

● **FEATURES**

- SMALL PACKAGE OF 5.0 x 3.2 x 1.0 mm
- EXCELLENT TOLERANCE AND STABILITY
- CUSTOM SPECIFICATIONS AVAILABLE



● **SPECIFICATIONS**

PARAMETER		VALUE
FREQUENCY RANGE		12.000 MHz TO 150.000 MHz
MODE OF OSCILLATION	FUNDAMENTAL	8.000 MHz TO 50.000 MHz
	THIRD OVERTONE	40.000 MHz TO 150.000 MHz
FREQUENCY TOLERANCE AT 25°C		±50 PPM MAXIMUM (±10, ±20, AND ±30 PPM AVAILABLE)
FREQUENCY STABILITY OVER TEMPERATURE		±50 PPM MAXIMUM (±10, ±20, AND ±30 PPM AVAILABLE)
OPERATING TEMPERATURE RANGE		-20°C TO +70°C STANDARD <sup>1</sup> -40°C TO +85°C EXTENDED <sup>1</sup>
STORAGE TEMPERATURE RANGE		-40°C TO +85°C
AGING		±5 PPM PER YEAR MAXIMUM
LOAD CAPACITANCE		8 pF to 32 pF OR SERIES
EQUIVALENT SERIES RESISTANCE		SEE TABLE 1
SHUNT CAPACITANCE		7.0 pF MAXIMUM
DRIVE LEVEL		100 µW TYP, 300 µW MAX
SHOCK RESISTANCE		±5 PPM MAXIMUM 75 cm DROP TEST IN 3 AXES ONTO A HARD SURFACE
REFLOW CONDITIONS		260°C ±5°C FOR 10s MAXIMUM



<sup>1</sup> NOTE: NOT ALL STABILITIES ARE AVAILABLE FOR ALL OPERATING TEMPERATURE RANGES. CONTACT FACTORY FOR AVAILABILITY.

**TABLE 1**

FREQUENCY (MHz)	MODE	MAX ESR (OHMS)
8.000 TO 9.999	FUND	100
10.000 TO 11.999	FUND	80
12.000 TO 15.999	FUND	60
16.000 TO 19.999	FUND	50
20.000 TO 23.999	FUND	40
24.000 TO 50.000	FUND	30
40.000 TO 150.000	3OT	80

**■ PART NUMBERING SYSTEM**

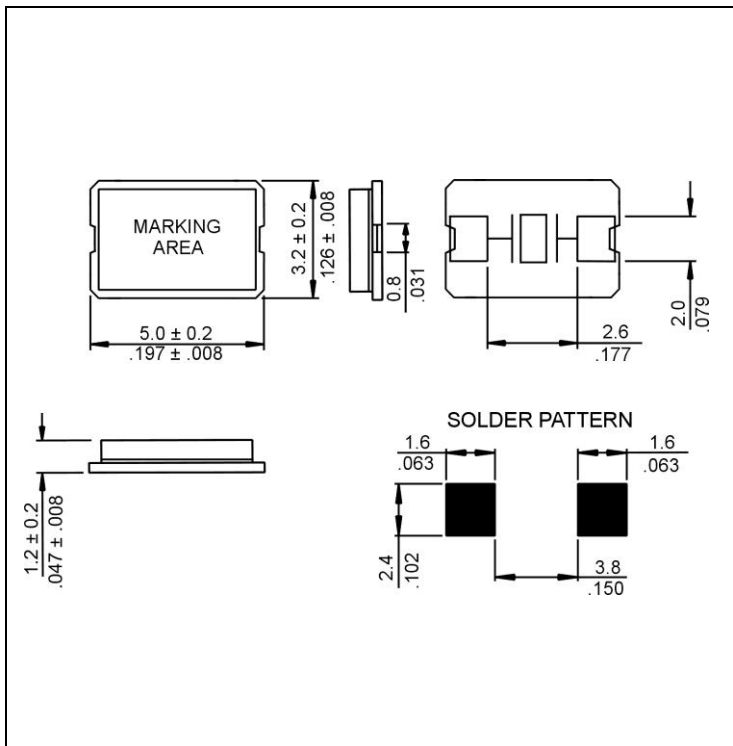
TYPE	FREQUENCY	LOAD CAPACITANCE	MODE	TOLERANCE/STABILITY (PPM/PPM)
H130A	IN MHz	8 TO 32 pF FOR PARALLEL S FOR SERIES	Blank FOR < 40.000 MHz F FOR ≥ 40.000 MHz 3OT THIRD OVERTONE	Blank FOR MAXIMUM PPM/PPM Example: 1020, 2050

EXTENDED TEMPERATURE	TAPE & REEL
Blank FOR STANDARD EXT FOR EXTENDED	TR

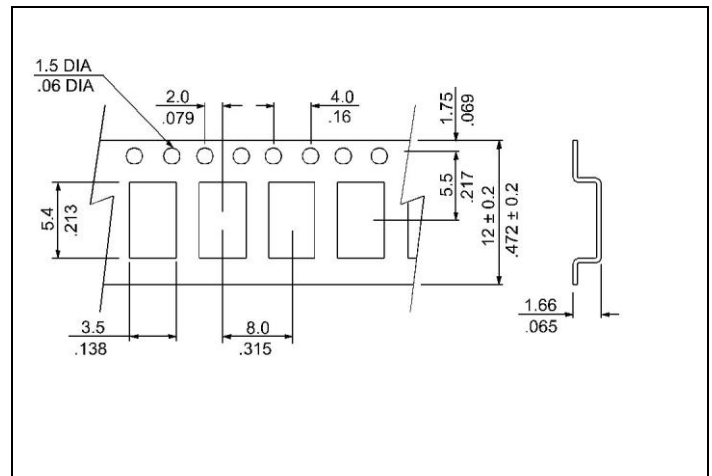
**EXAMPLE: H130A-24.000-18-TR**

Surface Mount Microprocessor Crystal, H130A package, 24.000 MHz, Fundamental mode, 18 pF load, ±50 ppm Tolerance, ±50 ppm Stability, from -20°C to +70°C, Tape and reel packaging

**● MECHANICAL SPECIFICATION**



**● CARRIER TAPE DIMENSIONS**



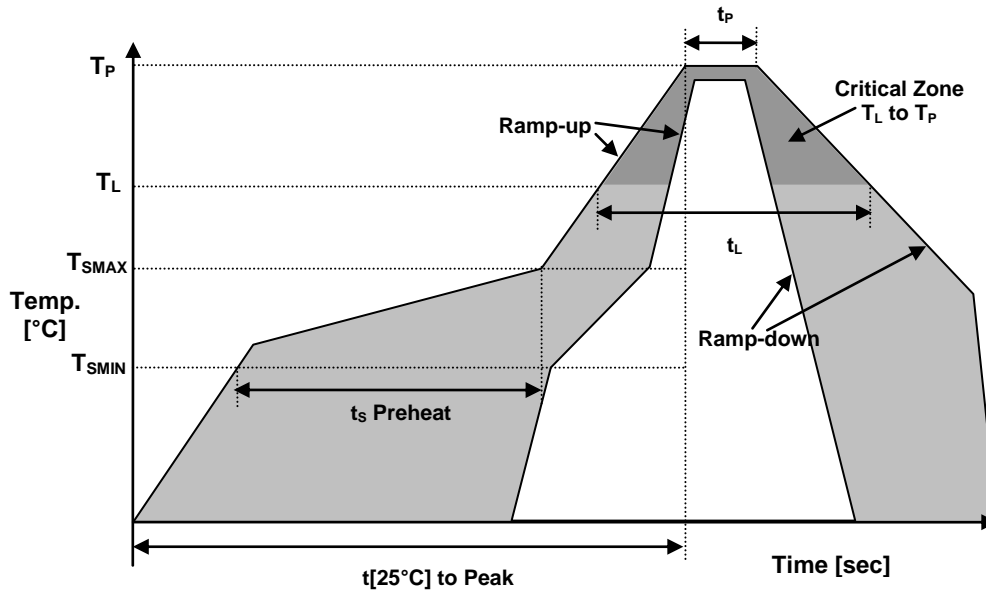
NOTE: REFER TO EIA-481 FOR NON-SPECIFIED DIMENSIONS

**● PACKAGING**

180 mm REEL DIAMETER  
12 mm TAPE WIDTH, 8 mm PITCH  
QUANTITY: 1000 PIECES PER REEL

IN ACCORDANCE WITH EIA-481

● REFLOW PROFILE



Reflow profile (Reference IPC/JEDEC J-STD-020)		
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
RoHS	6/6 COMPLIANT & LEAD FREE
REACH SVHC	COMPLIANT
HALOGEN-FREE	COMPLIANT
ESD CLASSIFICATION LEVEL	N/A
TERMINATION FINISH	Au
UNIT WEIGHT (GRAMS)	0.051

