

Serial No, 2006-1228



DATE: 2006.09.05

GUANDONG MIDEA GROUND HOLDING CO.,LTD.

ITEM: QUARTZ CRYSTAL

TYPE: DT-38

NOMINAL FREQUENCY: 32.768kHz

SPEC No. TIANJIN:1TC125JHNS001

Please acknowledge receipt of this specification by signing and returning a copy to us .

RECEIPT	
DATE	
RECEIVED	(signature) (name)

General Manufacturer of Quartz Devices

DAISHINKU CORP.

1389 Shinzaike, Hiraoka-cho, Kakogawa, Hyogo
675-0194 Japan
Phone (81)794-25-3141 Fax(81)794-25-1134
<http://www.kds.info/english.html>

C.ENG. T. Nakamura.

ENG. H. Nasu

1. ELECTRICAL CHARACTERISTICS (measured at +25deg.C+/-2deg.C)

1-1	NOMINAL FREQUENCY	32.768 kHz
1-2	FREQUENCY TOLERANCE	+/-50 ppm Max.
1-3	LOADING CAPACITANCE	12.5 pF
1-4	EQUIVALENT RESISTANCE	40 kohm Max. / Series
1-5	MEASUREMENT DRIVE LEVEL	1.0 +/- 0.2uW
1-6	TURNOVER TEMPERATURE	25deg.C +/- 5deg.C
1-7	PARABOLIC CURVATURE CONSTANT	- 0.04 ppm/deg.C ² Max.
1-8	INSULATION RESISTANCE	500 Mohm Min. at D.C. 100V Lead to Lead ,Lead to Case
1-9	OPERATING TEMP. RANGE	- 10 deg.C to + 60 deg.C
1-10	STORAGE TEMP. RANGE	- 20 deg.C to + 70 deg.C
1-11	AGING	+/- 5 ppm Max./ year

MANUFACTURING LOCATION	SPEC No.
TIANJIN	1TC125JHNS001

2. CONSTRUCTION

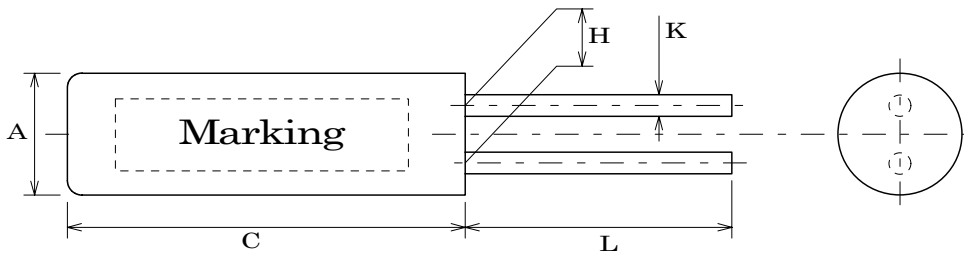
2-1	HOLDER	DT-38
2-2	DIMENSIONS AND MARKING	Refer to Fig-1 and Fig-2.

3. OTHER SPECIFICATIONS

Environmental and mechanical endurance shall be specified by attached general specifications.

TITLE DT-38 TYPE QUARTZ CRYSTAL SPECIFICATION	Trigonometry	Unit MM	Scale
Date 2006/09/01	Drawing No.	Rev.	Page 1/2

Dimensions



A	C	H	K	L
dia.3.1 Max.	8.3 Max.	1.1+/-0.2	dia.0.35+/-0.07	10.0+/-1.0

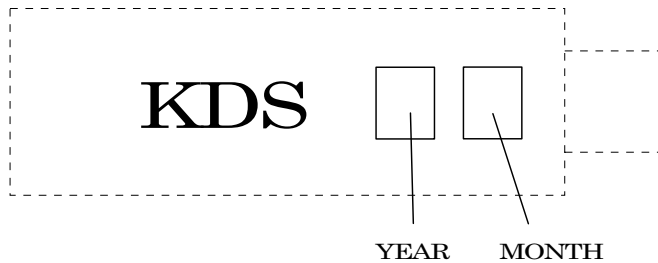
(UNIT:mm)

Fig-1

Marking

Manufacturer's code and manufacturing date should be marked on the surface of holder as an applicable drawing shows.

*Marking direction is not specified.



(*) YEAR : The last digit of the year
 EX) 2006 shall be marked as "6"
 MONTH : As shown in the Table
 EX) Sep. shall be marked as "J"

MONTH	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
SYMBOL	A	B	C	D	E	F	G	H	J	K	L	M

Fig-2

TITLE DT-38 TYPE QUARTZ CRYSTAL SPECIFICATION				Trigonometry				Unit MM		Scale	
Date 2006/09/01				Drawing No.				Rev.		Page 2/2	

1.Mechanical Endurance

Item	Standard	Condition
Vibration Resistance	f_0 : \pm 3 ppm max.	(1)Vibration 30 to 120Hz (2)Cycle 2 min (3)G Force 3G (4)Time 20 min X,Y,Z Each Direction.
Shock Resistance	f_0 : \pm 3 ppm max.	Natural drops from 75 cm height on a wooden board (3 cm thickness) 3 times. Measuring 5 min after the test.
Hermetical Sealing	1×10^{-9} Pa·m ³ /s max.	Testing by Helium leak detector.
Terminal Strength	No visual damage	Bending terminals at +90deg., then at -90deg., then at +90deg., and then unbending at 0deg.at 1 mm from the bottom of case. One way is counted as one time, it can be endured up to three times.
Soldering Heat Resistance	f_0 : \pm 3 ppm max.	Dipping terminals to 1 mm from the bottom of case into the solder pot at +245 \pm 5deg.C for 3s. Measuring 1h after the test at +25deg.C.
Solder ability	90 % min.	Terminals solder able at a bath temperature of +245 \pm 5deg.C for 3s. (with flux)

2.Environmental Endurance


Item	Standard	Condition
High Temp. Storage	f_0 : \pm 3 ppm max.	+70deg.C*24h Measuring 2h after the test at +25deg.C.
Low Temp. Storage	f_0 : \pm 3 ppm max.	-30deg.C*24h Measuring 2h after the test at +25deg.C.
Moisture Storage	f_0 : \pm 3 ppm max.	+40deg.C*24h in 90 % relative humidity. Measuring 2h after the test at +25deg.C.

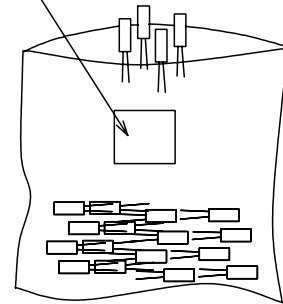
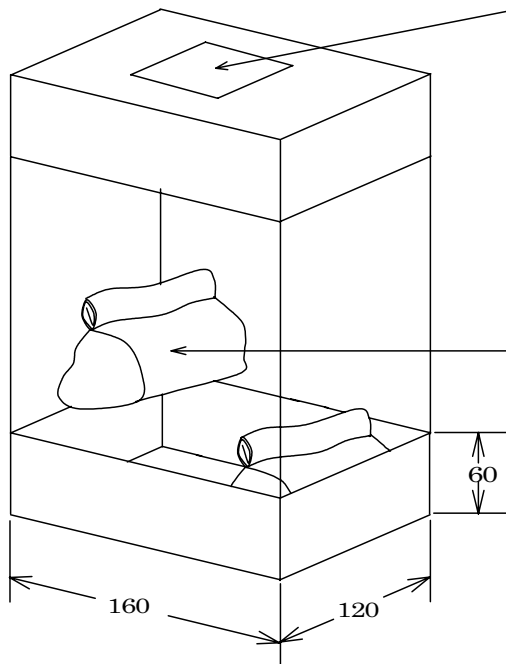
TITLE DT-38 TYPE QUARTZ CRYSTAL SPECIFICATION	Trigonometry	Unit MM	Scale
Date 2006/09/01	Drawing No.	Rev.	Page 1/1

(INNER BOX)

A green dot is marked onto the shipping label.

PRODUCT SLIP

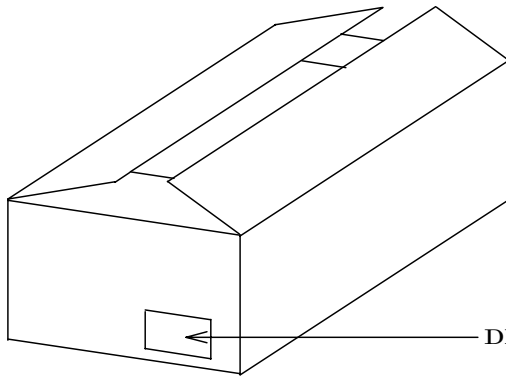
TYPE	<input type="text"/>	HOLDER
SPEC No.	<input type="text"/>	SPEC No.
PARTS No.	<input type="text"/>	USER PARTS No.
Lot No.	<input type="text"/>	LOT No.
FREQ.	<input type="text"/>	FREQUENCY
QTY	<input type="text"/>	QUANTITY
KDS  MADE IN <input type="text"/>		COUNTRY OF ORIGIN



(UNIT :mm)

2000 units per plastic bag. 3 plastic bags in an inner box. A product slip is attached on the inner box. (As for odd unit, shall be packed in a plastic bag.)

(OUTER BOX)



Crystal units shall be packed in inner box by production lot. Outer carton size would be changed depending on lot size. The description label shall be put on outer carton.

DESCRIPTION LABEL

TITLE DT-38 TYPE QUARTZ CRYSTAL SPECIFICATION	Trigonometry	Unit MM	Scale
Date 2006/09/01	Drawing No.	Rev.	Page 1/1

User Manual for Tuning Fork Type Crystal Units (Cylinder Type)

1. Shock

Do not add excessive shocks to units, otherwise characteristic deterioration or no-oscillation may be caused. Please be careful not to drop, and operate them on the shock free condition. Please also confirm the condition before applying automatic mounting or changing the condition of use.

2. Temperature and Humidity

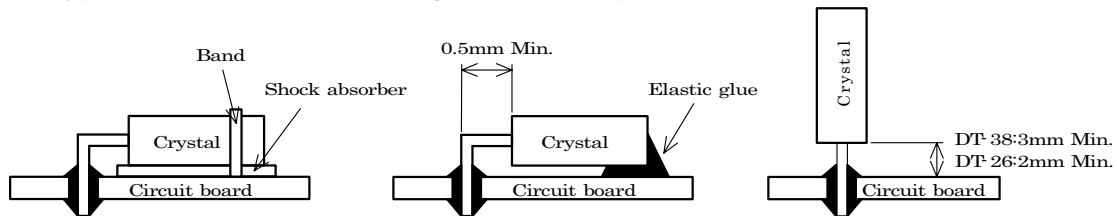
Operation or storage in high-temperature, low-temperature or high-humidity may cause the deterioration of units. Please operate or store them under the condition of normal temperature and the normal humidity.

3. Solder Heat

Solder which shall be melt at 217deg is used inside of these units, and therefore characteristic deterioration or no-oscillation may be caused if the units body temperature comes 150deg or over. Please use SMD or heat-resistant type units when applying the above temperature. And please deeply concern about temperature condition or consult with us when applying flow-soldering. Also please remind to solder at 280deg max. with 5 seconds max., or at 260deg max. with 10 seconds max. at the leads. Please do not apply solder to the body of units directly, as it may cause characteristic deterioration.

4. Mounting

Fix the units firmly if laid condition on circuit board is required. Especially under the vibrating condition, insert shock absorber between the unit and circuit board, or fix the unit with elastic glue (silicon applied) onto the board. Please do not put the glue onto glass part of units. It is also suggested to keep the unit away from circuit board more than 3mm for DT-38 type and 2mm for DT-26 type, if solder the unit at standing condition is required.



5. Lead Cutting and Lead Forming

Please keep your lead cutter in good condition, when applying the leads cutting. If forming or reforming the leads, do not add excessive power to the roots of leads or do not press sealing areas, otherwise the crack of glass or the leak may be caused. Please do not cut or bend the leads within 0.5 mm from the base of the cylinder body.

6. Ultrasonic Washing and Ultrasonic Welding

Original characteristics cannot be guaranteed when ultrasonic welding is applied, due to the damage of inside crystal blank by sympathetic vibration, and this may cause no-oscillation of units. Please consult with us if ultrasonic washing is required.

7. Drive Level

Oscillation in excessive drive level may cause characteristic deterioration or no-oscillation. For this product, drive level as less than 1.0uW is recommended. And original characteristics cannot be guaranteed when more than 2.0uW is supplied.

Thank you very much.

Please do contact us to below if you have any question.

Daishinku Corporation
 R&D Engineering Dept.
 179-15 Mizuashi, Noguchi-cho,
 Kakogawa-city, Hyogo-pref.,
 675-0194 Japan
 Tel : +81(079)421-7200
 Fax : +81(079)421-7240

TITLE DT-38 TYPE QUARTZ CRYSTAL SPECIFICATION	Trigonometry	Unit MM	Scale
Date 2006/09/01	Drawing No.	Rev.	Page 1/1

