

MINIATURE CERAMIC SMD OSCILLATOR (7.0 x 5.0 x 1.5mm)

FEATURES:

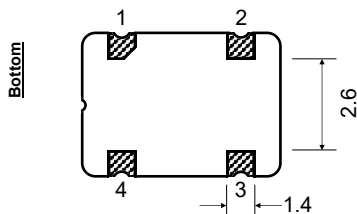
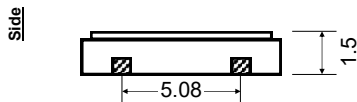
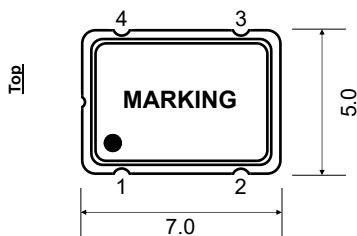
- STANDARD SMD PACKAGE OSCILLATOR
- LOW NOISE / LOW CURRENT
- LOW COST / SHORT LEAD TIME



■ SPECIFICATION

| | | | |
|---|--|--|-----------------------|
| FREQUENCY RANGE | 25KHz ~ 165.000MHz | 25KHz ~ 200.000MHz | 25KHz ~ 150.000MHz |
| FREQUENCY STABILITY | ±10ppm ~ ±100ppm | | |
| OPERATING TEMPERATURE RANGE | STD: 0°C ~ 70°C, Option: -40°C ~ 85°C, -55°C ~ 125°C (See P/N guide for other options) | | |
| STORAGE TEMPERATURE RANGE | -55°C ~ 125°C | | |
| SUPPLY VOLTAGE ±10% | 1.8V _{DC} ~ 2.5V _{DC} | 3.3V _{DC} | 5.0V _{DC} |
| SUPPLY CURRENT | 1MHz ≤ f < 25MHz | 12mA max. | 15mA max. |
| | 25MHz ≤ f < 50MHz | 15mA max. | 20mA max. |
| | 50MHz ≤ f < 70MHz | 20mA max. | 30mA max. |
| | 70MHz ≤ f < 125MHz | 30mA max. | 60mA max. |
| | 125MHz ≤ f | 40mA max. | 60mA max. |
| OUTPUT | LOGIC FAMILY | HCMOS, TTL, CMOS/TTL | |
| | LOAD | 15pF | 30pF max. (15pF typ.) |
| | LEVEL LOGIC '1' (V_{OH}) | HCMOS: 0.9 x V _{DD} min. TTL: 2.4V _{DC} min. | |
| | LEVEL LOGIC '0' (V_{OL}) | HCMOS: 0.1 x V _{DD} max. TTL: 0.4V _{DC} max. | |
| | SYMMETRY(DUTY CYCLE) | STD: 40% / 60% , Option: 45% / 55% | |
| | RISE AND FALL TIME (Tr/Tf) | 7nS max. | 8nS max. |
| | START-UP TIME | 10mS max. | |
| STAND-BY VOLTAGE | ENABLE (V_{IH}) | 0.7 x V _{DD} ≤ V _{IH} ≤ V _{DD} or N/C | |
| | DISABLE (V_{IL}) | V _{IL} ≤ 0.3 x V _{DD} | |
| ENABLE/DISABLE DELAY TIME | 10mS max. | | |
| AGING @ 25°C ± 3°C | ±3.0ppm / 1 st year max. | | |
| PHASE JITTER RMS (12kHz ~ 20MHz) | 1pS max. | | |

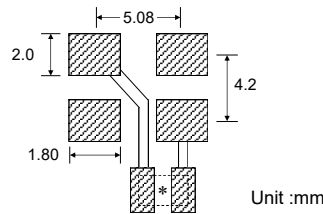
■ PACKAGE DIMENSIONS



Unit : mm

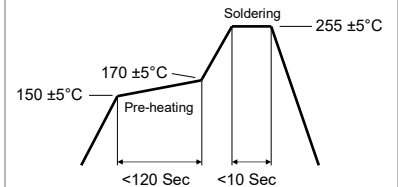
| Pin Configuration | |
|-------------------|-----------------|
| 1 | N.C. or En/Dis |
| 2 | GND |
| 3 | Output |
| 4 | V _{DD} |

■ SOLDER PATTERN



*0.01μF to 0.1μF bypass capacitor recommended

■ REFLOW PROFILE



Note: Consult factory for detail

■ PART NUMBERING GUIDE

TSM75 - H 50 HM 33 S T - 12.000M - TR

Output
H: HCMOS
T: TTL

Stability
00: ± 100ppm
50: ± 50ppm
25: ± 25ppm
15: ± 15ppm
10: ± 10ppm
XX: Two digit for stability

Operating Temperature
A: -55 F: -20 M: 70 S: 100
B: -50 G: -10 N: 75 T: 105
C: -40 H: 0 P: 80 U: 125
D: -35 J: 50 Q: 85 X: custom
E: -30 K: 60 R: 90

Supply Voltage
18: 1.8 Volt
25: 2.5 Volt
33: 3.3 Volt
50: 5.0 Volt

Options
Q : AEC-Q200
TR: 1000/reel
Blank: Cut tape

Frequency
K: kHz
M: MHz

Tristate
T: En/Disable
N: N/C

Symmetry
R: 40/60%
S: 45/55%

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