

## Data sheet

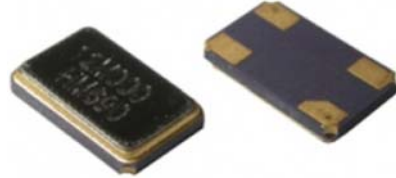
### F4025A

### 4 pad Ceramic SMD Crystal (4.0 x 2.5 x 0.8 mm)

4.0 x 2.5 x 0.8 mm

## FEATURES

- Ultra thin and miniature 4 pad SMD Crystal package
- Completely sealed type with metal case sealed on ceramic board
- Low impedance performance
- Frequency range 12MHz - 50 MHz
- Options for initial tolerance and temperature stability



Parameter	min.	typ.	max.	Unit	Condition
Frequency range	12.000		50.000	MHz	Fundamental mode
Vibration mode	AT cut, fundamental				
Frequency stability					
Initial tolerance @25°C		±30		ppm	See options
vs. operating temperature range		±30		ppm	See options
operating temperature range	-10		+60	°C	See options
Equivalent Series Resistance (ESR)	See table 1				
Load Capacitance (CL)	16pF, 18pF, 20pF or specify (see options)				
Shunt Capacitance (Co)			5.0	pF	
Drive Level			200	µW	
Aging			±2	ppm	At 25°C, first year
Insulation Resistance	500			MΩ	@ 100Vdc
Enclosure (see drawing) (LxWxH)	4.0 x 2.5 x 0.8			mm	
Soldering Condition	260°C, 10 sec x 2 max.				
Packing	1,000 pcs./reel				

**Table 1 : Standard ESR**

Frequency	Mode	ESR
12.0 ~ 15.0MHz	Fundamental	80Ω max.
16.0 ~ 20.0MHz	Fundamental	60Ω max.
21.0 ~ 50.0MHz	Fundamental	50Ω max.

### Ordering Code:

Freq. Tolerance @ 25°C	Freq. Stability	Operating Temp. range	Load Capacitance	Mode	Frequency in MHz	ESR if other than STD
10 = ± 10ppm	10 = ± 10ppm	D = -10 / +60°C	Please specify CL	F = Fundamental	Specify the	Specify a value
15 = ± 15ppm	15 = ± 15ppm	E = 0° / +70°C	in pF or S for series		frequency in MHz	in Ω
20 = ± 20ppm	20 = ± 20ppm	F = -20° / +70°C				
25 = ± 25ppm	25 = ± 25ppm	G = -30° / +75°C				
30 = ± 30ppm	30 = ± 30ppm	H = -30° / +85°C				
50 = ± 50ppm	50 = ± 50ppm	K = -40° / +85°C				

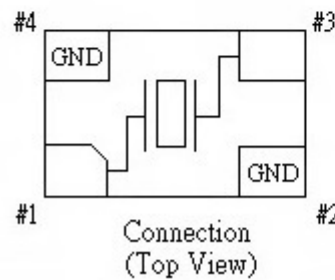
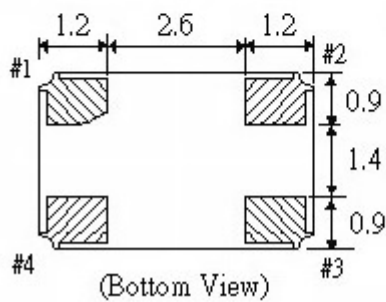
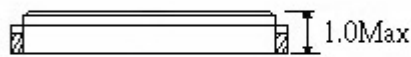
**Example: F4025A-30-50-D-18-F-15.000MHz**

**Data sheet**

**F5032A**

**4 pad Ceramic SMD Crystal (5.0 x 3.2 x 1.0 mm)**

**Outline Dimensions:**



**Environmental conditions**

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability	2-20	5.6.3	Test Ta Method 1
Resistance to soldering heat	2-58		Test Td <sub>1</sub> Method 2 Test Td <sub>2</sub> Method 2
Shock*	2-27	5.6.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration random *	2-64	5.6.7.3	Test Fdb
Endurance tests			
- ageing		5.7.1	30 days @ 85°C, OCXO @25°C
- extended aging		5.7.2	1000h, 2000h, 8000h @85°C

Rev. 9 dated 01-02-2014