

DATENBLATT / DATASHEET

Specification: QTC-HC49U

Crystal unit: HC-49/U

Date: 11.03.2009  
ROHS compliance



Metal housing: Resistance weld  
Inert gas N<sub>2</sub>/H<sub>2</sub>  
Laser engraving

TABLE 1

ENCLOSURE	H/mm	CODE	
HC 49/U	13,2	20	
	10,6	21	starting with 4 MHz
	9,2	22	starting with 10 MHz

Scale 1:1

Maßstab 1:1

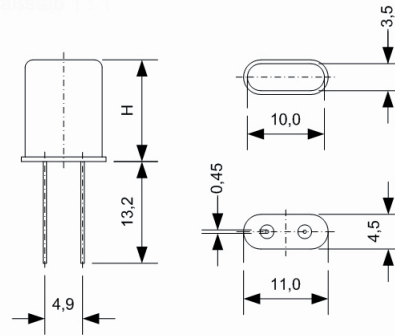


TABLE 2

1,8 ... 250 MHz		UNIT	CONDITION
Frequency range	1,8 - 250	MHz	
Crystal cut	AT		
Enclosure	HC-49/U		
Mode	1. 1,8 – 40 MHz 3. 15 – 100 MHz 5. 45 – 160 MHz 7. 100 – 210 MHz 9. 140 – 250 MHz		Fundamental mode 3 <sup>rd</sup> overtone 5 <sup>th</sup> overtone 7 <sup>th</sup> overtone 9 <sup>th</sup> overtone
Load capacitance	10 – 60 pF or Series	pF	
Shunt capacitance	1,8 – 4 MHz: < 3,0 pF 4 – 10 MHz: < 5,0 pF 10 – 250 MHz: < 7,0 pF	pF	
Motional capacitance			
Resistance R <sub>R</sub>			see table 5
Frequency adjustment			see table 3
Frequency stability over temperature			see table 4
Aging 1 <sup>st</sup> year	< 2,0 – 3,0	ppm	
Shock	100g / 6ms		
Vibration	10 g <sub>SS</sub> / 1,5 mm <sub>SS</sub> 50 – 500 Hz		
Δf / f	< 5	ppm	
ΔR/R	< 20%		



DATENBLATT / DATASHEET

Specification: QTC-HC49U

TABLE 3

FREQUENCY ADJUSTMENT AT +25°C ± 2 °C	FREQUENCY / MHz					CODE
	1,8 ~ 4,0	15 ~ 100	45 ~ 160	100 ~ 210	140 ~ 250	
Mode	1	3	5	7	9	
Frequency adjustment / ppm	± 3	± 3	± 3			C1
	± 5	± 5	± 5	± 5	± 5	E1
	± 10	± 10	± 10	± 10	± 10	J1
	± 20	± 20	± 20	± 20	± 20	B2
	± 50	± 50	± 50	± 50	± 50	H2

TABLE 4

FREQUENCY STABILITY OVER TEMPERATURE RELATED TO +25 °C		FREQUENCY DEVIATION / ppm							
1,8 ... 4,0 MHz: + 4,0 ... 6,0 MHz: x 6,0 ... 250 MHz: o		± 3	± 5	± 7	± 10	± 20	± 25	± 30	± 50
Temperature range	Code	03	05	07	10	12	13	14	20
0 ... + 50°C	B	o	xo	+xo	+xo	+xo	+xo	+xo	+xo
-10 ... + 60°C	H	o	xo	xo	+xo	+xo	+xo	+xo	+xo
-20 ... + 70°C	M		o	xo	xo	+xo	+xo	+xo	+xo
-30 ... + 80°C	R			o	xo	xo	xo	+xo	+xo
-40 ... + 90°C	U				o	xo	xo	+xo	+xo
-55 ... + 105°C	W						o	xo	+xo
-55 ... + 125°C	X							o	xo

TABLE 5

MAX. RESISTANCE R <sub>R</sub>	MODE	FREQUENCY / MHz	R <sub>MAX</sub> / Ohm
	1	1,8 – 2,0	500
		2,0 – 3,0	300
		3,0 – 5,0	120
		5,0 – 12	40
		12 – 40	15
		3	10 – 20
20 – 100	22		
5	45 – 55	70	
	55 – 160	50	
7	100 – 210	100	
	140 – 250	180	

ORDERING CODE <sup>(1)</sup>	FREQUENCY [MHz]	ENCLOSURE CODE: TABLE 1	MODE: 1: FUND. 3,5,7,9: OT TABLE 2	LOAD CAP. : 00: SERIES 32: 32 PF TABLE 2	ADJ. TOLERANCE CODE: TABLE 3	TEMP. RANGE CODE: TABLE 4	FREQ. STAB. OVER TEMP. CODE: TABLE 4	SHUNT CAPACITANCE 35: 3,5 PF TABLE 2
	12,800	29	1	32	J1	M	10	35

<sup>(1)</sup> Other specification on request