

## High Fundamental Frequency - Crystals

Modern crystal applications require further miniaturisation and higher frequencies in SMD packages. In response to these market trends KVG has installed an innovative production line for new products.

The new line of products includes crystals and oscillators with flat and MESA structure quartz blanks for high frequencies in fundamental mode up to 160MHz. The production tools are designed for maximum flexibility in order to handle flat crystal SMD packages for discrete crystal products as well as flat SMD oscillator packages for integrated oscillator designs.

For voltage controlled oscillators the high fundamental frequencies offer the benefit of higher pullability compared to an overtone crystal design. Furthermore, the high frequencies in fundamental mode reduce the need for frequency multiplying.

Oscillators designed with such crystals have distinctive advantage in cost, physical size and reliability.

### Typical Data for High Fundamental Frequency - Crystals

Overtone	Frequency range [ MHz ]	C1 [ fF ]	C0 [ pF ]	Q [ *1000 ]
1	45 - 160	2.5 - 15	1.0 - 8.0	35 - 10
3	120 - 320	0.3 - 4.0	1.0 - 8.0	60 - 10

Adjustment tolerance :  $\pm 10$  ppm @ 25 °C

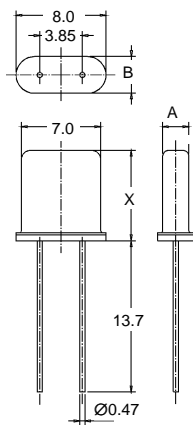
Temperature stability :  $\pm 20$  ppm from -20 to +70°C

Aging :  $\pm 3$  ppm / year max.

Customer specific data upon request.

Standard Frequencies : 44.736 MHz, 51.840 MHz, 61.440 MHz, 65.536 MHz  
68.736 MHz, 69.545 MHz, 139.264 MHz, 155.520 MHz

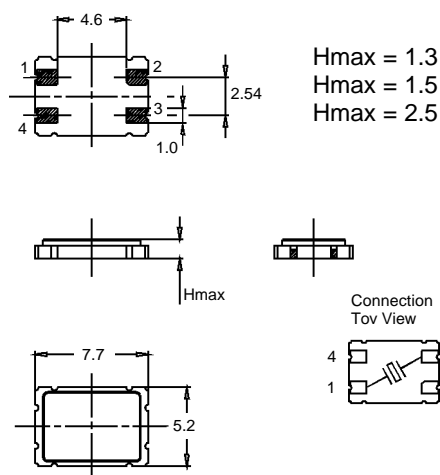
### Enclosures for HFF - Crystals



	X	A	B
HC-52/U:	8.8	2.3	3.3
HC-52/8mm:	8.8	2.3	3.3
HC-52/6mm:	6.0	2.3	3.3
HC-52/8mm-SL:	8.0	1.65	2.3
HC-52/6mm-SL:	6.0	1.65	2.3

All dimensions in mm (max),

SMD versions with metal clip



Preliminary



**VECTRON**  
INTERNATIONAL  
A DOVER TECHNOLOGIES COMPANY

166 Glover Avenue  
Norwalk, CT 06856

Tel: 1-88-VECTRON-1  
Fax: 1-888-FAX-VECTRON  
[www.vectron.com](http://www.vectron.com)