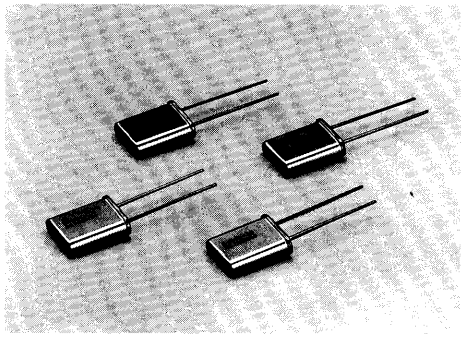
HC-49/u Resistance Weld



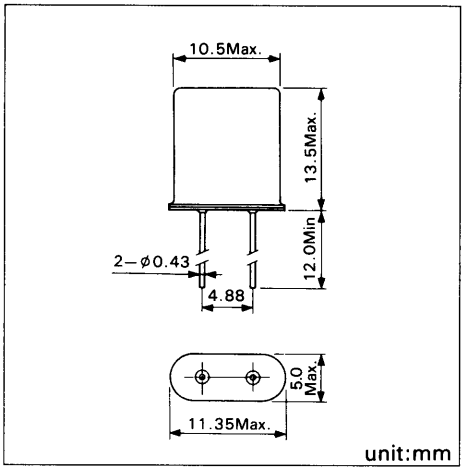
● Features and Applications

A variety of standard frequencies are available. This version is suitable for CTVs, VTRs.

● Standard Specifications

1. Holder type ····· HC-49/u
2. Frequency range ····· 1.800MHz to 150.000MHz
3. Calibration tolerance ····· at + 25°C
   HC49U2 ····· ± 50ppm
   HC49U3 ····· ± 30ppm
4. Temperature stability* ····· ± 30ppm over − 10°C to + 70°C
5. Drive level ····· 1mW Max.
6. Cut ····· AT-cut
7. Load capacitance** ····· 16pF, 20pF, 32pF, series (00)
8. Equivalent series resistance ····· See page 16
9. Shunt capacitance ····· 7pF Max.
10. Marking ····· Frequency-code, Company mark, Date-code

Dimensions



● Type Description

MQX-HC49U2-04194-20

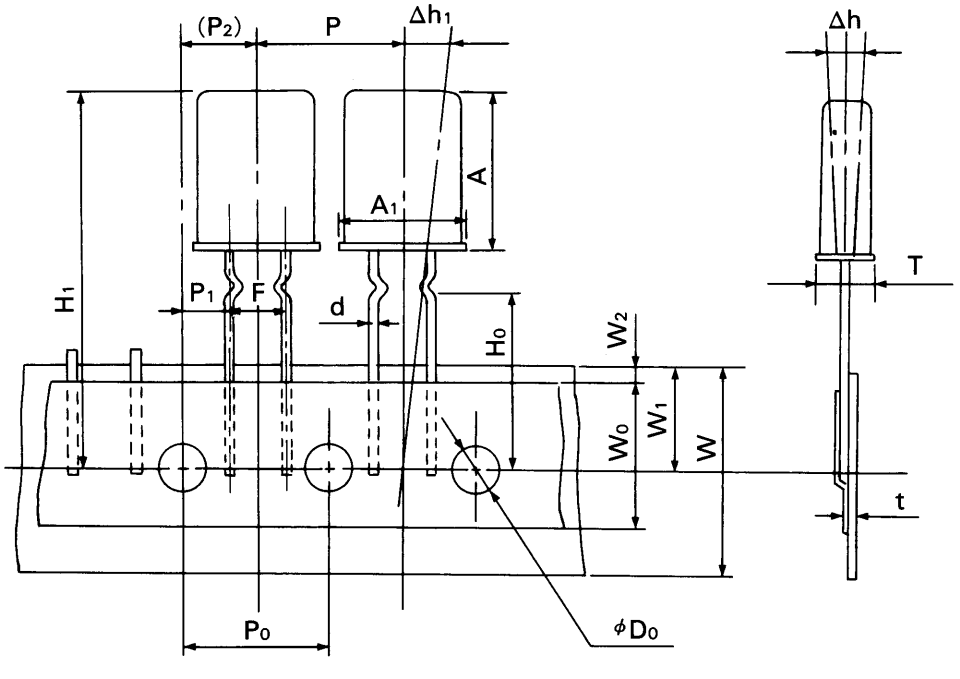
- Load capacitance**
- Frequency-code (see page 16)
- Holder and calibration tolerance
- Meiden standard quartz X'tal unit

● Example Frequencies (MHz)

1.843200	2.000000	2.457600	3.579545	3.582056	4.433619
4.435571	5.727272	5.824000	5.850000	6.144000	6.552000
7.151223	7.159090	7.164112	8.867238	12.288000	14.287500
14.318180	14.745600	17.734475	18.432000	22.909088	24.576000

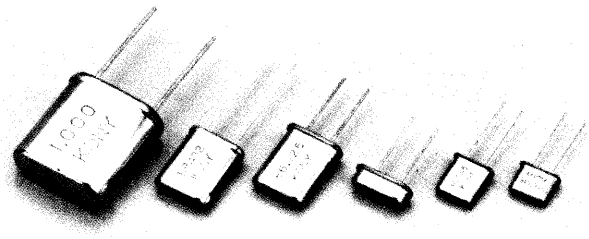
*Does not include calibration tolerance.
**If "00" suffix, crystal is series resonance.

Taping specifications



Symbol	Dimension
$A_1 \times A$	11.35×13.5Max.
T	5.0Max.
d	$\phi 0.43^{+0.05}_{-0.03}$
P	12.7±1.0
P_0	12.7±0.3
P_1	3.85±0.7
(P_2)	(6.35±1.3)
F	5.0±0.8
Δh	0±2.0
W	$18.0^{+1.0}_{-0.5}$
W_0	12.5Min.
W_1	$9.0^{+0.75}_{-0.5}$
W_2	3.0Max.
H_0	16±0.5
H_1	34.0Max.
D_0	φ4.0±0.2
t	0.7±0.2
L_1	2.0Max.
Δh_1	0±2.0

Standard Microprocessor Crystals



HC-33/U HC-18/U HC-49/U HC-49/S UM-1 UM-5

The accompanying selection chart lists KONY AT-cut quartz crystals for most common microprocessor applications. Frequencies, configurations, and circuit calibration conditions shown are those in general industry usage or are as recommended by the various microprocessor integrated circuit manufacturers.

The following standardized specifications, in addition to those shown in the selection chart, apply to this family of crystals.

1. FREQUENCY CALIBRATION TOLERANCE ..... ±0.005% @25°C
2. FREQUENCY STABILITY TOLERANCE ..... ±0.010% over 0 to +70°C
3. SHUNT CAPACITANCE ..... 7 pF maximum
4. MARKING ..... KONY, Frequency, Part Number

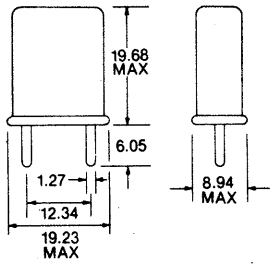
How To Order Standard Kony Crystals

Order by designated KONY Part Number and Holder Type shown in column 3 and 2 respectively.

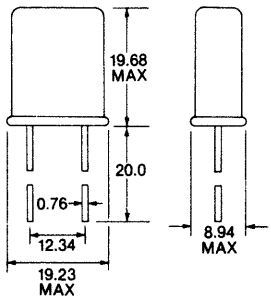
FREQUENCY MHZ	HOLDER TYPE	KONY PART NUMBER	CIRCUIT CALIBRATION CONDITIONS	MAX ESR OHMS
1.000000	HC-33/U	KON010 (A)	Series (13 pF)	700
1.843200	HC-33/U, 49/U	KON018 (A)	Series (13 pF)	350/700
2.000000	HC-33/U, 49/U	KON020 (A)	Series (20 pF)	300/500
2.457600	HC-33/U, 49/U	KON024 (A)	Series (32 pF)	240/300
3.000000	HC-49/U	KON030 (A)	Series (30 pF)	200
3.276800	HC-49/U	KON032 (A)	Series (15 pF)	150
3.579545	HC-49/U	KON035 (A)	Series (18 pF)	120
3.686400	HC-49/U	KON037	Series	120
4.000000	HC-49/U	KON040 (A)	Series (20 pF)	100
4.194304	HC-49/U	KON041 (A)	Series (12 pF)	100
4.433619	HC-49/U	KON044 (A)	Series (20 pF)	80
4.915200	HC-49/U	KON049	Series	55
5.000000	HC-49/U	KON050 (A)	Series (20 pF)	50
5.068800	HC-49/U	KON051	Series	50
6.000000	HC-49/U	KON060	Series	40
6.144000	HC-49/U	KON061	Series (30 pF)	40
6.553600	HC-49/U	KON065	Series	40
7.000000	HC-49/U	KON070	Series	40
7.159090	HC-49/U	KON071 (A)	Series (20 pF)	40
7.372800	HC-49/U	KON073	Series	40
8.000000	HC-49/U	KON080	Series	35
9.830400	HC-49/U	KON098	Series	35
10.000000	HC-49/U	KON100	Series	30
10.240000	HC-49/U	KON102 (A)	Series (32 pF)	30
10.738635	HC-49/U	KON107 (A)	Series (32 pF)	30
11.000000	HC-49/U	KON110	Series	30
11.059200	HC-49/U	KON111	Series	30
11.155000	HC-49/U	KON112	Series	30
11.981350	HC-49/U	KON119	Series	30
12.000000	HC-49/U	KON120	Series	30
12.288000	HC-49/U	KON122	Series	30
14.318180	HC-49/U	KON143 (A)	Series (32 pF)	25
14.745600	HC-49/U	KON147	Series	25
15.000000	HC-49/U	KON150	Series	25
16.000000	HC-49/U	KON160	Series	25
18.000000	HC-49/U	KON180	Series	20
18.432000	HC-49/U	KON184	Series	20
19.660800	HC-49/U	KON196	Series	20
20.000000	HC-49/U	KON200	Series	20
20.945000	HC-49/U	KON209 (A)	Series (32 pF)	20
21.855000	HC-49/U	KON218	Series	20
22.118400	HC-49/U	KON221	Series	20
24.000000	HC-49/U	KON240	Series	20
24.576000	HC-49/U	KON245	Series	40/3OT
25.000000	HC-49/U	KON250	Series	40/3OT
28.636360	HC-49/U	KON286	Series	40/3OT
32.000000	HC-49/U	KON320	Series	40/3OT
40.000000	HC-49/U	KON400	Series	40/3OT
48.000000	HC-49/U	KON480	Series	40/3OT
50.000000	HC-49/U	KON500	Series	40/3OT
64.000000	HC-49/U	KON640	Series	40/3OT
67.250000	HC-49/U	KON672	Series	40/3OT
75.000000	HC-49/U	KON750	Series	40/3OT
100.000000	HC-49/U	KON1000	Series	60/5OT
125.000000	HC-49/U	KON1250	Series	60/5OT
140.000000	HC-49/U	KON1400	Series	80/7OT
160.000000	HC-49/U	KON1600	Series	100/7OT

Solder Seal Type

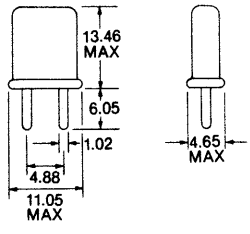
HC-6/U



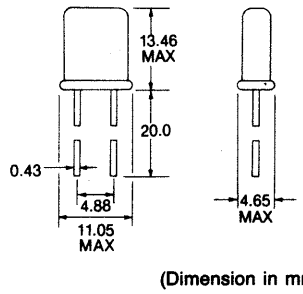
HC-33/U (HC-6/W)



HC-25/U



HC-18/U



(Dimension in mm)

Miniature Quartz Crystals

HC-49/S (ATS-49/U)

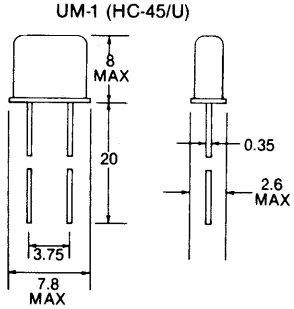
FREQUENCY MHZ	HOLDER TYPE	KONY PART NUMBER	CIRCUIT CALIBRATION CONDITIONS	MAX ESR OHMS
3.579545	HC-49/S	49S035 (18)	Series (18 pF)	200
3.686400	HC-49/S	49S037	Series	200
4.000000	HC-49/S	49S040 (20)	Series (20 pF)	150
4.194304	HC-49/S	49S041 (12)	Series (12 pF)	150
4.433619	HC-49/S	49S044 (20)	Series (20 pF)	150
4.915200	HC-49/S	49S049	Series	150
5.000000	HC-49/S	49S050 (20)	Series (20 pF)	120
5.068800	HC-49/S	49S051	Series	120
6.000000	HC-49/S	49S060	Series	120
6.144000	HC-49/S	49S061 (30)	Series (30 pF)	120
6.553600	HC-49/S	49S065	Series	120
7.000000	HC-49/S	49S070	Series	120
7.159090	HC-49/S	49S071 (20)	Series (20 pF)	120
7.372800	HC-49/S	49S073	Series	80
8.000000	HC-49/S	49S080	Series	80
9.830400	HC-49/S	49S098	Series	80
10.000000	HC-49/S	49S100	Series	60
10.738635	HC-49/S	49S107 (32)	Series (32 pF)	60
11.000000	HC-49/S	49S110	Series	60
11.059200	HC-49/S	49S111	Series	60
12.000000	HC-49/S	49S120	Series	60
14.318180	HC-49/S	49S143 (32)	Series (32 pF)	50
14.745600	HC-49/S	49S147	Series	50
15.000000	HC-49/S	49S150	Series	50
16.000000	HC-49/S	49S160	Series	50
18.000000	HC-49/S	49S180	Series	50
18.432000	HC-49/S	49S184	Series	50
19.660800	HC-49/S	49S196	Series	50
20.000000	HC-49/S	49S200	Series	50
22.118400	HC-49/S	49S221	Series	50
24.000000	HC-49/S	49S240	Series	50
28.636360	HC-49/S	49S286	Series	80/3OT
32.000000	HC-49/S	49S320	Series	80/3OT
40.000000	HC-49/S	49S400	Series	80/3OT
48.000000	HC-49/S	49S480	Series	80/3OT

UM-1 (HC-45/U) and UM-5

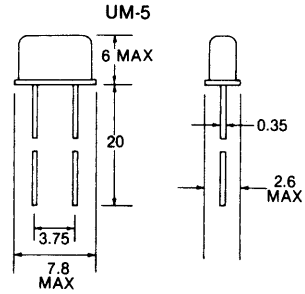
FREQUENCY MHZ	HOLDER TYPE	KONY PART NUMBER	CIRCUIT CALIBRATION CONDITIONS	MAX ESR OHMS
6.000000	UM-1	45N060	Series	120
6.144000	UM-1	45N061 (A)	Series (30 pF)	120
6.553600	UM-1	45N065	Series	120
7.000000	UM-1	45N070	Series	100
7.159090	UM-1	45N071 (A)	Series (20 pF)	100
7.372800	UM-1	45N073	Series	100
8.000000	UM-1	45N080	Series	80
9.830400	UM-1	45N098	Series	80
10.000000	UM-1	45N100	Series	60
10.738635	UM-1	45N107 (A)	Series (32 pF)	60
11.000000	UM-1	45N110	Series	50
11.059200	UM-1	45N111	Series	50
12.000000	UM-1	45N120	Series	40
14.318180	UM-1	45N143 (A)	Series (32 pF)	30
14.745600	UM-1, UM-5	45N147, 45T147	Series	30/50
15.000000	UM-1, UM-5	45N150, 45T150	Series	30/50
16.000000	UM-1, UM-5	45N160, 45T160	Series	30/50
18.000000	UM-1, UM-5	45N180, 45T180	Series	30/50
18.432000	UM-1, UM-5	45N184, 45T184	Series	30/50
19.660800	UM-1, UM-5	45N196, 45T196	Series	30/50
20.000000	UM-1, UM-5	45N200, 45T200	Series	30/40
20.945000	UM-1, UM-5	45N209, 45T209	Series	30/40
22.118400	UM-1, UM-5	45N221, 45T221	Series	30/40
24.000000	UM-1, UM-5	45N240, 45T240	Series	30/40
25.000000	UM-1, UM-5	45N250, 45T250	Series	30/40
32.000000	UM-1	45N320	Series	70/3OT
40.000000	UM-1	45N400	Series	60/3OT
48.000000	UM-1	45N480	Series	60/3OT
60.000000	UM-1	45N600	Series	50/3OT
75.000000	UM-1	45N750	Series	50/3OT
80.000000	UM-1	45N800	Series	50/3OT
100.000000	UM-1	45N1000	Series	100/5OT
125.000000	UM-1	45N1250	Series	120/5OT
140.000000	UM-1	45N1400	Series	130/7OT
160.000000	UM-1	45N1600	Series	130/7OT

Resistance Weld Type

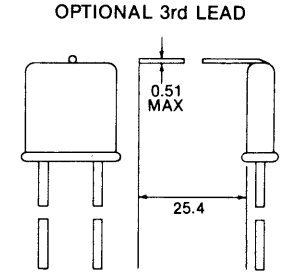
UM-1 (HC-45/U)



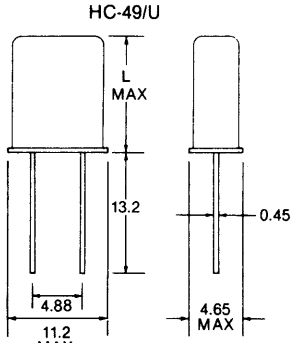
UM-5



OPTIONAL 3rd LEAD



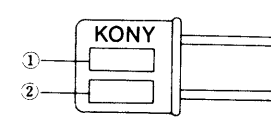
HC-49/U



HC-49/U Series

L	HOLDER TYPE
13.46	HC-49/U
11.30	HC-49/T
8.0	HC-49/M
4.0	HC-49/S

Standard Marking Format



① Frequency
② KONY Part Number

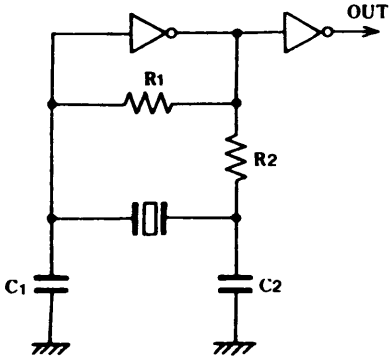
(Dimension in mm)

EXEMPLES DE CIRCUITS D'UTILISATION

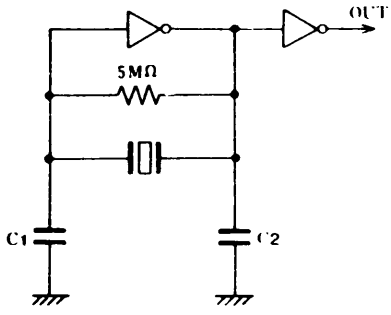
C-MOS

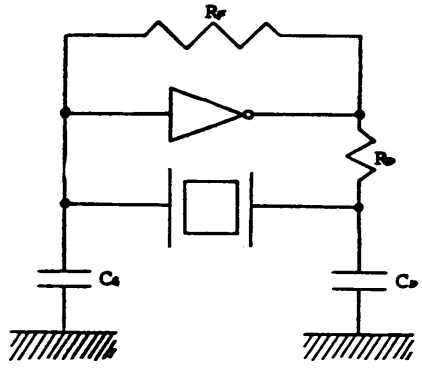
32,768 KHz

1 ~ 4 MHz (MC 14011.14049)



1 ~ 6 MHz (MC 14011.14069)





X'tal (MHz)	1	4
R_1 (MΩ)	10	5
R_2 (Ω)	2000	470
C_1 (pF)	50	33
C_2 (pF)	33	25

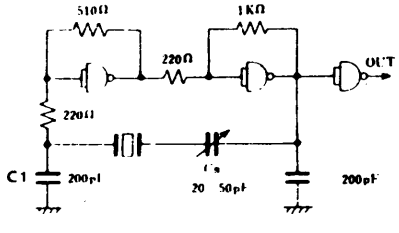
X'tal (MHz)	1 ~ 3	4 ~ 6
C_1 (pF)	50	33
C_2 (pF)	30	20

Inverter	Ex. 4049,4069
R_F (Feedback Resistor)	10 to 30 MOhm
R_P (Phase Resistor)	250 to 600 Ohm
C_D (Drain Capacitor)	10 to 30 pF
C_G (Gate Capacitor)	5 to 25 pF

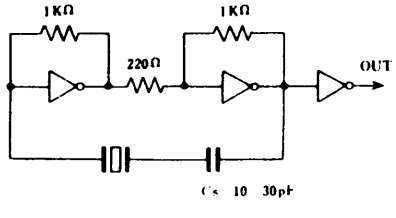
* C_1 and C_2 : Mica or Film Capacitor

TTL

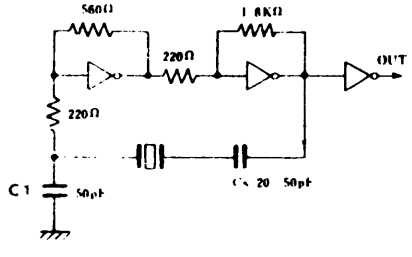
1 MHz (SN 7400)



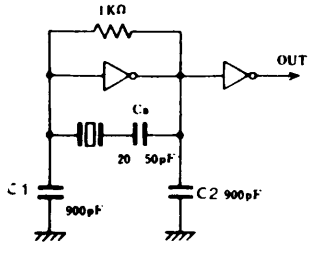
8 ~ 12 MHz (SN 74S04)



1 ~ 6 MHz (SN 7404)



4 ~ 8 MHz (SN 7404)



* C and C_2 : Mica or Film Capacitor

MANUDAX-FRANCE
60, rue de Wattignies 75580 PARIS CEDEX 12 - ☎ (1) 43.42.20.50 + - Télex 213 005 - Telefax (1) 43.45.85.62

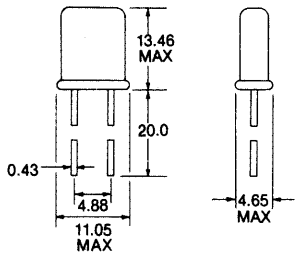
QUARTZ MICROPROCESSEURS

BOITIERS HC33U, HC18U et HC49U

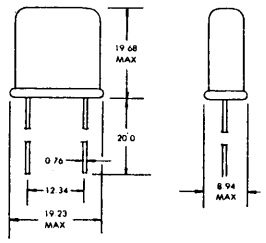
Caractéristiques :

- Précision à 25 °C : 50 ppm
- Stabilité entre 0 e 70°C : 100 ppm
- Capacité shunt Co : 7 pF max.
- Gamme de fréquences : 300 KHz à 160 MHz
- Résonnance fondamentale : possible jusqu'à 30 MHz
- Niveau d'exitation : Jusqu'à 10 MHz : 0,1 à 2 mW
  A partir de 10 MHz : 0,1 à 1 mW
- Capacité de charge : série à 50 pF

HC49U



HC33U



Liste de quartz standards

Fréquence (MHz)	Boitier	Référence	Capacité de charge (pF)	Résistance série max. (Ohms)	Fréquence	Boitier	Référence	Capacité de charge (pF)	Résistance série max. (Ohms)
1.000000	HC 33 U	MDX 010	13	700	8.000000	HC 49 U	MDX 080	Série	35
1.000000	HC 49 U	MDX 010 S	30	700	9.216000	HC 49 U	MDX 092	20 pF	35
1.843200	HC 33 U	MDX 018 A	13	350	9.830400	HC 49 U	MDX 098	Série	35
1.843200	HC 49 U	MDX 018 S	32	700	10.000000	HC 49 U	MDX 100	Série	30
2.000000	HC 49 U	MDX 020 S	20	500	10.738635	HC 49 U	MDX 107	32 pF	30
2.457600	HC 33 U	MDX 024 A	32	240	11.000000	HC 49 U	MDX 110	Série	30
2.457600	HC 49 U	MDX 024 S	32	300	11.059200	HC 49 U	MDX 111	Sére	30
3.000000	HC 49 U	MDX 030 A	32	200	11.059200	HC 49 U	MDX 111 A	20 pF	30
3.276800	HC 49 U	MDX 032 A	32	150	12.000000	HC 49 U	MDX 120	Série	30
3.579545	HC 49 U	MDX 035 A	32	120	12.288000	HC 49 U	MDX 122	20 pF	30
3.686400	HC 49 U	MDX 037	Série	120	14.000000	HC 49 U	MDX 140	32 pF	25
3.686400	HC 49 U	MDX 037 A	30	120	14.318180	HC 49 U	MDX 143	Série	25
4.000000	HC 49 U	MDX 040 A	32	100	14.745600	HC 49 U	MDX 147	Série	25
4.194304	HC 49 U	MDX 041	32	100	15.000000	HC 49 U	MDX 150	Série	25
4.433619	HC 49 U	MDX 044	32	80	16.000000	HC 49 U	MDX 160	Série	25
4.915200	HC 49 U	MDX 049 A	32	55	16.000000	HC 49 U	MDX 160 A	20 pF	20
5.000000	HC 49 U	MDX 050	20	50	18.432000	HC 49 U	MDX 184	32 pF	20
5.068800	HC 49 U	MDX 051	Série	50	19.660800	HC 49 U	MDX 196	Série	20
6.000000	HC 49 U	MDX 060	Série	40	20.000000	HC 49 U	MDX 200	Série	20
6.144000	HC 49 U	MDX 061	30	40	22.118400	HC 49 U	MDX 221	Série	20
6.553600	HC 49 U	MDX 065	32	40	24.000000	HC 49 U	MDX 240A	Série	20
7.372800	HC 49 U	MDX 073	20	40	25.000000	HC 49 U	MDX 250 A	Série	20

Quartz selon spécifications : *la liste ci-dessus ne concerne que les quartz standards. Il est possible d'obtenir des quartz de fréquences différentes ou à spécifications spéciales. Nous consulter.*

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