

## ACT750SMX-4

The ACT750SMX-4 family is a low cost, 4 pad, high quality, low aging 7x5mm SMD Crystal in a ceramic base / metal lid package, seam sealed for good long term reliability. The device has the lid grounded via the package to reduce EMI issues. The wide frequency range and specification options ensure suitability for many applications.

**APPLICATIONS:** Wireless/WLAN, ATM, Cordless phones, Pagers, PC & Notebook, Instrumentation, Audio visual, Micro clock, Process control, Consumer & Communications.



## Specification

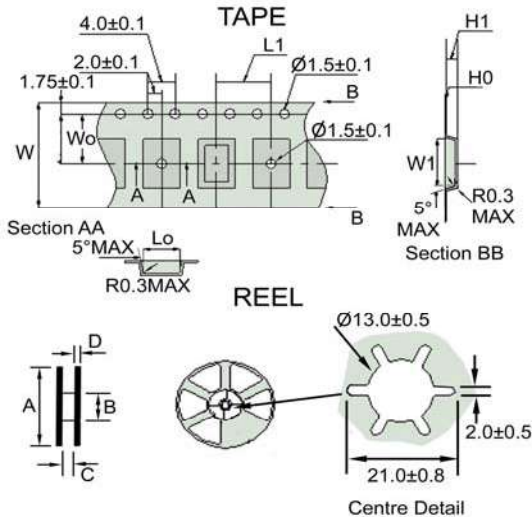
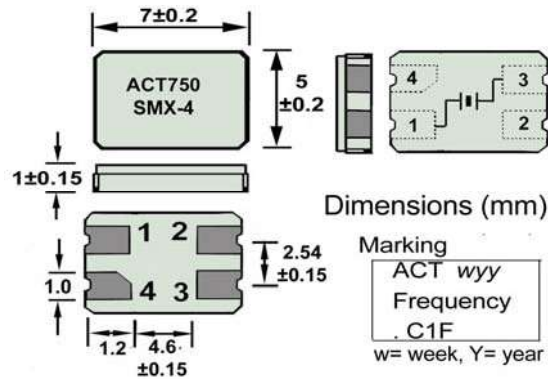
| Parameter                    | Symbol | Specification                             | Condition                           |
|------------------------------|--------|---|-------------------------------------|
| Frequency Range              | fo     | 6.0 ~ 150.0MHz                            | Please specify                      |
| Frequency Tolerance (@25°C)  | Δf/fo  | ±5,±10,±15,±20,±30 & ±50ppm(Std)          | Please specify                      |
| Stability over temp range    | Tc     | ±5ppm ~ 50ppm (See table 2)               | Please specify                      |
| Temp Operating Range         | Topr   | 0~+50°C ~ -40~+85°C (See table 2)         | Please specify                      |
| Temp Storage Range           | Tstg   | -40 ~+85°C                                |                                     |
| Equivalent Series Resistance | ESR    | See table 1                               |                                     |
| Load Capacitance             | CL     | 10pF ~ 50pF & Series                      | (16,20 & 30pF Std. Please specify)  |
| Shunt Capacitance            | C0     | 5pF max                                   |                                     |
| Drive Level                  | DL     | 100μW typical (300μW max)                 | (Custom available - Please enquire) |
| Drive Level Dependency       | DLD    | ESR min to max <1.3<br>FL min to max <1.3 | 0.01, 0.1, 1, 10, 50, 100μW steps   |
| Insulation Resistance        | IR     | 500MΩ min                                 | @100V DC                            |
| Aging                        | Fa     | ±3ppm /year                               | (First year max @ 25°C)             |

Table 1

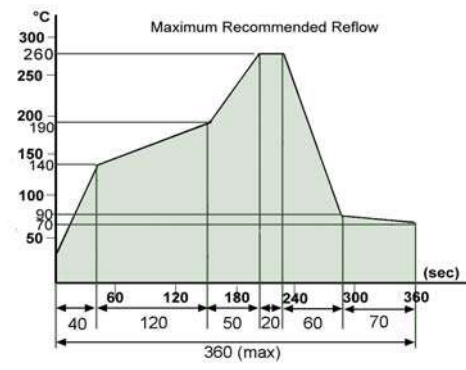
| Freq. Range (MHz) | ESR (Ω) max | Mode / Cut                    |
|-------------------|-------------|-------------------------------|
| 6.000 ~ 9.999     | 100         | Fundamental / AT              |
| 10.000 ~ 11.999   | 60          | Fundamental / AT              |
| 12.000 ~ 14.999   | 50          | Fundamental / AT              |
| 15.000 ~ 49.090   | 40          | Fundamental / AT              |
| 45.000 ~ 79.999   | 90          | 3 <sup>RD</sup> Overtone / AT |
| 80.000 ~ 90.000   | 90          | 3 <sup>RD</sup> Overtone / AT |
| 90.001 ~ 150.000  | 150         | 3 <sup>RD</sup> Overtone / AT |

Table 2

| Stability Temp | ±5ppm | ±10ppm | ±20ppm | ±30ppm | ±50ppm |
|----------------|-------|--------|--------|--------|--------|
| 0~50°C         | ✓     | ✓      | ✓      | ✓      | ✓      |
| -10~+60°C      | ✓     | ✓      | ✓      | ✓      | ✓      |
| -20~+70°C      |       | ✓      | ✓      | ✓      | ✓      |
| -30~+80°C      |       | STD    | STD    | STD    | STD    |
| -40~+85°C      |       | ✓      | ✓      | ✓      | ✓      |



Pad Surface Material: Gold (Au)



| Tolerance Dimension | TAPE |      |      |      |      |       |      | REEL |      |     |      |
|---------------------|------|------|------|------|------|-------|------|------|------|-----|------|
|                     | W    | Wo   | W1   | Lo   | L1   | Ho    | H1   | A    | B    | C   | D    |
| ±0.3                | 0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.05 | ±0.1 | ±1   | ±1   | ±1  | ±0.2 |
| 16.0                | 7.5  | 7.4  | 5.4  | 8.0  | 0.3  | 1.4   | 178  | 80   | 17.5 | 2.0 |      |

Please note that all parameters can not necessarily be specified in the same device

Customer to specify : Frequency, Frequency Tolerance, Temperature Stability, Operating Temperature & Load Capacitance

In line with our ongoing policy of product evolution and improvement, the above specification may subject to change without notice

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For quotations or further information please contact us at:

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<http://www.actcrystals.com>

**SERIES : ACT750SMX-4 Part numbering code is CF**

Example :

**CF** 750SMX-4    **1200** (12.000MHz)    **I** (±30ppm)    **K** (±30ppm)    **G** (-20+70)    **RO** (16pF)    **F** (Fund')    **C** (1K Reel)    **-PF** (RoHS)

| Frequency   |  |
|---|--|
| 6-9.999MHz  | 0 and 1st 3 digits of frequency          |
| 10-99.9999MHz   | 1st four digits of Frequency. See note 4 |
| 100-150MHz  | 1st five digits of frequency             |
| Examples  |  |
| 0983  | = 9.8304MHz                              |
| 1200  | = 12.000MHz                              |
| 7999  | = 79.9999MHz                             |
| 14599   | = 145.9999MHz                            |
| NB:   |  |
| It is important to suffix the above part number with the full frequency required to give a completed part number as illustrated below |  |

| Tolerance (±ppm) @ 25°C |    |
|-------------------------|----|
| A                       | 5  |
| E                       | 10 |
| F                       | 15 |
| G                       | 20 |
| I                       | 30 |
| L                       | 50 |

| Stability Over Operating Temperature (°C) |    |
|---|----|
| B   | 5  |
| F   | 10 |
| I   | 20 |
| K   | 30 |
| O   | 50 |

| Operating Temperature Range (°C) |        |
|----------------------------------|--------|
| A                                | -0+50  |
| E                                | -10+60 |
| G                                | -20+70 |
| K                                | -30+80 |
| M                                | -40+85 |

| Load Capacitance (pF or Series Resonance) |    |
|---|----|
| GO  | 8  |
| JO  | 9  |
| KO  | 10 |
| MO  | 11 |
| OO  | 12 |
| ZO  | 14 |
| PO  | 15 |
| RO  | 16 |
| TO  | 18 |
| VO  | 20 |
| AA  | 24 |
| BA  | 25 |
| DA  | 30 |
| SR  | SR |

| Mode |              |
|------|--------------|
| F    | Fundamental  |
| A    | 3rd Overtone |

| RoHS Comp' |     |
|------------|-----|
| -PF        | -PF |

| Package |          |
|---------|----------|
| L       | Loose    |
| C       | 1K Reels |

| Temp      | Stability ±5ppm | ±10ppm | ±20ppm | ±30ppm | ±50ppm |
|-----------|-----------------|--------|--------|--------|--------|
| 0-50°C    | ✓               | ✓      | ✓      | ✓      | ✓      |
| -10-+60°C | ✓               | ✓      | ✓      | ✓      | ✓      |
| -20-+70°C |                 | ✓      | ✓      | ✓      | ✓      |
| -30-+80°C |                 | STD    | STD    | STD    | STD    |
| -40-+85°C |                 | ✓      | ✓      | ✓      | ✓      |

**Full Example Part Number**  
**CF1200IKGROFC - PF 12.000MHz**

**NOTES :**

- 1) Tighter Tolerances and Stabilities and other Operating Temperature Ranges may be available.
- 2) ACT are always happy to consider truly custom specification parts which may require non-standard specification parameters, specific testing, customer requested AQL requirements, non standard packaging or taping and reeling and custom marking. Such devices would normally be allocated a custom specification part number which is wholly customer specific.  
 ( EG : A 12.000MHz custom ACT750SMX-4 device may have a part number such as CF1200C- C1122-PF)
- 3) A guide to availability of tighter stabilities appears on page one of this data sheet in Table 2
- 4) Frequencies below 10.000MHz are prefixed with a "0" (eg: 0900 = 9MHz. Whereas 10.000MHz is 1000 )