X22 CRYSTALS

2.5 x 2.0 x 0.6mm SMD

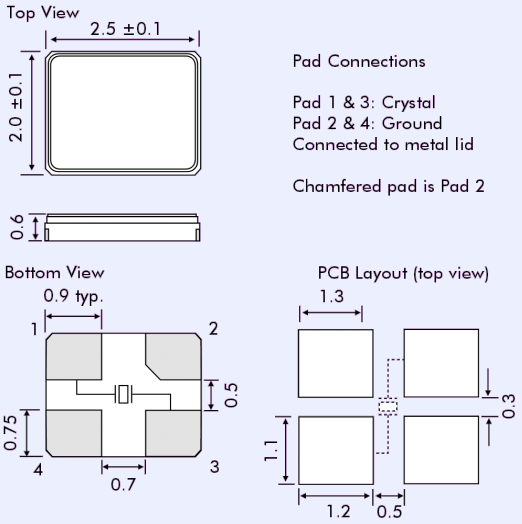
- **Frequency range 16MHz to 60MHz, fundamental mode**
- **Ultra-miniature package 2.5 x 2.0 x 0.6mm**
- **Packaged in standard EIA tape and reel**
- **Ideal for PDAs, hand-held GPS, PCMCIA etc.**

RoHS

DESCRIPTION

X22 crystals are ultra-miniature AT-cut crystals covering the frequency range 16.0MHz to 60.0MHz in fundamental mode. The X22 crystal package is grounded via the top metal lid and two solder pads. the part exhibits very low ageing and has high shock and vibration resistance. The small size and low mass makes these crystals ideal for miniaturized hand-held equipment and similar high-density applications.

OUTLINE & DIMENSIONS



SPECIFICATION

Frequency Range	
AT-Cut Fundamental:	16.0MHz to 60.0MHz
Calibration Tolerance at 25°C:	±10ppm, ±20ppm, ±30ppm
Frequency stability	
-10° to +60°C	from ±5ppm
-20° to +70°C	from ±10ppm
-40° to +85°C	from ±15ppm
Storage Temperature:	-50°~+105°C
Equivalent Series Resistance:	*See table*
Shunt Capacitance (C0):	2pF to 4pF typical, 5pF maximum
Load Capacitance (CL):	Series or from 9pF to 32pF
Ageing:	<±2ppm per year at +25°C
Drive level:	50 microWatt, 100 microW max.
Reflow Soldering:	10s maximum at 260°C twice or once, 180s at 230°C.
Packaging:	EIA tape and reel

FREQUENCY STABILITY vs. OPERATING TEMPERATURE RANGE

Stability Code	Temperature Range	Stability ppm					
		±5	±10	±15	±20	±25	±30
X	-10 to +60°C	✓	✓	✓	✓	✓	✓
Y	-20 to +70°C	■	✓	✓	✓	✓	✓
I	-40 to +85°C			✓	✓	✓	✓

✓ = available, ■ = contact Mercury

EQUIVALENT SERIES RESISTANCE

Frequency Range MHz	ESR Ohms Max.
16.0~21.0	120
21.0~26.0	80
26.1~60.0	60

PART NUMBER FORMAT

Example: X22 - 16.000 - 12 - 15/20/-20+70/100R

- Package X22
- Frequency in MHz
- Load Capacitance *(Either SR for series or CL in pF)*
- Calibration tolerance at 25°C (±ppm)
- Temperature Stability over temp. range (±ppm)
- Operating Temp. Range (°C) *(Lower and upper limits)* Or use
  - 'X' for -10 to +60°C
  - 'Y' for -20 to +70°C
  - 'I' for -40 to +85°C
- Equivalent Series Resistance *(Optional - use when special value is required)*

MERCURY ELECTRONICS EUROPE Blacknell Lane CREWKERNE Somerset UK TA18 7HE
Tel: +44 (0)1460 230010 Fax: +44 (0)1460 230011, info@mecxtal-europe.com, www.mecxtal-europe.com