

### Features

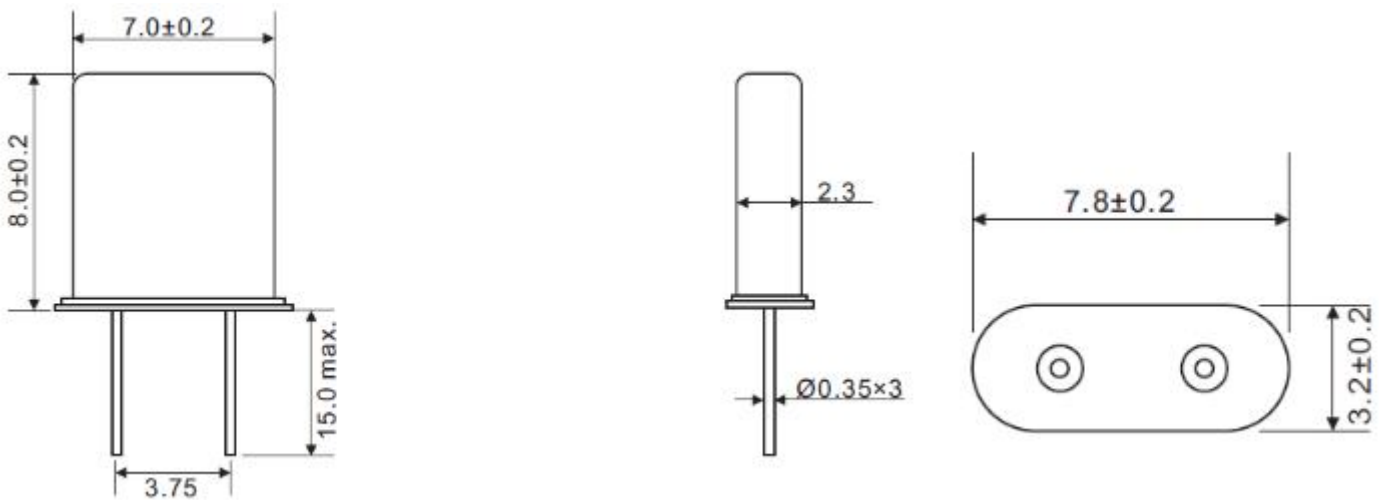
- Welded type crystal units
- All standard frequencies
- Frequency range from 4MHz to 200MHz
- Excellent aging characteristics
- Uniform frequency tuning range and modulation sensitivity
- Applications: TV, STB, LCDM, Communications, Consumer Devices, Cable Modem, etc.
- RoHS Compliant & Pb-Free



### Standard Specification

Type	6D Through-hole Crystal		
Frequency Range	4~24MHz	24~100MHz	100~200MHz
Overtone Order	Fundamental	3rd Overtone	5th /7th Overtone
Load Capacitance	Series or 9pF~50pF		
Drive Level	1~500μW Max. (100μW Typ.)		
Frequency Tolerance	±10ppm, ±20ppm, or specify		
Series Resistance	40~100Ω	40~80Ω	100Ω
Operating Temperature	-20~+70°C, -40~+85°C		
Storage Temperature	-55~+125°C		
Shunt Capacitance	7pF Max.		
Aging (at 25°C)	±5ppm /Year Max.		
Packing Unit	200pcs		

**Dimensions (mm)**



**Part ordering information**

X	-6D	-45.000	-32	-10	-60	-C
	Series	Frequency	Load Capacitance	Tolerance	ESR	Temperature Range
		e.g	e.g	e.g	e.g	e.g
		45.000 = 4MHz	32 = 32pF	10 = 10ppm	60 = 60Ω	A= -10~+60°C B= -20~+70°C C =-40~+85°C D =-40~+105°C E =-55~+125°C

### Reliability Tests Specification

Test item	Equipment	Condition	Specification
1.SOLDERABILITY TEST	SJK-REL001、RC-328A	1. Solderability:235±5°C, 5±0.5S 2. Heat resistance:260±5°C,10±1S restoration of 1 hour	MIL-STD-883E Method 2003.7
2. HERMETICITY TEST	HELIOT-306S	FC-84 FLUOROCARBON,BUBBLE MACHINE	MIL-STD-883E Method 1014.10
3. VIBRATION TEST	HG-V4、S&A 250B	Enable Crystal(10g) from 10-55-10Hz,X、Y、Z horizontal,1 Minute vibration/time, 1time/ 2 hours.	MIL-STD-883E Method 2007.3
4.MECHANICAL SHOCK	HPC-200、S&A 250B	Enable Crystal 50G(490m/s2) time=11 ms speed=3.4 m/s half sine wave oscillation	JIS C6701
5. DROP TEST	HARD BOARD.S&A250B	75CM HIGH,3 TIMES ON HARD BOARD	MIL-STD-202F Method 213B
6. HIGH & LOW TEMP STORAGE TEST (Static test)	H-PTH-80CK & HM101-3ABN , S&A 350B/250B	High temperature: 125°C±2°C,1000hr; Low temperature:-40°C±3°C,1000hrs	MIL-STD883C, METHOD 1011.8
7.TEMP & HUM CYCLING TEST	H-PTH-80CK CHAMBE , S&A 350B/250B	Temperature:-10°C±2°C~65°C±2°C,Humidity:93±3%,1 cycle need 24 hrs. 5cycles.	MIL-STD-883E Method 1005.8
8. HIGH TEM. & HUM. STORAGE TEST	H-PTH-80CK CHAMBE , S&A 350B/250B	Temperature:40°C±2 , Humidity:85+3,- 2%,Store 96 hrs	JIS C6701
9.AGEING TEST	H-PTH-80CK CHAMBE , S&A 350B/250B	Temperature:40°C±2 , Humidity:85+3,- 2%,Store 96 hrs	JIS C5023



**X-6D Series**  
**Through Hole Crystal**  
**Size: 7.8×3.2×8.0mm**  
**4~200 MHz / 9~50 pF / 10~20ppm**

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