

■ Features

- Tight tolerance and stability. Ideal for communication equipment
- AT-cut round shape crystal plate inside. Optimized for low harmonics
- Available up to 200 MHz using fifth overtone crystal mode
- Annealed and Pre-aged for low frequency drift over long -term operation



General Specifications

| | |
|---------------------------|--|
| Item / Type | U1 ; U1SL ; U5 ; U1MJ ; U5MJ series |
| Frequency Range | U1 & U1MJ : 1.0 ~ 1.2MHz , 4.0 ~ 200.0MHz ; U5 : 10.0 ~ 200MHz |
| Load Capacitance | Series Resonance or Parallel (8 to 32 pF typical) |
| Drive Level | 100μ W (500μ W max.) |
| Frequency Tolerance | AT-cut: ± 5 ppm , ± 10 ppm , ± 20 ppm or ± 30 ppm at 25°C |
| | SL-cut: ± 50 ppm at 25°C |
| Frequency Stability | See Table 2 |
| Aging | ΔF / F : ±3 ppm / year (max.) |
| Storage Temperature Range | - 50°C to 105°C |

Table 1

U1 & U1MJ Series Resistance (max.)

| Freq.(MHz) | Osc. Mode | E.S.R. | Freq.(MHz) | Osc. Mode | E.S.R. |
|------------|------------|--------|-------------|------------|--------|
| 1.0 ~ 1.2 | SL , Fund. | 5K Ω | 11.0 ~ 12.9 | AT , Fund. | 40 Ω |
| 6.0 ~ 6.9 | AT , Fund. | 100 Ω | 13.0 ~ 45.0 | AT , Fund. | 25 Ω |
| 7.0 ~ 7.9 | AT , Fund. | 90 Ω | 30.0 ~ 50.0 | AT , 3rd | 40 Ω |
| 8.0 ~ 8.9 | AT , Fund. | 80 Ω | 50.1 ~100.0 | AT , 3rd | 50 Ω |
| 7.0 ~ 7.9 | AT , Fund. | 90 Ω | 80.0~ 200.0 | AT , 5th | 80 Ω |

U5 & U5MJ Series Resistance (max.)

| Freq.(MHz) | Osc. Mode | E.S.R. | Freq.(MHz) | Osc. Mode | E.S.R. |
|-------------|------------|--------|-------------|-----------|--------|
| 10.0 ~ 11.9 | AT , Fund. | 60 Ω | 90.0~135.0 | AT , 3rd | 40 Ω |
| 12.0 ~ 14.9 | AT , Fund. | 50 Ω | 90.0~159.0 | AT , 5th | 100 Ω |
| 15.0 ~ 35.0 | AT , Fund. | 30 Ω | 160.0~200.0 | AT , 5th | 80 Ω |
| 35.0 ~ 90.0 | AT , 3rd | 60 Ω | | | |

Table 2

Frequency stability Vs Operating temperature range

| Temp. (°C) \ ppm | ± 5 | ± 10 | ± 15 | ± 20 | ± 25 | ± 30 | ± 50 | ± 100 (SL-cut) |
|------------------|-----|------|------|------|------|------|------|-----------------|
| X -10 to 60°C | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Y -20 to 70°C | ▲ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| I -40 to 85°C | | ▲ | ○ | ○ | ○ | ○ | ○ | ○ |

○ : available ; ▲ : contact Mercury

Outline Dimensions (Unit : mm)

| Dip type (U1 , U1SL , U5) | | | | Jacket type (U1MJ , U5MJ) | | | |
|-----------------------------|-----------|-----------|-----------|-----------------------------|-----------|------------|--|
| | | | | | | | |
| | H | T1 | T2 | | H | W | |
| U1 | 8.0 ± 0.2 | 2.2 ± 0.2 | 3.2 ± 0.2 | U1MJ | 8.0 ± 0.2 | 11.8 ± 0.2 | |
| U1SL | 8.0 ± 0.2 | 1.8 ± 0.2 | 2.6 ± 0.2 | U5MJ | 6.0 ± 0.2 | 9.8 ± 0.2 | |
| U5 | 6.0 ± 0.2 | 2.2 ± 0.2 | 3.2 ± 0.2 | | | | |