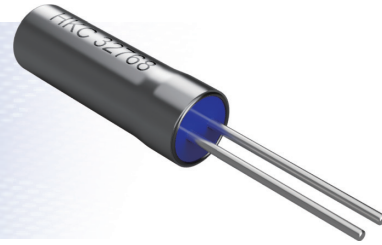




Cylinder Type Tuning Fork Crystals

2x6 / 3x8 Series

Model 2T / 3T 2 x 6 Cylinder / 3 x 8 Cylinder



Frequency Range : 32.768KHz ; 28.00KHz to 100.00KHz

Features :

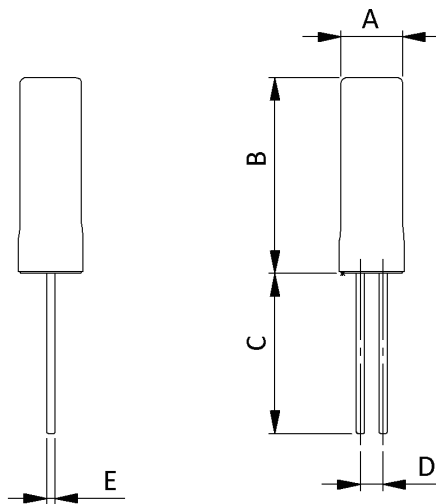
- High reliability & low cost unit
- Tight stability & extended temperature available
- RoHS compliant

QUARTZ
CRYSTALS

Standard Specifications

Item	Value	
Frequency Range	32.768KHz	28.00KHz to 100.00KHz
ESR	40kOhm Max	50kOhm Max.
Frequency Tolerance	±20ppm (or specify)	
Temperature Coefficient	-0.034±0.006ppm/°C ²	
Operating Temperature Range	-20°C to +70°C (or specify)	
Operable Temperature Range	-40°C to +85°C	
Turnover Temperature	25°C±5°C	
Drive Level	0.1uW Typ. (1.0uW Max.)	
Load Capacitance	12.5pF (or specify)	
Shunt Capacitance	2.0pF Max.	

Dimension



TYPE	A	B	C	D	E
2T	∅2.0	6.2 Max	5.0 Min	0.7	∅0.25
3T	∅3.0	8.2 Max	9.0 Min	0.8	∅0.33

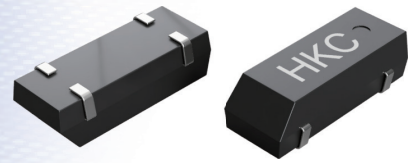
Note :

1. Manufacturer reserves the right to change the specification and content of this product for improvement without notification.
2. Custom specification is welcome. Please contact our sales representative for further details.
3. If the crystal is intended for applications which have direct impact on human life and properties, and require a high degree of reliability and safety concerns, customers must provide full information such as but not limit to the application, electrical and reliability specification at the inquiry beginning stage.
4. Customers have to agree to the "Guideline for handling crystal units" and "Standard Terms and Condition of Sales" which is printed in this catalog before placing orders to our company or our distributors. There are also unpredictable factors such as applied condition, oscillation margin and etc and customers must check them beforehand. In case of queries, please do not fail to send inquiry to our company before ordering.





Plastic SMD Crystals 8038PX Series



Model M3

8.0 x 3.8 Plastic SMD

Frequency Range : 32.768KHz ; 28.00KHz to 100.00KHz

Features :

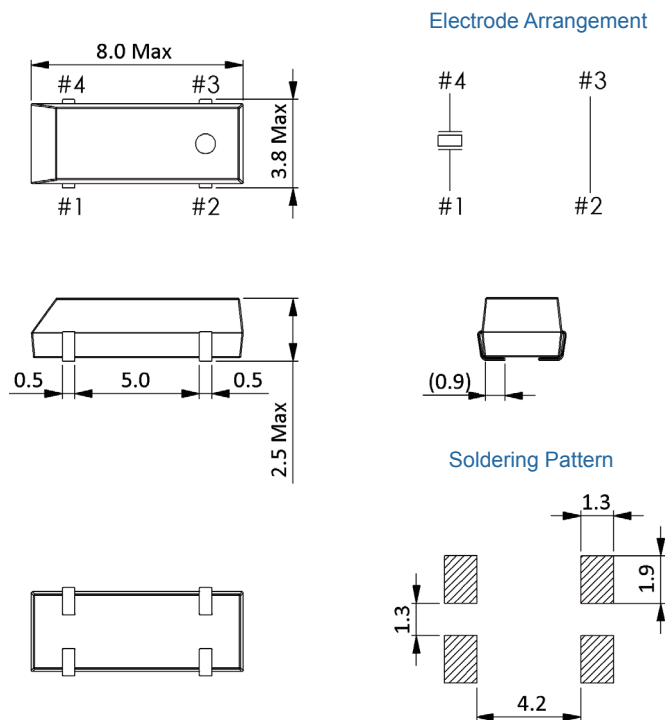
- High reliability & low cost unit
- Tight stability & extended temperature available
- RoHS compliant
- 260°C reflow compatible
- For automotive applications, please contact our sales representatives

QUARTZ
CRYSTALS

Standard Specifications

Item	Value	
Frequency Range	32.768KHz	28.00KHz to 100.00KHz
ESR	50kOhm Max.	50kOhm Max.
Frequency Tolerance	±20ppm (or specify)	
Temperature Coefficient	-0.034±0.006ppm/°C ²	
Operating Temperature Range	-20°C to +70°C (or specify)	
Operable Temperature Range	-40°C to +85°C	
Turnover Temperature	25°C±5°C	
Drive Level	0.1uW Typ. (1.0uW Max.)	
Load Capacitance	12.5pF (or specify)	
Shunt Capacitance	2.0pF Max.	

Dimension



Remark: Do not connect #2 and #3 to external circuit or GND (floating)

Note :

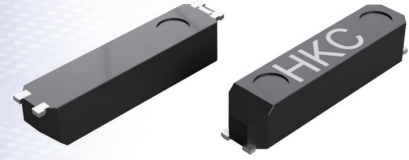
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2. Custom specification is welcome. Please contact our sales representative for further details.
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Ver 1.1





Plastic SMD Crystals 7015PX Series



Model M6

7.0 x 1.5 Plastic SMD

Frequency Range : 32.768KHz

Features :

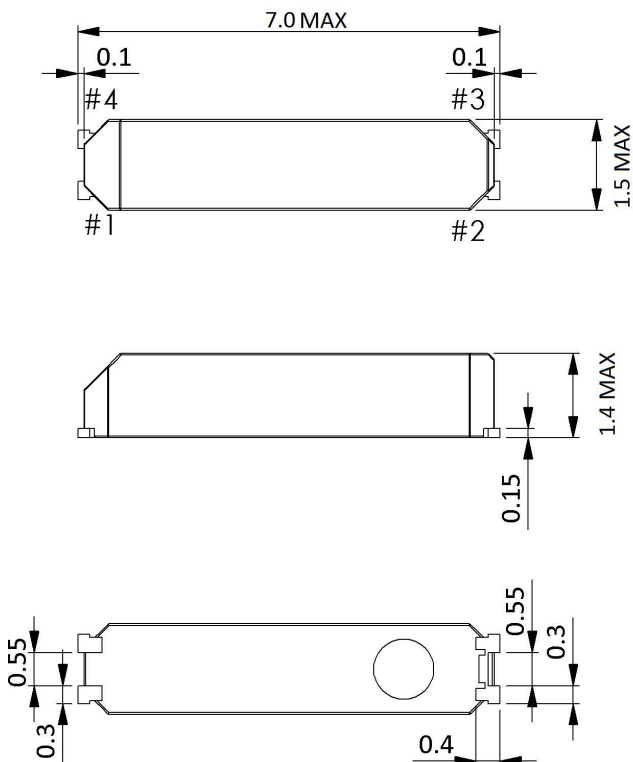
- High reliability & low cost unit
- Tight stability & extended temperature available
- RoHS compliant
- 260°C reflow compatible

QUARTZ
CRYSTALS

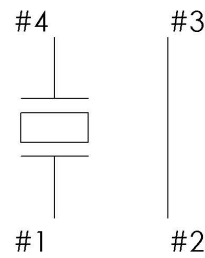
Standard Specifications

Item	Value
Frequency Range	32.768KHz
ESR	65kOhm Max.
Frequency Tolerance	±20ppm (or specify)
Temperature Coefficient	-0.034±0.006ppm/°C ²
Operating Temperature Range	-20°C to +70°C (or specify)
Operable Temperature Range	-40°C to +85°C
Turnover Temperature	25°C±5°C
Drive Level	0.1uW Typ. (0.5uW Max.)
Load Capacitance	12.5pF (or specify)
Shunt Capacitance	2.5pF Max.

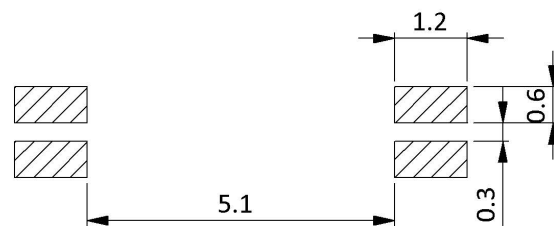
Dimension



Electrode Arrangement



Soldering Pattern



Note :

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2. Custom specification is welcome. Please contact our sales representative for further details.
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Ver 1.2

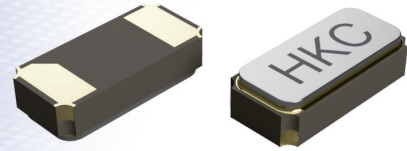




Ceramic SMD Crystals 3215SX Series

Model M8

3.2 x 1.5 Ceramic SMD



Frequency Range : 32.768KHz

Features :

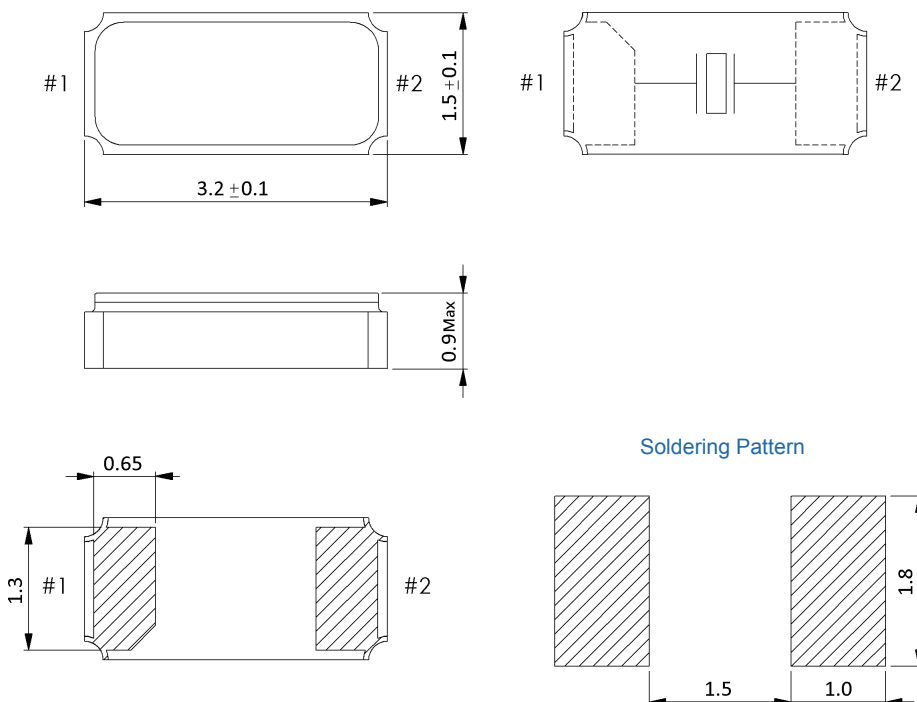
- High reliability & low cost unit
- Compact design
- RoHS compliant
- Lead free
- 260°C reflow compatible
- For automotive applications, please contact our sales representatives

QUARTZ
CRYSTALS

Standard Specifications

Item	Value
Frequency Range	32.768KHz
ESR	70kOhm Max.
Frequency Tolerance	±20ppm (or specify)
Temperature Coefficient	-0.040±0.006ppm/°C ²
Operating Temperature Range	-20°C to +70°C (or specify)
Operable Temperature Range	-40°C to +85°C
Turnover Temperature	25°C±5°C
Drive Level	0.1uW Typ. (0.5uW Max.)
Load Capacitance	12.5pF (or specify)
Shunt Capacitance	1.8pF Max.

Dimension



Note :

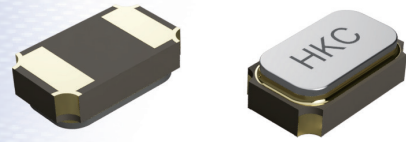
1. Manufacturer reserves the right to change the specification and content of this product for improvement without notification.
2. Custom specification is welcome. Please contact our sales representative for further details.
3. If the crystal is intended for applications which have direct impact on human life and properties, and require a high degree of reliability and safety concerns, customers must provide full information such as but not limit to the application, electrical and reliability specification at the inquiry beginning stage.
4. Customers have to agree to the "Guideline for handling crystal units" and "Standard Terms and Condition of Sales" which is printed this catalog before placing orders to our company or our distributors. There are also unpredictable factors such as applied condition, oscillation margin and etc and customers must check them beforehand. In case of queries, please do not fail to send inquiry to our company before ordering.

Ver 1.1





Ceramic SMD Crystals 2012SX Series



Model MQ 2.0 x 1.2 Ceramic SMD

Frequency Range : 32.768KHz

Features :

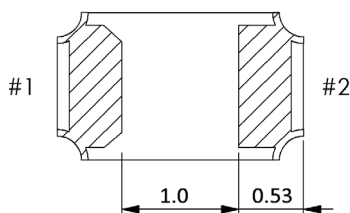
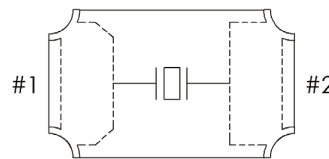
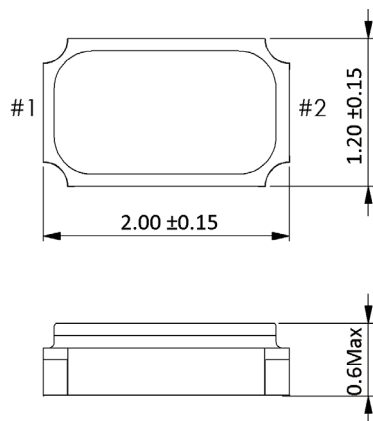
- High reliability & low cost unit
- Compact design
- RoHS compliant
- Lead free
- 260°C reflow compatible

QUARTZ
CRYSTALS

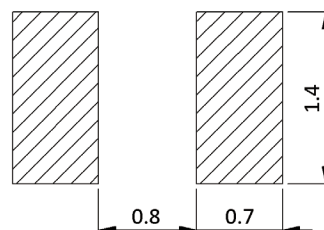
Standard Specifications

Item	Value
Frequency Range	32.768KHz
ESR	90kOhm Max.
Frequency Tolerance	±20ppm (or specify)
Temperature Coefficient	-0.045ppm/°C ² Max.
Operating Temperature Range	-20°C to +70°C (or specify)
Operable Temperature Range	-40°C to +85°C
Turnover Temperature	25°C±5°C
Drive Level	0.1uW Typ. (0.5uW Max.)
Load Capacitance	12.5pF (or specify)
Shunt Capacitance	2.0pF Max.

Dimension



Soldering Pattern



Note :

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Ver 1.1

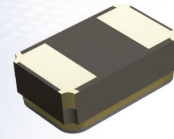




Ceramic SMD Crystals 1610SX Series

Model MT

1.6 x 1.0 Ceramic SMD



Frequency Range : 32.768KHz

Features :

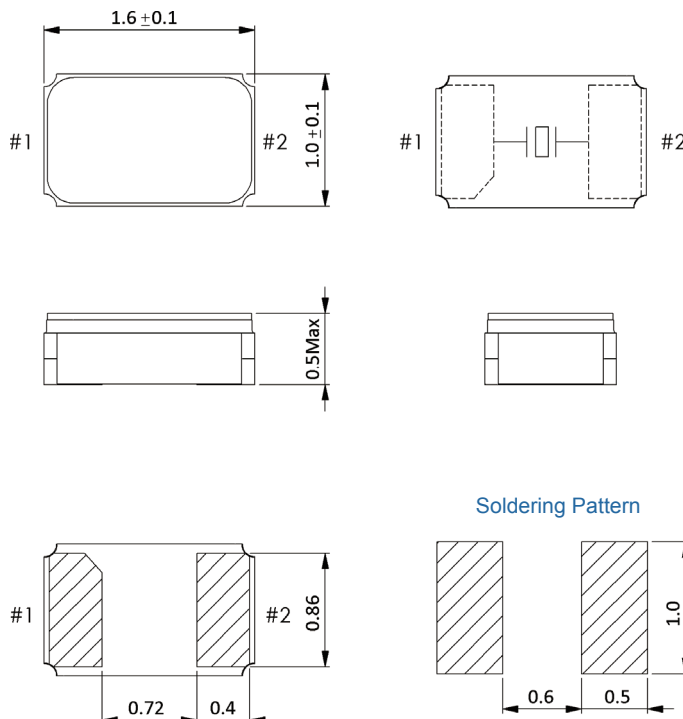
- High reliability & low cost unit
- Compact design
- RoHS compliant
- Lead free
- 260°C reflow compatible

QUARTZ
CRYSTALS

Standard Specifications

Item	Value
Frequency Range	32.768KHz
ESR	90kOhm Max.
Frequency Tolerance	±20ppm (or specify)
Temperature Coefficient	-0.045ppm/°C ² Max.
Operating Temperature Range	-20°C to +70°C (or specify)
Operable Temperature Range	-40°C to +85°C
Turnover Temperature	25°C±5°C
Drive Level	0.1uW Typ. (0.5uW Max.)
Load Capacitance	12.5pF (or specify)
Shunt Capacitance	2.0pF Max.

Dimension



Note :

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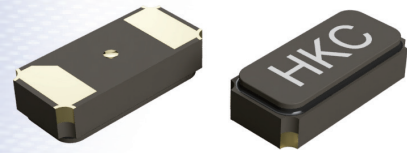
Ver 1.1





Ceramic SMD - Glass Frit Crystals 3215GX Series

Model P8 3.2 x 1.5 Ceramic SMD - Glass Frit



Frequency Range : 32.768KHz

Features :

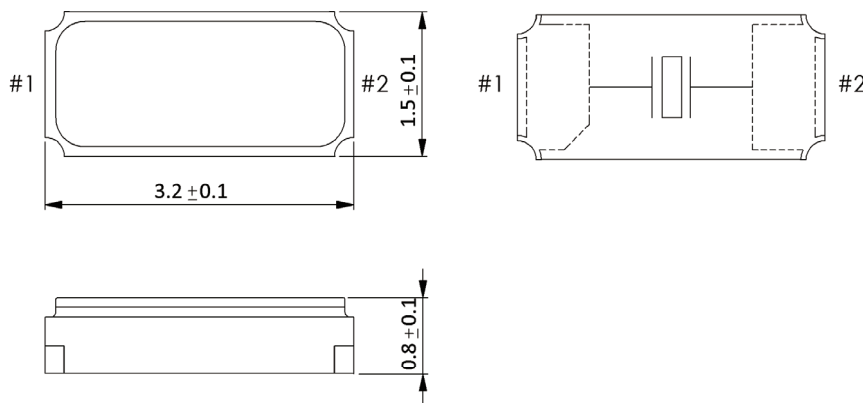
- High reliability & low cost unit
- Compact design
- RoHS compliant
- 260°C reflow compatible

QUARTZ
CRYSTALS

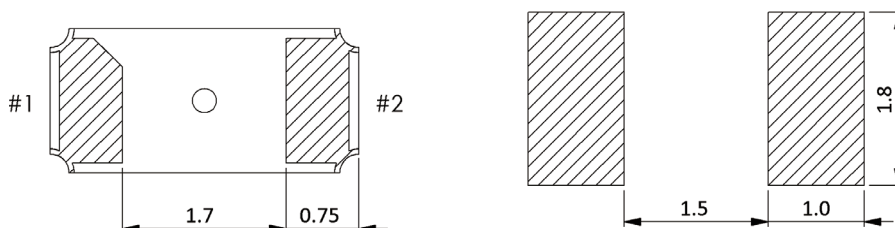
Standard Specifications

Item	Value
Frequency Range	32.768KHz
ESR	70kOhm Max
Frequency Tolerance	±20ppm (or specify)
Temperature Coefficient	-0.040/°C ² Max.
Operating Temperature Range	-20°C to +70°C (or specify)
Operable Temperature Range	-40°C to +85°C
Turnover Temperature	25°C±5°C
Drive Level	0.1uW Typ. (0.5uW Max.)
Load Capacitance	12.5pF (or specify)
Shunt Capacitance	1.8pF Max.

Dimension



Soldering Pattern



Note :

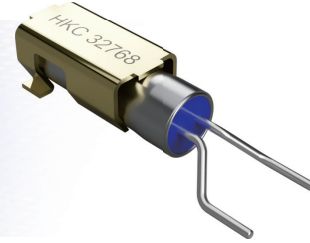
1. Manufacturer reserves the right to change the specification and content of this product for improvement without notification.
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Ver 1.1





Cylinder Bend Lead Type With Gull Wing 2x6SM Series



Model SJ 2 x 6 Cylinder Bend Lead Type With Gull Wing

Frequency Range : 32.768KHz ; 28.00KHz to 100.00KHz

Features :

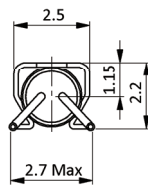
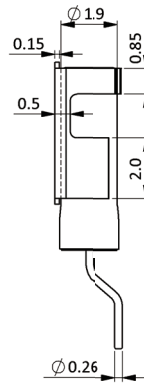
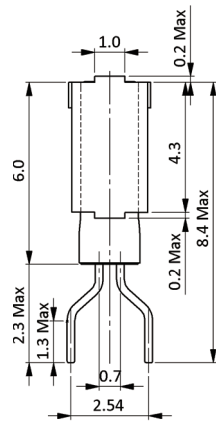
- High reliability & low cost unit
- Tight stability & extended temperature available
- RoHS compliant
- Formed lead SMD type available

QUARTZ
CRYSTALS

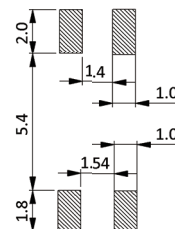
Standard Specifications

Item	Value	
Frequency Range	32.768KHz	28.00KHz to 100.00KHz
ESR	40kOhm Max.	50kOhm Max.
Frequency Tolerance	±20ppm (or specify)	
Temperature Coefficient	-0.034±0.006ppm/°C ²	
Operating Temperature Range	-20°C to +70°C (or specify)	
Operable Temperature Range	-40°C to +85°C	
Turnover Temperature	25°C±5°C	
Drive Level	0.1uW Typ. (1.0uW Max.)	
Load Capacitance	12.5pF (or specify)	
Shunt Capacitance	2.0pF Max.	

Dimension



Soldering Pattern



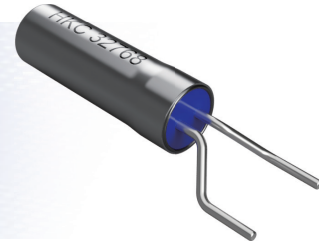
Note:

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Cylinder Bend Lead Type 2x6SM Series



Model ST

2 x 6 Cylinder Bend Lead Type

Frequency Range : 32.768KHz ; 28.00KHz to 100.00KHz

Features :

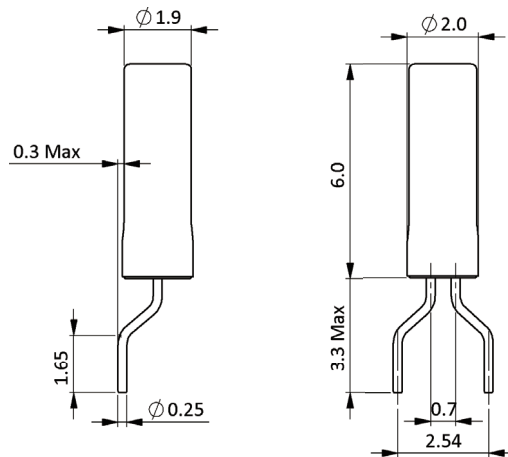
- High reliability & low cost unit
- Tight stability & extended temperature available
- RoHS compliant
- Formed lead SMD type available

QUARTZ
CRYSTALS

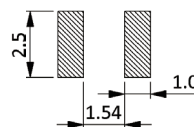
Standard Specifications

Item	Value	
Frequency Range	32.768KHz	28.00KHz to 100.00KHz
ESR	40kOhm Max.	50kOhm Max.
Frequency Tolerance	±20ppm (or specify)	
Temperature Coefficient	-0.034±0.006ppm/°C ²	
Operating Temperature Range	-20°C to +70°C (or specify)	
Operable Temperature Range	-40°C to +85°C	
Turnover Temperature	25°C±5°C	
Drive Level	0.1uW Typ. (1.0uW Max.)	
Load Capacitance	12.5pF (or specify)	
Shunt Capacitance	2.0pF Max.	

Dimension



Soldering Pattern



Note :

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