

ECS-2532HS

SMD Clock Oscillator

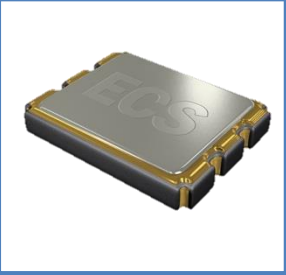
ECS-2532HS-2 (2.8V) and ECS-2532HS-3 (3.3V) subminiature High Stability SMD oscillators. Ideal for today's tight tolerance applications.

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OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECS-2532HS



- High Stability Oscillator
- 2.5 x 3.2 mm Footprint
- Low Current Consumption
- RoHS Compliant

| Parameters | Conditions | ECS-2532HS-2 (+2.8V) | | | ECS-2532HS-3 (+3.3V) | | | Units |
|------------------------------|-------------------------|----------------------|------|---------|----------------------|------|---------|-------|
| | | MIN | TYP | MAX | MIN | TYP | MAX | |
| Frequency Range | | 1.000 | | 55.000 | 1.000 | | 55.000 | MHz |
| Operating Temperature | Standard | -40 | | +85 | -40 | | +85 | °C |
| Supply Voltage | VDD | +2.66 | +2.8 | +2.94 | +3.135 | +3.3 | +3.465 | VDC |
| Frequency Stability | Option E | | | ±20 | | | ±20 | PPM |
| | Option F | | | ±15 | | | ±15 | PPM |
| | Option G | | | ±10 | | | ±10 | PPM |
| Input Current | Pin 1 Open or ViH | | | 10 | | | 10 | mA |
| Stand-by Current | Pin 1 = VIL | | | 10 | | | 10 | µA |
| Output Symmetry | @50% VDD Level | | | 45/55 | | | 45/55 | % |
| Rise and Fall Times | 10% VDD to 90% Level | | | 5 | | | 5 | ns |
| "0" Level | VOL | | | 10% VDD | | | 10% VDD | VDC |
| "1" Level | VOH | 90% VDD | | | 90% VDD | | | VDC |
| Output Load | CMOS | | | 15 | | | 15 | pF |
| Disable Delay Time | | | | 100 | | | 100 | ns |
| Startup Time | | | | 10 | | | 10 | ms |
| Aging | @ +25°C ±3°C first year | | | 2 | | | 2 | PPM |

Part Numbering Guide: Example ECS-2532HS-3-G-TR

| ECS | - | Series | - | Frequency Abbreviations | - | Voltage | - | Stability | - | Packaging |
|-----|---|--------|---|-------------------------|---|--------------------------------|---|--|---|------------------------------|
| ECS | - | 2532HS | - | 200 = 20 MHz | - | 2 = +2.8V ±5% 3 = +3.3V ±5% | - | E = +/- 20 PPM F = +/- 15 PPM G = +/- 10 PPM | - | TR = Tape & Reel 500/Reel |

Package Dimensions (mm)

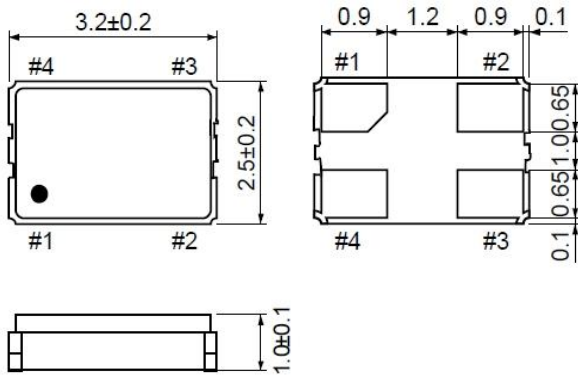


Figure 1) Top, Side, and Bottom views

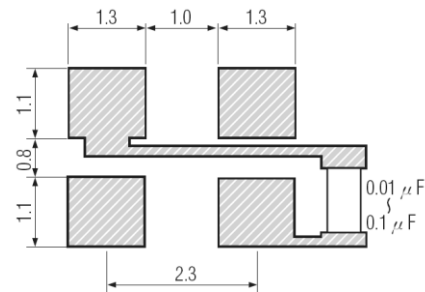


Figure 2) Land Pattern

| Pin Connections | |
|-----------------|-----------|
| #1 | Tri-State |
| #2 | Ground |
| #3 | Output |
| #4 | VDD |

| Tri-State Control Voltage | |
|---------------------------|----------------|
| Pad 1 | Pad 3 |
| Open | Output |
| VDD-0.5V Min | Output |
| 0.5V Max. (Note 1) | High Impedance |

Note: Internal crystal oscillation to be halted (Pin #1=VIL)

Frequency Abbreviations

| FREQUENCY MHz | CODE |
|---------------|------|
| 20.000 | 200 |
| 22.1184 | 221 |
| 24.000 | 240 |
| 26.000 | 260 |
| 27.000 | 270 |
| 32.000 | 320 |
| 40.000 | 400 |
| 44.000 | 440 |
| 50.000 | 500 |
| 54.000 | 540 |

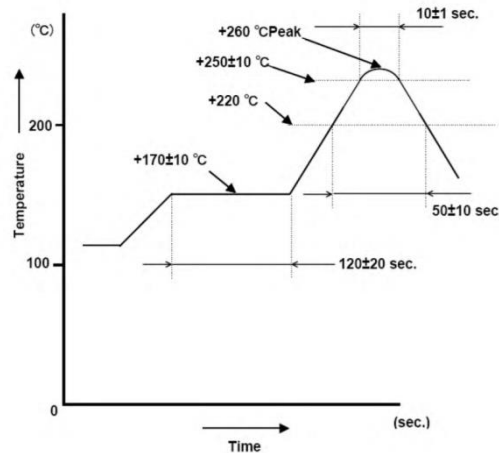
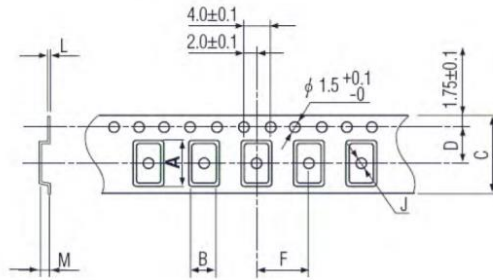


Figure 3) Suggested Reflow Profile

TAPE DIMENSIONS (mm)



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|-----|-----|-----|-----|-----|-----|------|-----|-----------|----------|
| 3.5 | 2.8 | 8.0 | 3.5 | 4.0 | 1.1 | 0.25 | 1.0 | 180 | 500 |

| Package Data | |
|--------------|-------------------------------|
| Item | Description |
| Lid | Metal |
| Base | Ceramic |
| Sealing | AuSn |
| Terminal | Tungsten (metalized) |
| Plating | Gold/Nickel (Surface)/(Under) |
| RoHS | Compliant (Pb Free) |

Figure 4) Pocket Tape Dimensions

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