HC35 CRYSTALS (TO5)

DESCRIPTION

HC35 crystals are used in communications, aerospace and defence applications The crystal blank used in HC35 packages is capable of being manufactured to close tolerances and is readily produced with custom frequencies and specifications.

FEATURES

- **Wide frequency range**
- **Small profile, low-mass package**
- **Close tolerances easily achieved**
- **Fully customisable specification**
- **Industry-standard package**

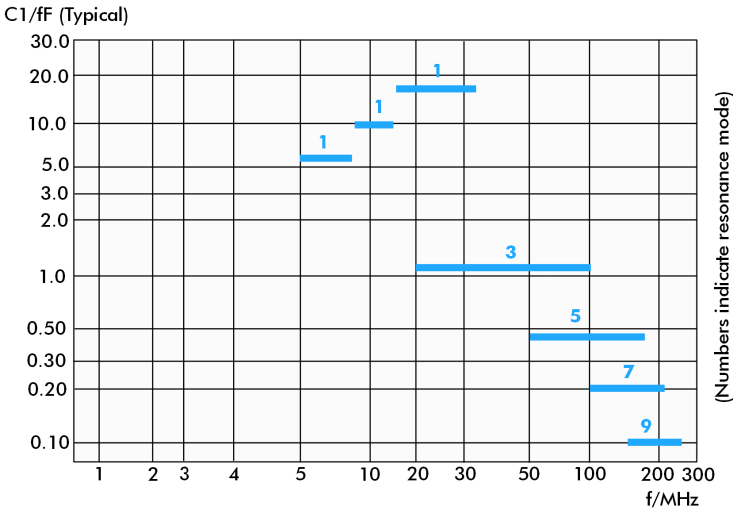
GENERAL SPECIFICATION

Frequency Range:	8.0MHz to 250MHz
Oscillation Mode:	See table
Calibration Tolerance at 25°C:	from ±3ppm
Frequency stability over temp:	from ±3ppm (see table)
Operating Temperature Range:	From 0°~+50° to -55°~+125°C
Shunt Capacitance (C0):	4pF maximum (See table)
Load Capacitance (CL):	Series or from 8pF to 32pF *(Customer specified CL)*
Motional Capacitance (C1):	See table
Effective Series Resistance:	See table
Ageing:	±2ppm max 1st year, ±1ppm typical per year after
Drive level:	100uW maximum
Shock:	100g/6ms
Vibration:	10g/1.5mm, 10~500Hz, 3 axis
Holder:	Resistance-weld, hermetic seal
Supply format:	Bulk pack

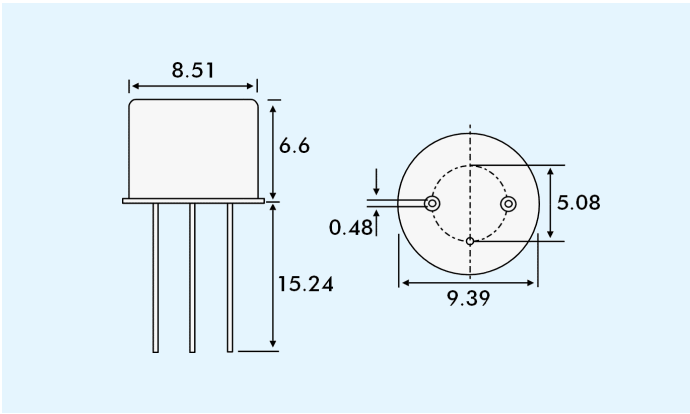
OSCILLATION MODE, ESR & SHUNT CAPACITANCE

Frequency (MHz)	Crystal Cut Osc. Mode	ESR (max) (Ohms)	C0 (pF)
8.0~9.9	AT Fund.	80	2.5
10.0~10.99	AT Fund.	60	3.0
11.0~12.9	AT Fund.	40	4.0
13.0~45.0	AT Fund.	25	4.0
30.0~50.0	AT 3rd OT	40	4.0
50.1~100.0	AT 5th OT	50	4.0
80.0~200	AT 7th OT	70	4.0
150~250	AT 9th OT	120	4.0

MOTIONAL CAPACITANCE (C1)



OUTLINES AND DIMENSIONS



FREQUENCY STABILITY OVER TEMPERATURE

Operating Temp. °C	Temperature Stability (ppm)							
	±3	±5	±7	±10	±20	±25	±30	±50
0° to +50°	ü	ü	ü	ü	ü	ü	ü	ü
-10° to +60°	ü	ü	ü	ü	ü	ü	ü	ü
-20° to +70°	X	ü	ü	ü	ü	ü	ü	ü
-30° to +80°	X	X	X	ü	ü	ü	ü	ü
-40° to +90°	X	X	X	ü	ü	ü	ü	ü
-55° to +105°	X	X	X	X	X	ü	ü	ü
-55° to +125°	X	X	X	X	X	X	ü	ü

PART NUMBER GENERATION

HC35 crystal part numbers are derived as follows:

Example: **16.000MHz HC35/10/20/10/30pF/ATF**

Frequency
Package = HC35
Calibration Tolerance at 25°C ±ppm
Temperature Stability ±ppm
Operating Temperature Range
lower figure of temp. range
e.g. '10' = -10°~+60°C
'20' = -20°~+70°C
Circuit Condition
(CL in pF or SERIES)
Mode
- ATF (AT-Cut, Fundamental)
- AT3 (AT-Cut, 3rd overtone)
- AT5 (AT-Cut, 5th overtone)
- AT7 (AT-Cut, 7th overtone)
- AT9 (AT-Cut, 9th overtone)

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