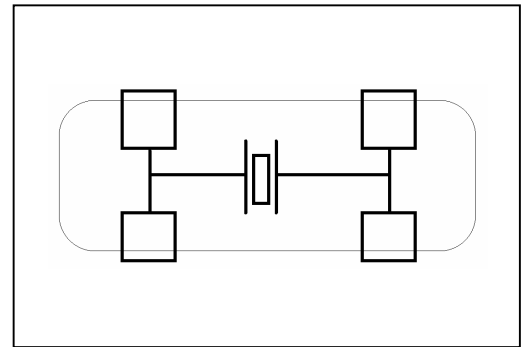
Mode	Frequency(MHz)	Series Resistance
AT Fund	3.5~4.0	180 MAX
	4.0~5.0	150 MAX
	5.0~6.0	120 MAX
	6.0~7.0	100 MAX
	7.0~9.0	80 MAX
	9.0~13.0	60 MAX
	13.0~20.0	50 MAX
BT Fund	22.0~36.0	40 MAX
	20.0~36.0	40 MAX
3rd OT	32.0~65.0	80 MAX

Outline Drawing

Unit : mm



<PIN LAYOUT>



SURFACE MOUNT MICROPROCESSOR CRYSTAL UNIT

SERIES :

OHC-2SPDG

Features

- ▶ Available Proven resistance weld metal package
- ▶ Land pattern possible to exchange with popular ceramic crystals

Specifications

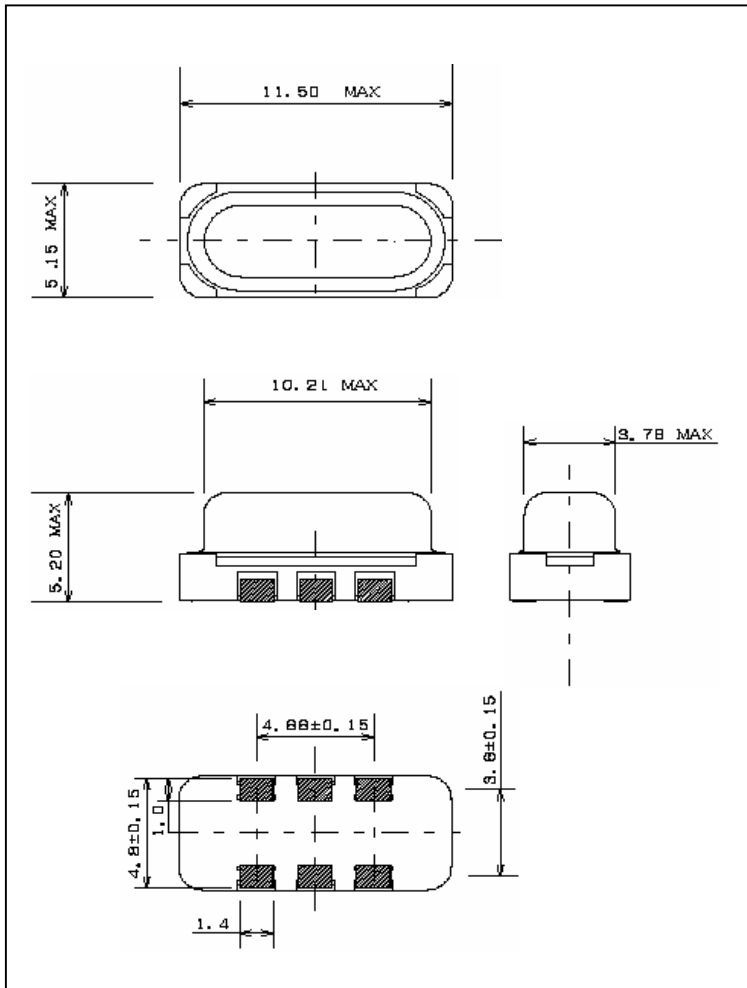
Item	Specifications		
Frequency Range	3.5~36.0MHz	22.0~46.0MHz	32.0~65.0MHz
Mode of Oscillation	AT Fundamental	BT Fundamental	AT 3rd OT
Load Capacitance	12pF~32pF or Series		
Frequency Tolerance	±30PPM Typical/at 25±3°C		
Frequency Stability(-10~+60°C)	±50PPM	±100PPM	±50PPM
Drive Level	100µW TYP.		
Operating temperature range	-40°C ~ +85°C		
Storage temperature range	-55°C ~ +125°C		

ESR Table

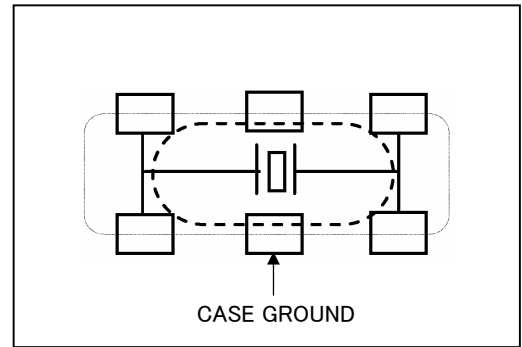
Mode	Frequency(MHz)	Series Resistance
AT Fund	3.5~4.0	180 MAX
	4.0~5.0	150 MAX
	5.0~6.0	120 MAX
	6.0~7.0	100 MAX
	7.0~9.0	80 MAX
	9.0~13.0	60 MAX
	13.0~20.0	50 MAX
BT Fund	20.0~36.0	40 MAX
	22.0~46.0	40 MAX
3rd OT	32.0~65.0	80 MAX

Outline Drawing

Unit : mm



<PIN LAYOUT>



LOW PROFILE SMD CRYSTAL UNIT



SERIES :

OH 1150M

Features

- ▶ Ultra miniature package, low height 11.0mmx5.0mmx2.1mm MAX.
- ▶ Resistance weld metal package
- ▶ Tight spec +/-10ppm available

Specifications

Item	Specifications		
Nominal Frequency	3.5 to 40MHz(AT Fund)	25 to 46MHz(BT Fund)	32 to 90MHz(AT 3rdOT)
Frequency Tolerance	±30PPM at 25±3°C		
Frequency Stability※	±50PPM	±100PPM	±50PPM
Drive Level	100µW TYP		
Load Capacitance	12pF~32pF or Series		
Operating Temperature Range	-40°C to +85°C		
Storage temperature range	-55°C ~+125°C		

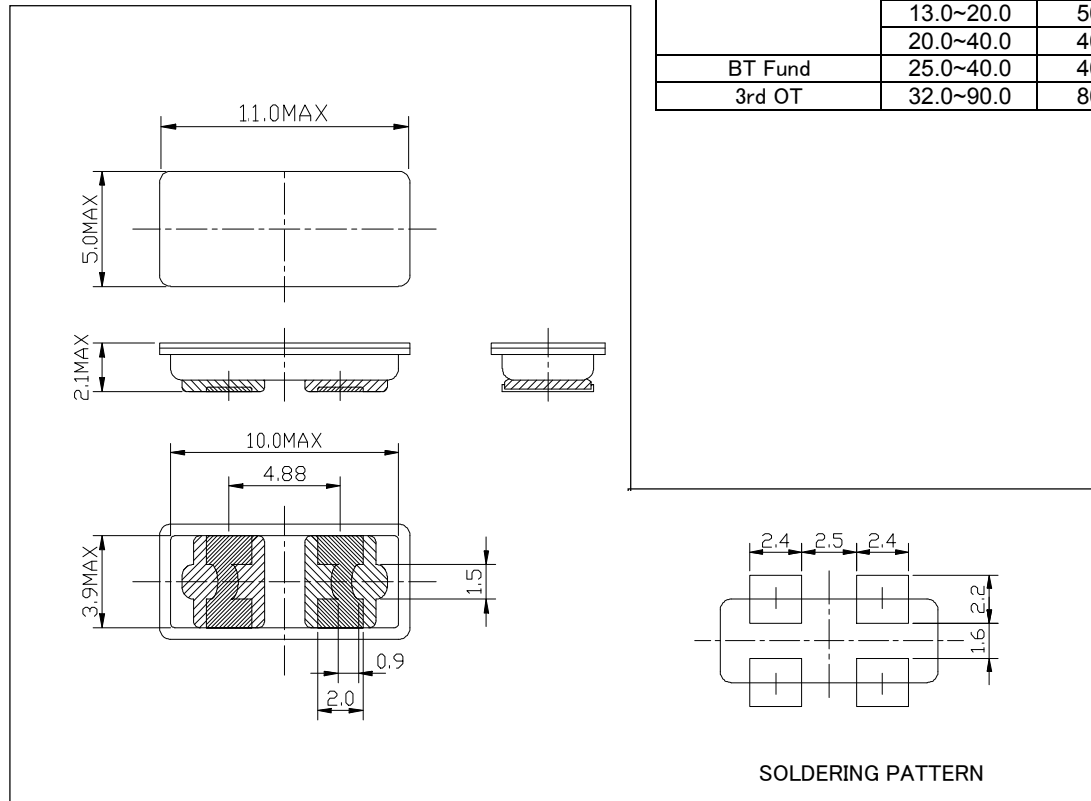
※-10~+60°C

ESR TABLE

Mode	Frequency(MHz)	Series Resistance
AT Fund	3.5~4.0	180 MAX
	4.0~5.0	150 MAX
	5.0~6.0	120 MAX
	6.0~7.0	100 MAX
	7.0~9.0	80 MAX
	9.0~13.0	60 MAX
	13.0~20.0	50 MAX
BT Fund	25.0~40.0	40 MAX
	3rd OT	32.0~90.0

Outline Drawing

Unit : mm



SURFACE MOUNT CRYSTAL UNIT

SERIES :

OH1150C

Specifications

Item	Specifications
Nominal Frequency	3.50~30.0MHz
Frequency Tolerance	±30PPM or ±50PPM(25°C)
Frequency vs. Temperature Characteristics	±30PPM or ±50PPM(-10~+60°C)
Load Capacitance	16.0pF TYP.
Shunt Capacitance	7.0pF MAX
Storage Temperature Range	-55~125°C
Operating Temperature Range	-40~+85°C
Insulation Resistance	500MΩ MINIMUM,DC100V±15V
Drive Level	50 μW to 100μW
Aging	±5PPM MAX/First year at 25±3°C
Sealing	1x10 ⁻² μPa·m ³ /s MAX.
Shock Resistance	±10X10 ⁻⁶ MAX.

※Three drops on a hard board from 750mm height or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions

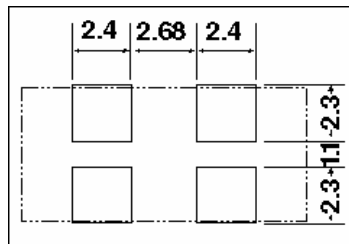
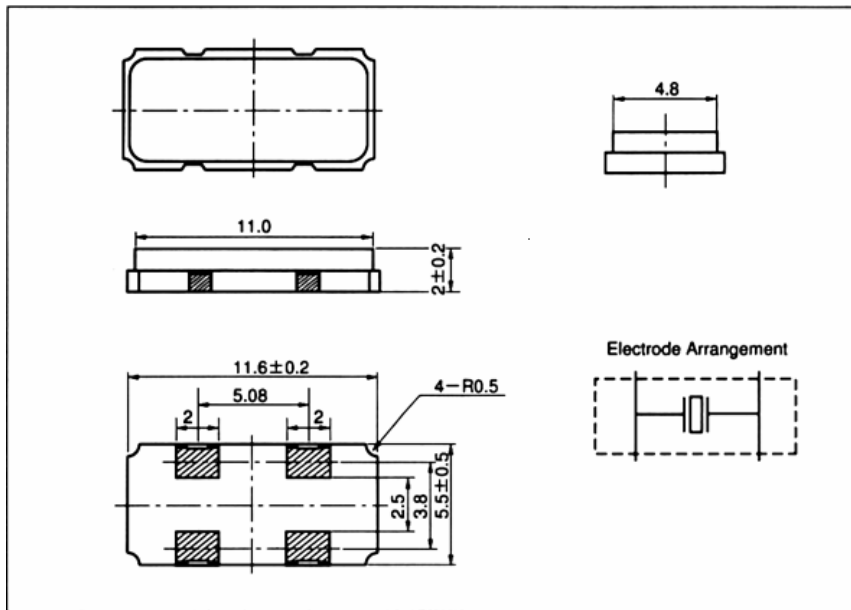
Features

- ▶ Miniature SMD package
- ▶ Highly reliable ceramic package
- ▶ Excellent for high-density circuit boards
- ▶ Enable automatic mounting

Frequency	Equivalent series resistance
3.5MHz<(=)fo<4MHz	200
4MHz<(=)fo<6MHz	150
6MHz<(=)fo<10MHz	100
10MHz<(=)fo<14MHz	80
14MHz<fo<(=)30MHz	50

Outline Drawing

Unit:mm



SURFACE MOUNT CRYSTAL UNIT

SERIES :



● Specifications

Item	Specifications
Nominal Frequency	3.50~34.0MHz(Fund)27.0~70.0MHz(3rd OT)
Frequency Tolerance	±30PPM or ±50PPM(25°C)
Frequency vs. Temperature Characteristics	±30PPM or ±50PPM(-10~+60°C)
Load Capacitance	16.0pF TYP.
Shunt Capacitance	7.0pF MAX
Storage Temperature Range	-55~125°C
Operating Temperature Range	-40~+85°C
Insulation Resistance	500MΩ MINIMUM,DC100V±15V
Drive Level	50 μ W to 50μW
Aging	±5PPM MAX/First year at 25±3°C
Sealing	1x10 ⁻⁷ μPa·m ³ /s MAX.
Shock Resistance	±5X10 ⁹ MAX.

※Three drops on a hard board from 750mm height or excitation test with 3000GX0.3 ms X1/2 sine wave X3 directions

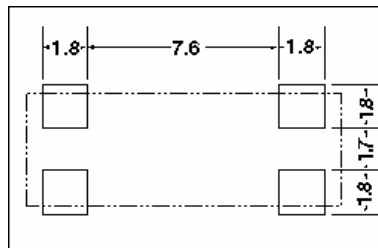
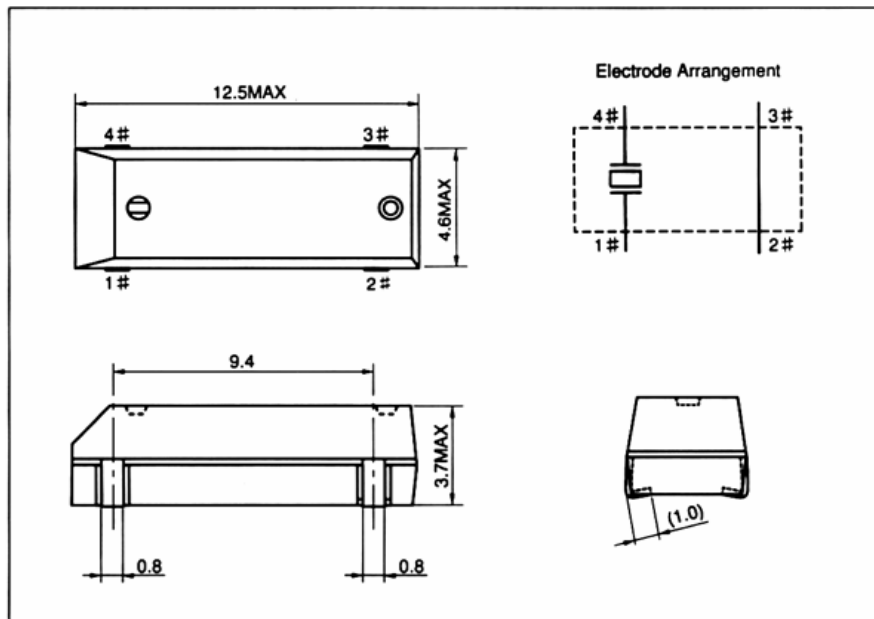
● Features

- ▶ Suitable for various applications
- ▶ AT CUT crystal performance
- ▶ Excellent for high-density circuit boards
- ▶ Enable automatic mounting

Frequency	Equivalent series resistance	Mode
3.5MHz<(=)fo<4MHz	200	Fund
4MHz<(=)fo<6MHz	150	
6MHz<(=)fo<10MHz	100	
10MHz<(=)fo<(=)32MHz	50	
30MHz<fo<36MHz	100	3rd OT
36MHz<(=)fo<70MHz	80	

● Outline Drawing

Unit:mm



MICROPROCESSOR CRYSTAL UNIT

SERIES :

OCSA309,310

RoHS Compliant

Specifications

Item	Specifications	
	OCSA309	OCSA310
Series	OCSA309	OCSA310
Nominal Frequency	3.50~4.0MHz	4.0~30.0MHz(fund) 30.0~70.0MHz(3rd OT)
Frequency Tolerance	±30PPM or ±50PPM(25°C)	
Frequency vs. Temperature Characteristics	±30PPM or ±50PPM(-10~+60°C)	
Load Capacitance	16.0pF TYP.	
Shunt Capacitance	5.0pF MAX.	
Storage Temperature Range	-40~+85°C	
Operating Temperature Range	-20~+70°C	
Insulation Resistance	500MΩ MINIMUM,DC100V±15V	
Drive Level	50 μW to 100μW	
Aging	±5PPM MAX/First year at 25±3°C	
Sealing	1x10 ⁻² μPa·m ³ /s MAX.	
Shock Resistance※	±5X10 ⁻⁶ MAX.	

※Three drops test on a hard board from 750mm height or shock test with 3000GX0.3 ms X1/2 sine wave X3 directions

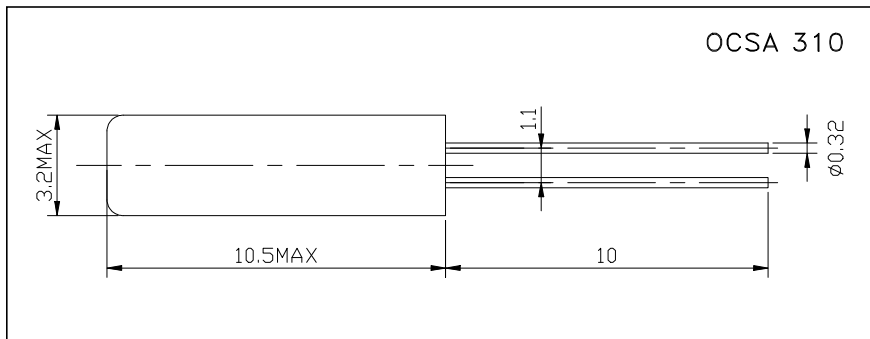
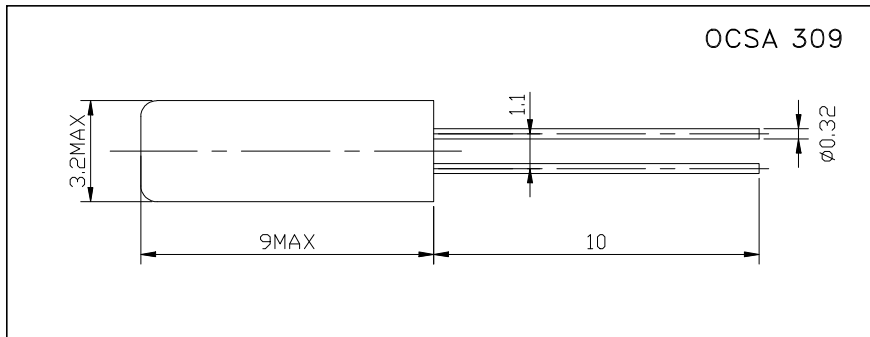
Features

- ▶ Small compact size
- ▶ High stability gained through vacuum sealing
- ▶ Excellent vibration and shock resistance

Frequency	Equivalent series resistance	Mode
3.5MHz<(=)fo<4MHz	200	Fund
4MHz<(=)fo<6MHz	150	
6MHz<(=)fo<10MHz	100	
10MHz<(=)fo<(=)30MHz	50	
30MHz<fo<36MHz	100	3rd OT
36MHz<(=)fo<70MHz	80	

Outline Drawing

Unit:mm



MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

UM-1L

LOW
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Specifications

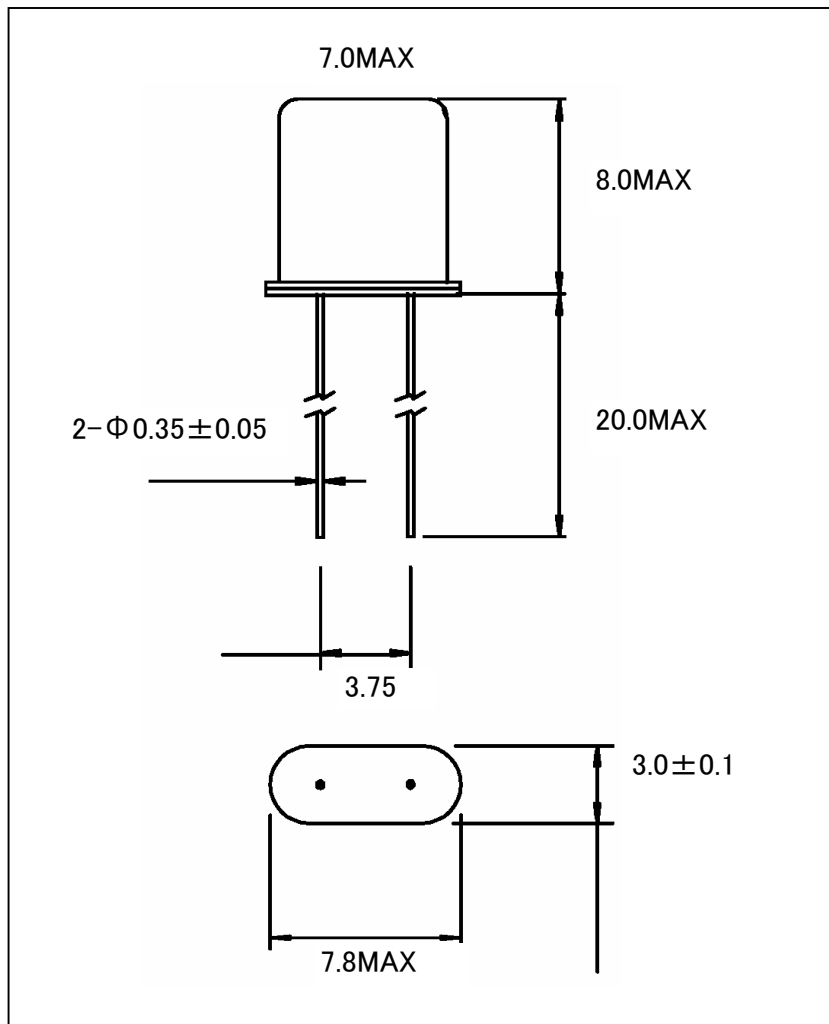
Item	Specifications	
Frequency Range	800kHz~1.024MHz	1.184~1.2288MHz
Frequency Tolerance	±50PPM at 25±3°C	
Frequency Stability	±100PPM at -10~+60°C	
Load Capacitance	30pF	
Drive Level	0.5mW	
Equivalent Series Resistance	3kΩ	4kΩ
Operating Temperature Range	-10°C ~ +60°C	
Storage Temperature Range	-40°C ~ +85°C	

Features

- ▶ Low frequency range
- ▶ Industry standard packages

Outline Drawing

Unit : mm



OMCG CO., LTD

5F daVinci Shin-Yokohama131Bldg.,1-3-1,Shin-Yokohama,Kohoku-ku,Yokohama-city,Kanagawa 222-0033,Japan
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MICROPROCESSOR CRYSTAL UNIT



SERIES :

HC-49U

Specifications

Item	Specifications
Frequency Range	1.00~300.00MHz
Frequency Tolerance at25°C	±30PPM Typical ±50PPM Maximum
Frequency Stability Over Temperature	±50PPM Typical ±100PPM Maximum
Shunt Capacitance	7pF Max
Load Capacitance	10~32pF or Series
Drive Level	0.1mW TYP. 1mW MAX.
Operating temperature range	-20°C ~ +70°C Standard -40°C ~ +85°C Extended
Storage Temperature range	-55°C to +125°C
Aging	±5PPM MAX/Per Year
Shock Resistance	$\Delta f/f$: ±5PPM MAX Free falls on hard surface Height 75cm,Times 3sideX3Times

※Please contact us for tight spec.

Features

- ▶ Wide frequency range
- ▶ Industry standard packages

Packing

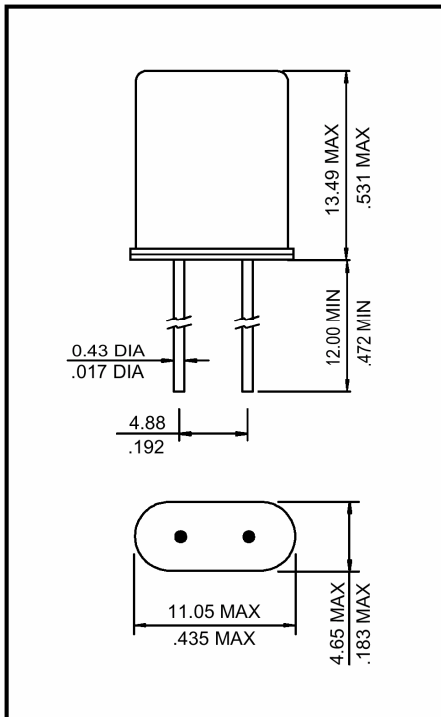
- ▶ 370mm Reel diameter
- ▶ 18mm Tape Width, 12.7mm pitch
- ▶ 1000 Pieces per reel

Frequency Range(MHz) and Mode

Fund	3rd OT	5th OT	7th OT	9th OT
1.0~65.0	20.0~90.0	60.0~130.0	125.0~200.0	180.0~300.0

Outline Drawing

Unit : mm



Equivalent Series Resistance Frequency

Freq (MHz)	ESR	Freq (MHz)	ESR	Freq (MHz)	ESR
1.000000	700	8.000000	30	27.000000	30
1.843000	700	9.216000	30	30.000000	30
2.000000	500	9.830400	30	32.000000	30
2.097152	500	10.000000	25	48.000000	30
2.457600	400	10.738635	25	60.000000	30
3.000000	200	11.000000	25	70.000000	30
3.276800	180	11.050000	25	80.000000	30
3.579545	180	11.059000	25	90.000000	40
3.600000	160	12.000000	25	100.000000	40
3.686400	140	12.288000	25	150.000000	50
4.000000	80	13.516800	25	200.000000	100
4.096000	80	14.318180	25	300.000000	150
4.194304	80	14.745600	25		
4.433619	80	15.000000	25		
4.915200	60	16.000000	25		
5.000000	60	16.384000	25		
5.068800	60	17.360000	25		
5.185000	60	18.000000	20		
5.714300	60	18.432000	20		
5.990400	50	19.354000	20		
6.000000	50	19.660800	20		
6.144000	40	20.000000	20		
6.400000	40	22.118400	20		
6.553600	40	23.400000	20		
7.000000	30	24.000000	20		
7.159090	30	24.576000	30		
7.372800	30	25.000000	30		



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MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

HC-49UL

LOW
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Specifications

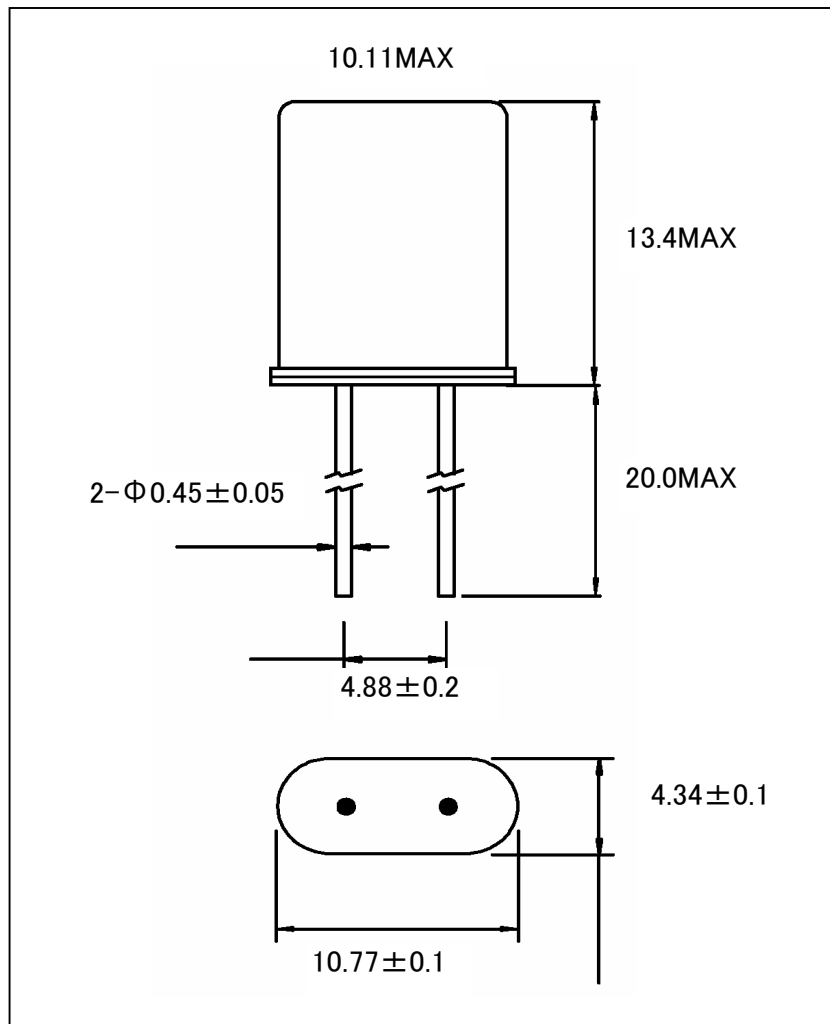
Item	Specifications	
Frequency Range	400kHz~1.024MHz	1.184~1.2288MHz
Frequency Tolerance	±50PPM at 25±3°C	
Frequency Stability	±100PPM at -10~+60°C	
Load Capacitance	30pF	
Drive Level	0.5mW	
Equivalent Series Resistance	3kΩ	4kΩ
Operating Temperature Range	-10°C ~ +60°C	
Storage Temperature Range	-40°C ~ +85°C	

Features

- ▶ Low frequency range
- ▶ Industry standard packages

Outline Drawing

Unit : mm



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MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

HC-51U, HC-48U

Specifications

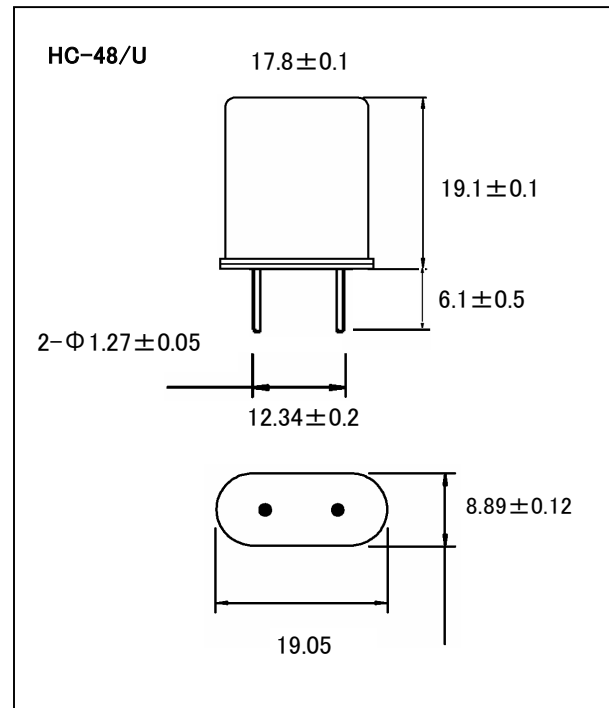
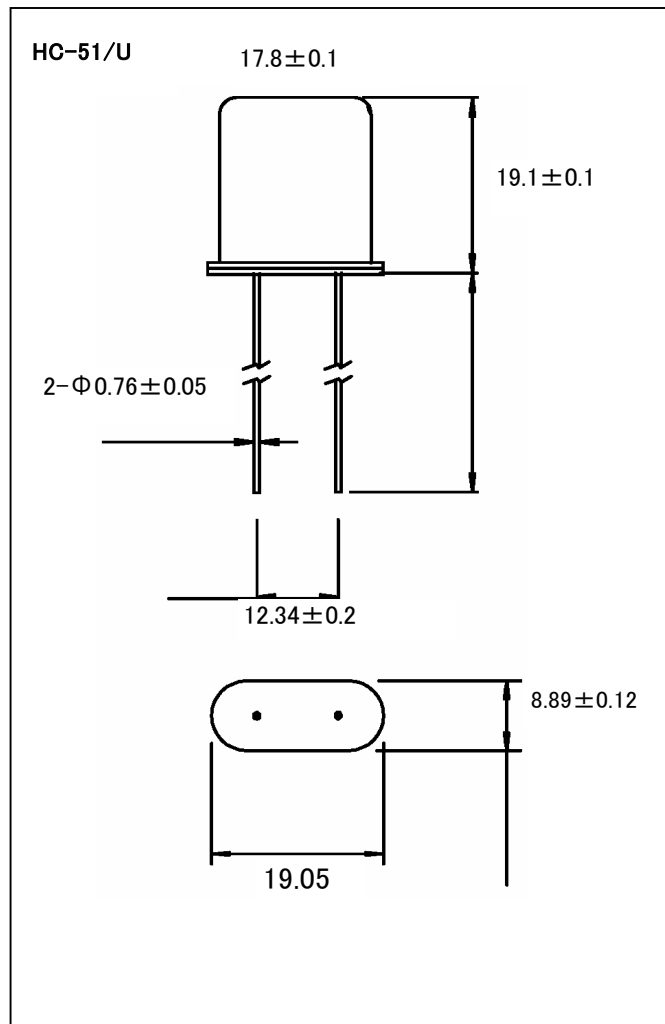
Item	Specifications	
Frequency Range	1.0~2.0MHz	2.0~4.0MHz
Frequency Tolerance	±20PPM at 25±3°C	
Frequency Stability	±50PPM at -10~+60°C	
Load Capacitance	30pF	
Drive Level	1.0mW	
Equivalent Series Resistance	800~400Ω	300~100Ω
Operating Temperature Range	-10°C ~ +60°C	
Storage Temperature Range	-40°C ~ +85°C	

Features

- ▶ AT CUT crystal units
- ▶ Industry standard packages

Outline Drawing

Unit : mm



OMCG CO., LTD

5F daVinci Shin-Yokohama131Bldg., 1-3-1, Shin-Yokohama, Kohoku-ku, Yokohama-city, Kanagawa 222-0033, Japan
 Tel: 045-476-3440 Fax: 045-476-3443 E-mail: postmaster@omcg.jp

MICROPROCESSOR CRYSTAL UNIT

OMCG CO., LTD

SERIES :

HC-51UL, HC-48UL

**LOW
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Specifications

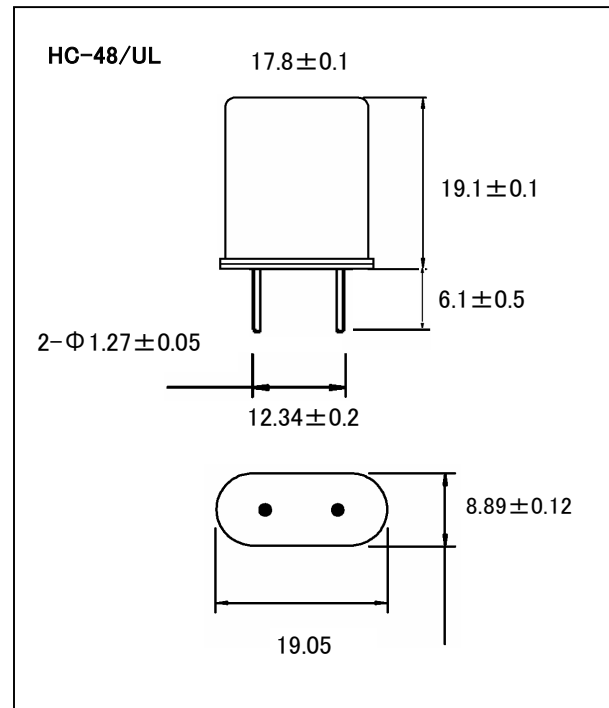
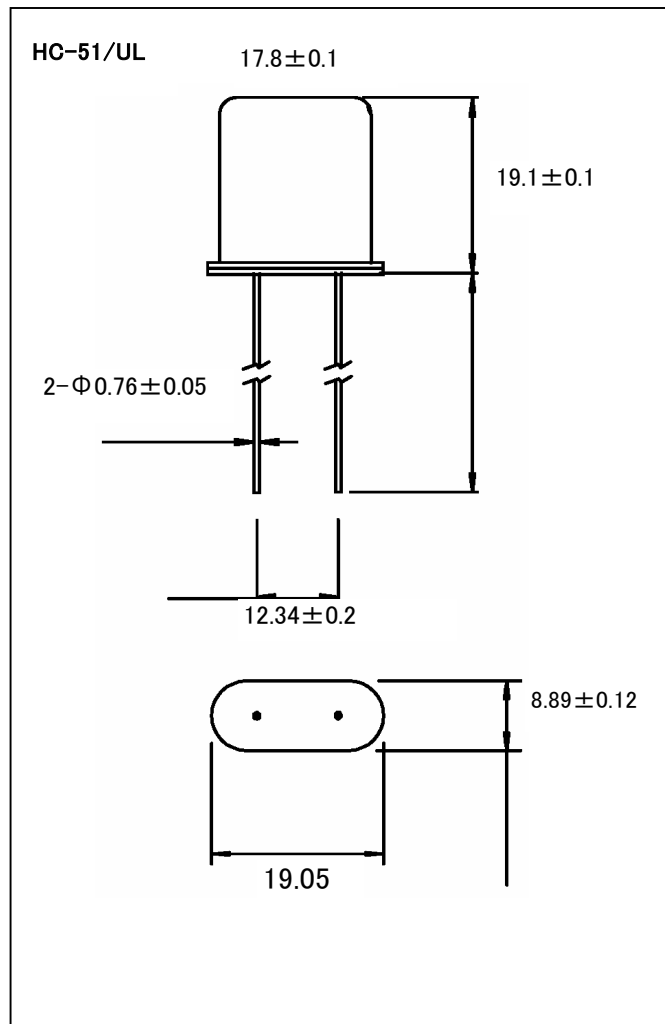
Item	Specifications	
Frequency Range	150~655kHz	670~920kHz
Frequency Tolerance	±50PPM at 25±3°C	
Frequency Stability	±100PPM at -10~+60°C	
Load Capacitance	30pF	
Drive Level	0.5mW	
Equivalent Series Resistance	2.5kΩ	3kΩ
Operating Temperature Range	-10°C ~ +60°C	
Storage Temperature Range	-40°C ~ +85°C	

Features

- ▶ Low frequency range
- ▶ Industry standard packages

Outline Drawing

Unit : mm



OMCG CO., LTD

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MICROPROCESSOR CRYSTAL UNIT



SERIES :

HC-13WL, HC-13UL

LOW
Frequenc

● Specifications

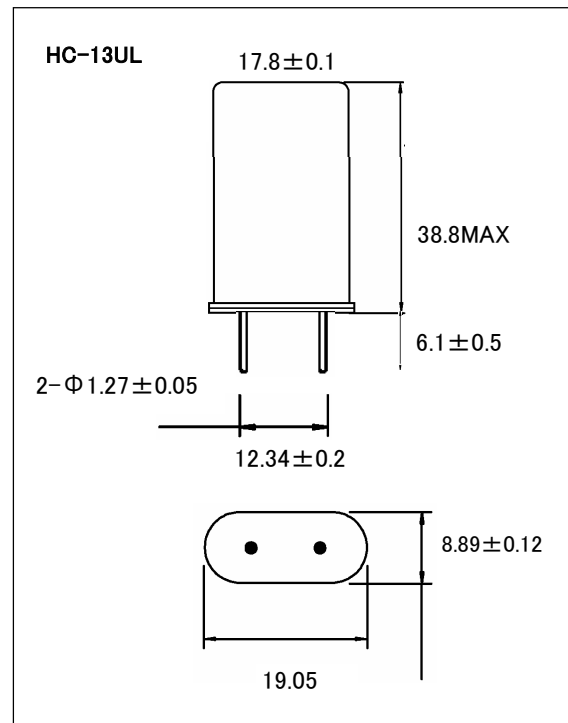
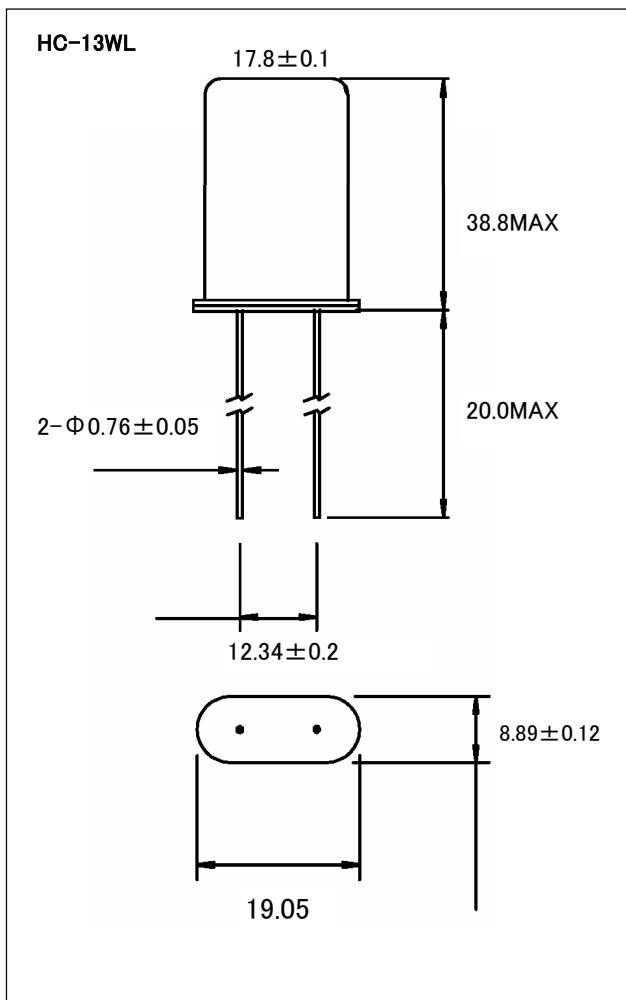
Item	Specifications		
Frequency Range	20~50kHz	50.1~80kHz	80.1~160kHz
Frequency Tolerance	±50PPM at 25±3°C		
Frequency Stability	±100PPM at 0~+50°C		
Load Capacitance	30pF		
Drive Level	0.5mW		
Equivalent Series Resistance	50kΩ	15kΩ	3kΩ
Operating Temperature Range	0°C ~ +50°C		

● Features

- ▶ Low frequency range
- ▶ Industry standard packages

● Outline Drawing

Unit : mm



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