

The ECS-2520SMV is a miniature SMD HCMOS Oscillator with Multi Volt™ capability of 1.62 ~ 3.63 V with a tight stability of ± 5 or ± 10 ppm. The 2.5 x 2.0 x 1.0 mm ceramic package is ideal for Low Power/Portable. Industrial and IOT. applications.

ECS-2520SMV

SMD Multi Volt™ Crystal Oscillator
Tight Stability

[Request a Sample](#)

ECS-2520SMV SMD XO



- 2.5 x 2.0 mm Footprint
- Extended Temp Range
- RoHS Compliant
- Wide Supply Voltage
- Tight Stability
- Compatible with 1.8V, 2.5V or 3.3V Power Supply

DIMENSIONS (mm)

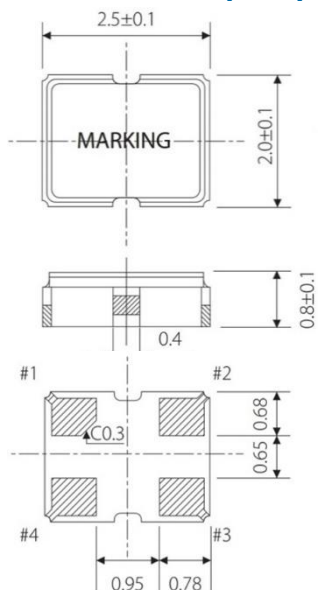


Figure 1) Top, Side, and Bottom views

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

| PARAMETERS | CONDITIONS | ECS-2520SMV | | | UNITS |
|-------------------------|---|-------------|-------|----------|-------|
| | | MIN | TYP | MAX | |
| Frequency Range | | 8.000 | | 60.000 | MHz |
| * Frequency Stability | -40 ~ +105°C (FP Opt) | | | ± 10 | ppm |
| Supply Voltage | | 1.62 | | 3.63 | V |
| Output Load | CMOS | | | 15 | pF |
| Output voltage Level | VOL: 0.2 V _{dd} max./VOH: 0.8V _{dd} min. V DC | | | | |
| Rise & Fall time | 20%V _{dd} – 80%V _{dd} | | | 3 | nS |
| Start Up Time | | | | 10 | mS |
| Phase Jitter | 12 KHz to 20 MHz | | | 1 | pS |
| Duty Cycle | @ ½ V _{dd} | | 45/55 | | % |
| Input Current (No Load) | | | 6 | 10 | mA |
| Standby Current | | | | 10 | μA |
| Operating Temp* | P Option | -40 | | +105 | °C |
| Storage Temp | | -55 | | +125 | °C |

PAD CONNECTIONS

| | |
|---|-----------|
| 1 | Tri-state |
| 2 | Gnd |
| 3 | Output |
| 4 | Vdd |

Tri State Function

| | |
|---------------------------------|----------------|
| Pin 1 | Output |
| 0.7 * V _{dd} Min OR NC | Active |
| 0.3 * V _{dd} Max. | High Impedance |

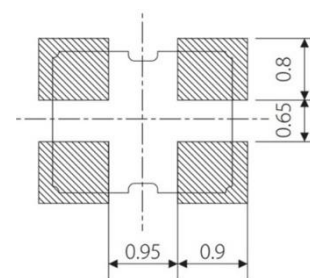


Figure 2) Suggested Land Pattern

PART NUMBERING GUIDE: Example ECS-2520SMV-250-FP-TR

| ECS | - | SERIES | FREQUENCY ABBREVIATION | - | * STABILITY | TEMP RANGE - | PACKAGING |
|-----|---|---|---|---|-------------------------------------|-------------------------------------|------------------------------------|
| | | 2520SMV 2.5 x 2.0 mm Multi Volt Oscillator Tight Stability | 250 = 25.000 MHz See Developed Frequencies Pg.2 | | F = ± 10 ppm G = ± 5 ppm | N = -40 ~ +85°C P = -40 ~ +105°C | -TR = Tape & Reel 1K/Reel |

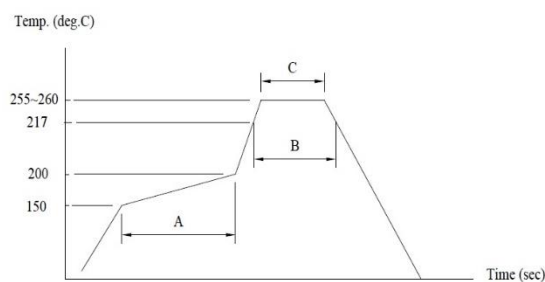
* Frequency Stability includes initial tolerance, temperature, supply voltage & load change reflow frequency shift, and aging.

Rev.2024

DEVELOPED FREQUENCIES

| FREQUENCY MHz | CODE |
|---------------|-------|
| 8.000 | 080 |
| 10.000 | 100 |
| 11.0592 | 110.5 |
| 12.000 | 120 |
| 16.000 | 160 |
| 19.200 | 192 |
| 20.000 | 200 |
| 24.000 | 240 |
| 24.576 | 245.7 |
| 25.000 | 250 |
| 26.000 | 260 |
| 27.000 | 270 |
| 30.000 | 300 |
| 32.000 | 320 |
| 33.000 | 330 |
| 33.333 | 333.3 |
| 38.400 | 384 |
| 40.000 | 400 |
| 48.000 | 480 |
| 50.000 | 500 |

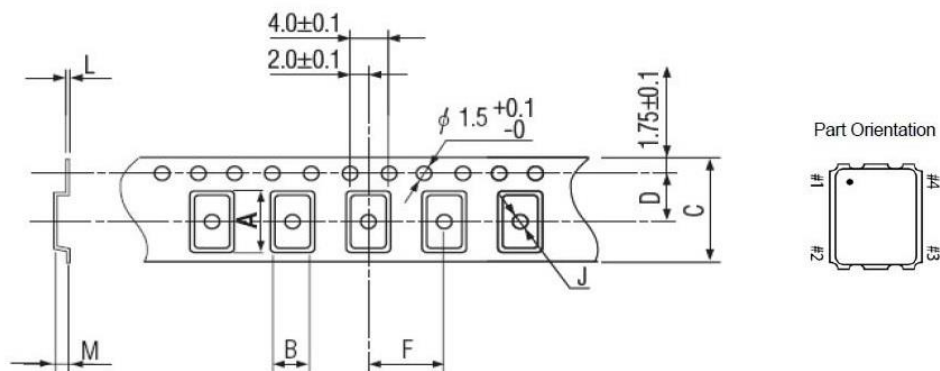
| SOLDER PROFILE |
|---|
| Peak solder Temp +260°C ±5°C 10 ±5 Sec Max. |
| 2 Cycles Max. |
| MSL 1, Lead Finish Au |



(A)→Preheating area : 150~200°C, 60~120sec.
 (B)→Heating area : 217°C, 60~150sec.
 (C)→Peak temperature : 255~260°C, 30sec. Max.
 Ramp-up rate (217→260°C) : 3°C/sec. Max.
 Ramp-down rate (260→217°C) : 6°C/sec. Max.
 Time 25°C→260°C : 480sec. Max.
 *Reference JEDEC J-STD-020

Figure 1) Suggested Reflow Profile

POCKET TAPE DIMENSIONS (mm)



| A | B | C | D | F | J | L | M | Reel Dia. | Qty/Reel |
|-----|-----|-----|-----|-----|-----|------|-----|-----------|----------|
| 2.8 | 2.3 | 8.0 | 3.5 | 4.0 | 1.0 | 0.25 | 1.1 | 180 | 1000pcs |

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[ECS:](#)

[ECS-2520SMV-100-FP-TR](#) [ECS-2520SMV-240-FP-TR](#) [ECS-2520SMV-110.5-FN-TR](#) [ECS-2520SMV-333.3-FP-TR](#)
[ECS-2520SMV-333.3-GP-TR](#) [ECS-2520SMV-260-FP-TR](#) [ECS-2520SMV-500-FP-TR](#) [ECS-2520SMV-330-FP-TR](#)
[ECS-2520SMV-260-FN-TR](#) [ECS-2520SMV-110.5-FP-TR](#) [ECS-2520SMV-110.5-GP-TR](#) [ECS-2520SMV-250-FP-TR](#)
[ECS-2520SMV-333.3-FN-TR](#) [ECS-2520SMV-120-FN-TR](#) [ECS-2520SMV-270-GP-TR](#) [ECS-2520SMV-330-FN-TR](#)
[ECS-2520SMV-300-FP-TR](#) [ECS-2520SMV-500-GP-TR](#) [ECS-2520SMV-240-FN-TR](#) [ECS-2520SMV-160-FN-TR](#) [ECS-](#)
[2520SMV-200-GP-TR](#) [ECS-2520SMV-260-GP-TR](#) [ECS-2520SMV-200-FN-TR](#) [ECS-2520SMV-080-FP-TR](#) [ECS-](#)
[2520SMV-320-FN-TR](#) [ECS-2520SMV-192-FN-TR](#) [ECS-2520SMV-100-FN-TR](#) [ECS-2520SMV-480-GP-TR](#) [ECS-](#)
[2520SMV-160-GP-TR](#) [ECS-2520SMV-270-FN-TR](#) [ECS-2520SMV-320-GP-TR](#) [ECS-2520SMV-330-GP-TR](#) [ECS-](#)
[2520SMV-320-FP-TR](#) [ECS-2520SMV-080-GP-TR](#) [ECS-2520SMV-080-FN-TR](#) [ECS-2520SMV-192-GP-TR](#) [ECS-](#)
[2520SMV-100-GP-TR](#) [ECS-2520SMV-240-GP-TR](#) [ECS-2520SMV-480-FP-TR](#) [ECS-2520SMV-120-FP-TR](#) [ECS-](#)
[2520SMV-480-FN-TR](#) [ECS-2520SMV-250-FN-TR](#) [ECS-2520SMV-120-GP-TR](#) [ECS-2520SMV-300-FN-TR](#) [ECS-](#)
[2520SMV-250-GP-TR](#) [ECS-2520SMV-160-FP-TR](#) [ECS-2520SMV-192-FP-TR](#) [ECS-2520SMV-200-FP-TR](#) [ECS-](#)
[2520SMV-500-FN-TR](#) [ECS-2520SMV-270-FP-TR](#) [ECS-2520SMV-384-FN-TR](#) [ECS-2520SMV-400-FN-TR](#)