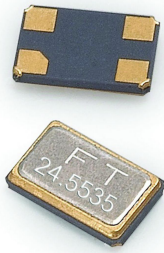


SMD QUARTZ CRYSTAL RESONATOR



4 Pad Version 6.0×3.5 mm

- ±10 ppm type available
- Excellent Reliability Performance
- EMI shielding possible by grounded lid
- Reflow soldering temperature: 260°C max
- Ceramic Seam Weld package



RoHS compliant

★ PARAMETERS

| PARAMETERS | SPECIFICATION |
|------------------------|--------------------------------------|
| Frequency Range | 7.3~50MHz |
| Operation Mode | Fundamental |
| Loading Capacitance | 12pF Std. 8 to 32pF Series available |
| Drive Level | 10 μ W (500 μ W Max) |
| Frequency Tolerance | ±10ppm~±30ppm (at 25°C) |
| Equivalent Resistance | 60 Ω Max |
| Frequency Stability | ±10ppm~±50ppm |
| Operating Temp. Range: | -10~+60°C to -40~+85°C |
| Storage Temp. Range: | -55~+125°C |

○ All specification subject change without notice.

★ FREQUENCY STABILITY VS. TEMPERATURE

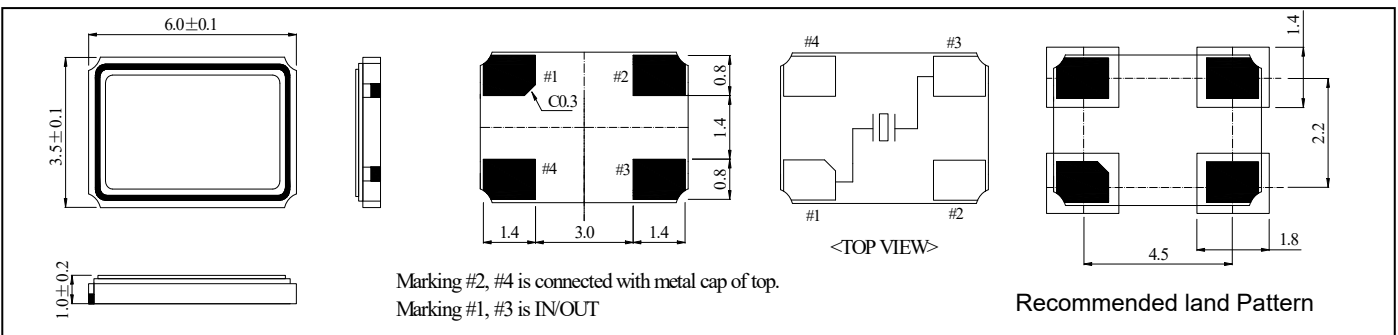
| Operation Temperature Range | Frequency Stability | | | | |
|-----------------------------|---------------------|--------|--------|--------|--------|
| | ±10ppm | ±15ppm | ±20ppm | ±30ppm | ±50ppm |
| -10°C~+60°C | ● | ○ | ○ | ○ | ○ |
| -20°C~+70°C | ○ | ○ | ● | ○ | ○ |
| -40°C~+85°C | | ○ | ○ | ● | ○ |

● standard ○ available

★ ESR (SERIES RESISTANCE RS)

| Frequency | Vibration Mode | ESR |
|---------------|----------------|----------|
| 7.3-11.999MHz | AT CUT/FUND. | 60Ω(MAX) |
| 12-15.999MHz | AT CUT/FUND. | 50Ω(MAX) |
| 16-24.999MHz | AT CUT/FUND. | 40Ω(MAX) |
| 25-50.000MHz | AT CUT/FUND. | 30Ω(MAX) |

★ DIMENSIONS& LAND PATTERN LAYOUT (Unit: mm)

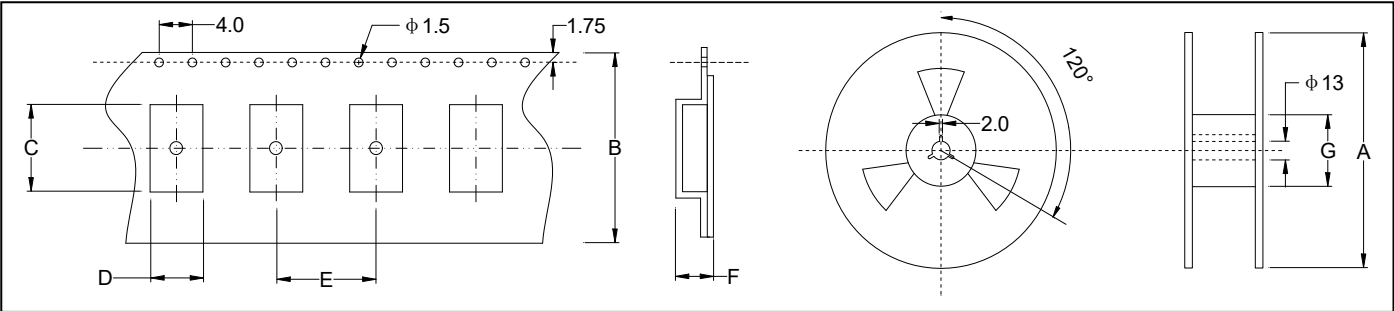


★ PART NUMBER GUIDE e.g. *FTX12.000M18SM6S-20/20B* (*SM6S=6.0×3.5 SMD SEAM TYPE)

| Logo | Quartz Crystal Resonator | Frequency Hz | Load Capacitance pF | Package | Frequency Tolerance ppm | Frequency Stability ppm | Operating Temp. Range |
|------|--------------------------|--------------|---------------------|---------|-------------------------|-------------------------|-----------------------|
| FT | X | 12.000M | 18 | SM6S | 20 | 20 | B |

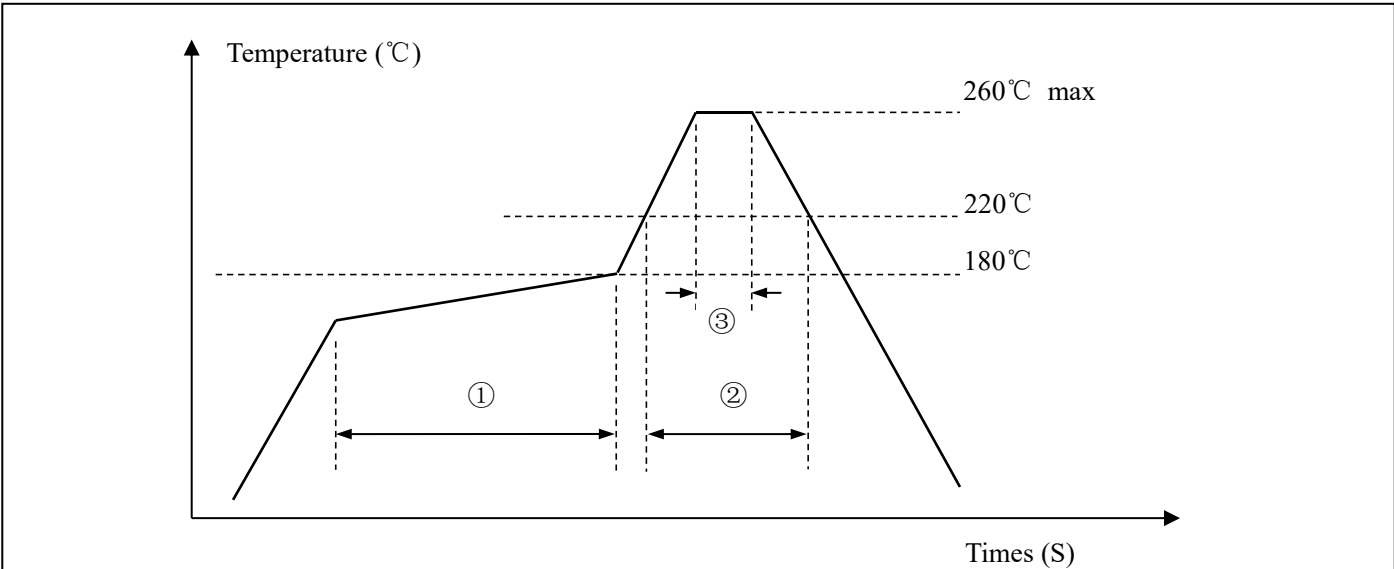
| Definition | Description |
|-----------------------------|-----------------------|
| Operating Temperature Range | A: -10~+60°C |
| | B: -20~+70°C |
| | C: -30~+80°C |
| | D: -40~+85°C |
| | E: Customer specified |

★ TAPING SPECIFICATION (Unit: mm)



| | A | B | C | D | E | F | G |
|-------------------|---------|----------|-----------|-----------|---------|---------|----------|
| SMD6035 | 178±2.0 | 16.0±0.3 | 6.40±0.10 | 3.90±0.10 | 8.0±0.1 | 1.5±0.1 | 60.5±1.0 |
| 1000 pcs per reel | | | | | | | |

★ REFLOW SOLDERING PROFILE



| | | | | |
|---------------------|---|--------------|-----------|-------------|
| Pb free reflow A | ① | Preheat | 160~180°C | 120sec. max |
| | ② | Primary heat | 220°C | 60sec. max |
| | ③ | Peak | 260°C | 10sec. max. |