

SERIES AS-SMD



● FEATURES

- EXCELLENT CLOCK SIGNAL GENERATOR FOR CPU's
- AVAILABLE IN EXTENDED TEMPERATURE RANGE
- LOW PROFILE SURFACE MOUNT

● SPECIFICATIONS

| PARAMETER | | VALUE |
|--------------------------------------|----------------|--|
| FREQUENCY RANGE | | 3.200 MHz to 80.000 MHz |
| MODE OF OSCILLATION | FUNDAMENTAL | 3.200 MHz to 40.320 MHz |
| | THIRD OVERTONE | 24.576 MHz to 80.000 MHz |
| FREQUENCY TOLERANCE AT 25°C | | ±30 ppm max (other tolerances available) |
| FREQUENCY STABILITY OVER TEMPERATURE | | ±50 ppm max (other stabilities available) |
| OPERATING TEMPERATURE RANGE | | -20°C to +70°C Standard -40°C to +85°C Extended (other temperature ranges available) |
| STORAGE TEMPERATURE RANGE | | -55°C to +125°C |
| AGING | | ±5 ppm per year max |
| LOAD CAPACITANCE | | 6 pF to 32 pF or Series |
| EQUIVALENT SERIES RESISTANCE | | See Table 1 |
| SHUNT CAPACITANCE | | 5.0 pF max |
| DRIVE LEVEL | | 500 µW max |
| SHOCK RESISTANCE | | ±5 ppm max 75 cm drop test in 3 axes on to a hard wood surface |
| REFLOW CONDITIONS | | 260°C ±5°C for 10s max |



TABLE 1

| FREQUENCY (MHz) | MODE | MAX ESR (Ω) | FREQUENCY (MHz) | MODE | MAX ESR (Ω) | FREQUENCY (MHz) | MODE | MAX ESR (Ω) |
|-----------------|------|-------------|-----------------|------|-------------|------------------|----------|-------------|
| 3.579545 | FUND | 180 | 8.064 | FUND | 60 | 14.7456 | FUND | 40 |
| 3.6864 | FUND | 150 | 8.192 | FUND | 60 | 16.000 to 24.000 | FUND | 40 |
| 4.000 | FUND | 130 | 8.6436 | FUND | 60 | 24.576 | FUND/3OT | 40/80 |
| 4.032 | FUND | 130 | 9.600 | FUND | 60 | 27.000 | FUND/3OT | 40/80 |
| 4.096 | FUND | 130 | 9.8304 | FUND | 60 | 28.63636 | FUND/3OT | 40/80 |
| 4.194304 | FUND | 130 | 10.000 | FUND | 50 | 29.000 to 40.000 | FUND/3OT | 40/70 |
| 4.433619 | FUND | 130 | 10.240 | FUND | 50 | 40.320 | FUND/3OT | 40/70 |
| 4.9152 | FUND | 130 | 10.244 | FUND | 50 | 47.920 | 3OT | 70 |
| 5.0688 | FUND | 100 | 10.245 | FUND | 50 | 48.000 to 80.000 | 3OT | 70 |
| 6.000 | FUND | 80 | 11.000 | FUND | 50 | | | |
| 6.144 | FUND | 80 | 11.0592 | FUND | 50 | | | |
| 6.176 | FUND | 80 | 11.2896 | FUND | 50 | | | |
| 7.15909 | FUND | 70 | 12.000 | FUND | 50 | | | |
| 7.3728 | FUND | 70 | 12.288 | FUND | 50 | | | |
| 7.680 | FUND | 70 | 12.800 | FUND | 50 | | | |
| 8.000 | FUND | 60 | 14.31818 | FUND | 50 | | | |

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■ PART NUMBERING SYSTEM

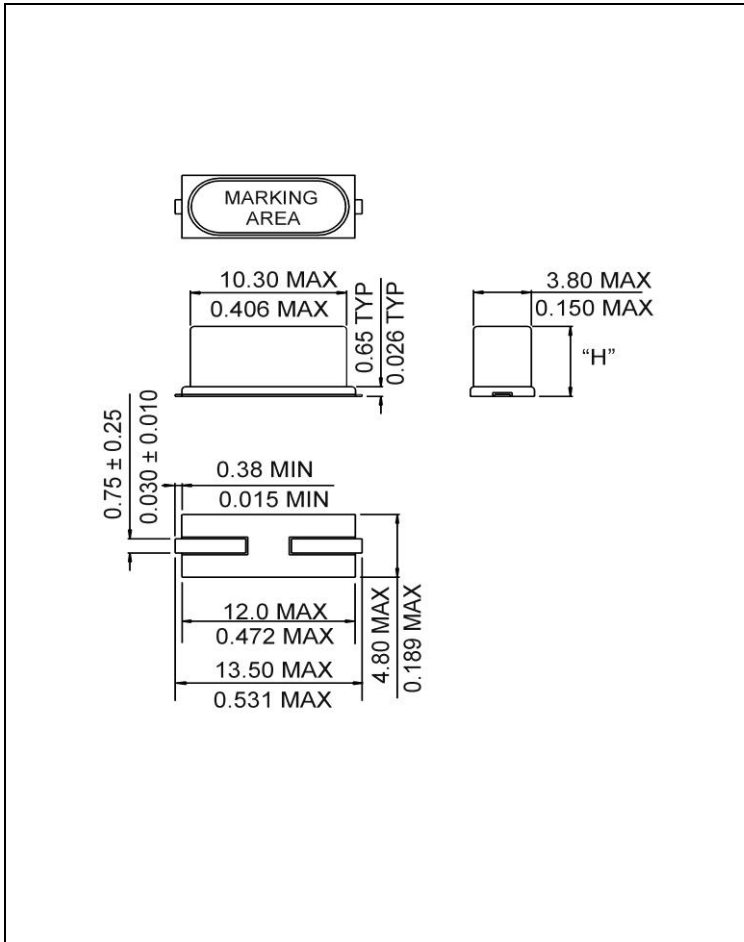
| TYPE | FREQUENCY | LOAD CAPACITANCE | MODE | TOLERANCE/STABILITY (PPM/PPM) |
|------|-----------|--------------------------------------|--|--|
| AS | IN MHz | 6 TO 32 pF FOR PARALLEL S FOR SERIES | Blank FOR < 24.576 MHz F FOR ≥ 24.576 MHz 3OT THIRD OVERTONE | Blank FOR MAXIMUM PPM/PPM Example: 1020, 2050 |

| EXTENDED TEMPERATURE | CONFIGURATION | HEIGHT (H) | TAPE & REEL |
|--|---------------|---|-------------|
| Blank FOR STANDARD EXT FOR EXTENDED | SMD | Blank FOR 4.0 mm (STANDARD) H25 2.5mm (CUSTOM) H27 2.7mm (CUSTOM) H30 3.0mm (CUSTOM) H32 3.2mm (CUSTOM) H35 3.5mm (CUSTOM) | TR |

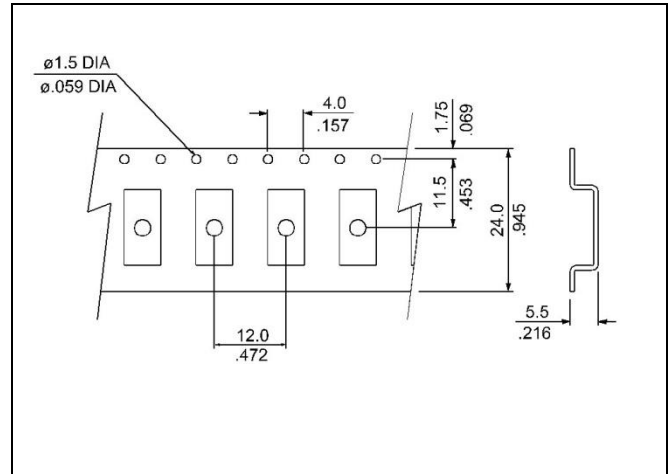
EXAMPLE: AS-24.000-18-SMD-TR

Surface Mount Microprocessor Crystal, HC-49 SHORT, 24.000 MHz, Fundamental mode, 18 pF load, ±30 ppm Tolerance, ±50 ppm Stability from -20°C to +70°C, Tape and reel packaging

● MECHANICAL SPECIFICATION



● CARRIER TAPE DIMENSIONS



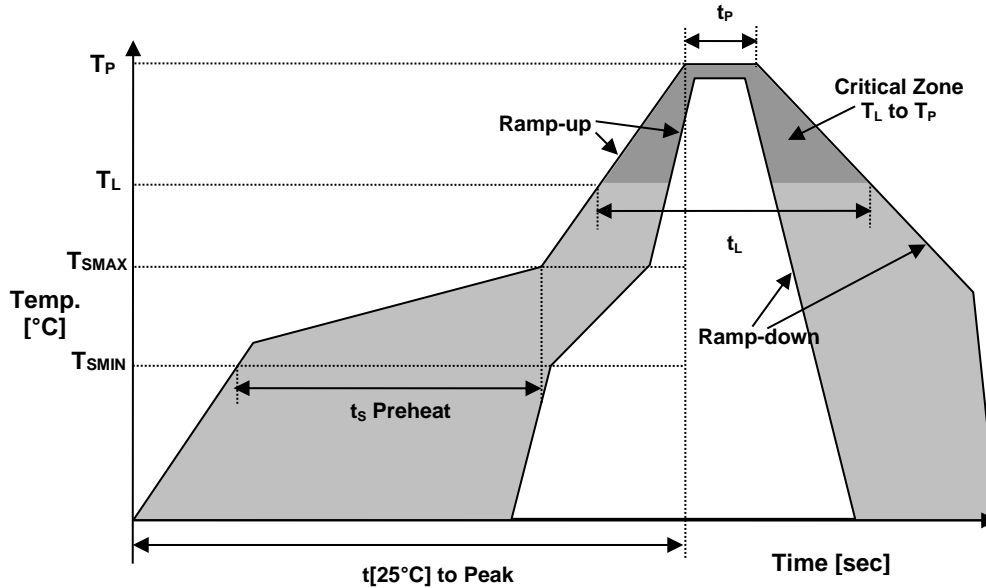
NOTE: REFER TO EIA-481 FOR NON-SPECIFIED DIMENSIONS

● PACKAGING

330 mm REEL DIAMETER
24 mm TAPE WIDTH, 12 mm PITCH
QUANTITY: 1000 PIECES PER REEL

IN ACCORDANCE WITH EIA-481

REFLOW PROFILE



| Reflow profile | | |
|---|----------------------------------|--------------|
| Temperature Min Preheat | T_{SMIN} | 150°C |
| Temperature Max Preheat | T_{SMAX} | 200°C |
| Time (T_{SMIN} to T_{SMAX}) | t_s | 60-180 sec. |
| Temperature | T_L | 217°C |
| Peak Temperature | T_P | 260°C |
| Ramp-up rate | R_{UP} | 3°C/sec max. |
| Ramp-down rate | R_{DOWN} | 6°C/sec max. |
| Time within 5°C of Peak Temperature | t_p | 10 sec. |
| Time $t_{[25^\circ\text{C}]}$ to Peak Temperature | $t_{[25^\circ\text{C}]}$ to Peak | 480 sec. |
| Time | t_L | 60-150 sec. |

ENVIRONMENTAL

| PARAMETER | VALUE |
|----------------------------|---------------|
| MOISTURE SENSITIVITY LEVEL | 1 |
| REACH SVHC | Compliant |
| RoHS | 6/6 Lead Free |
| TERMINATION FINISH | Sn |

