RH100-16.000-12-2030-EXT-TR

SPECIFICATIONS

PARAMETER	VALUE
NOMINAL FREQUENCY	16.000 MHz
MODE OF OSCILLATION	Fundamental
FREQUENCY TOLERANCE AT 25°C	±20 ppm max
FREQUENCY STABILITY OVER TEMPERATURE	±30 ppm max
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-55°C to +125°C
AGING	±2 ppm first year max
LOAD CAPACITANCE	12 pF
EQUIVALENT SERIES RESISTANCE	70 Ω max
SHUNT CAPACITANCE	2 pF max
DRIVE LEVEL	300 µW max
INSULATION RESISTANCE	500 MΩ min @ DC 100V

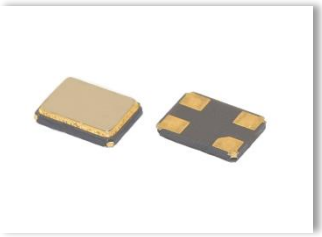
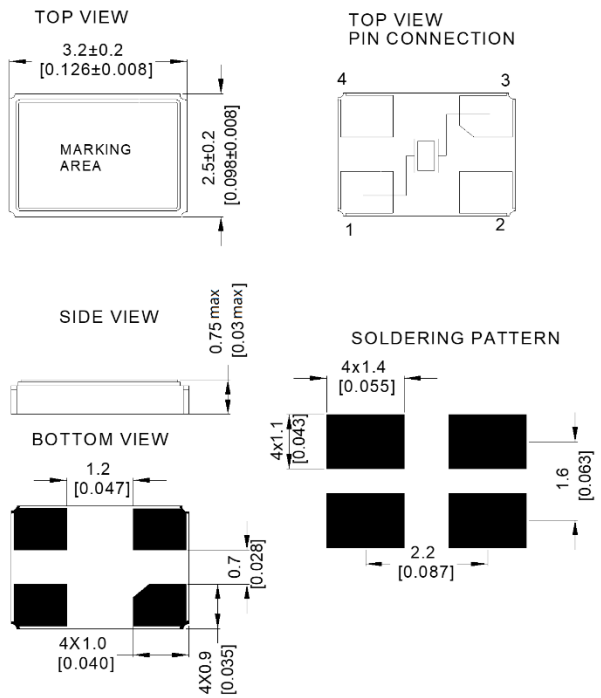


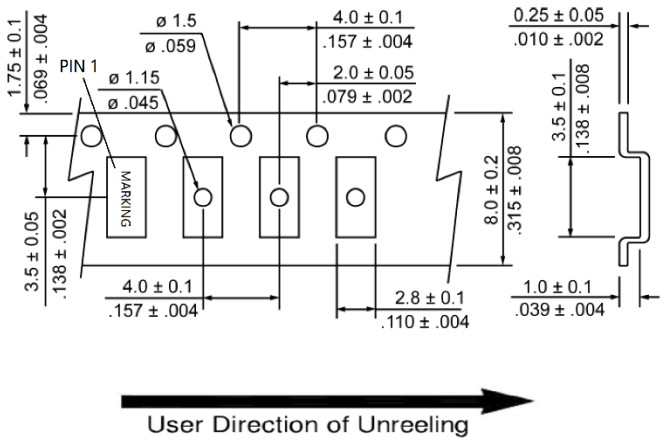
Photo is not actual part

MECHANICAL SPECIFICATION



Note: According to ceramic base availability the Chamfer location could be on a different pin. However, the Chamfer's location does not influence the electrical performance of the crystal.

CARRIER TAPE DIMENSIONS



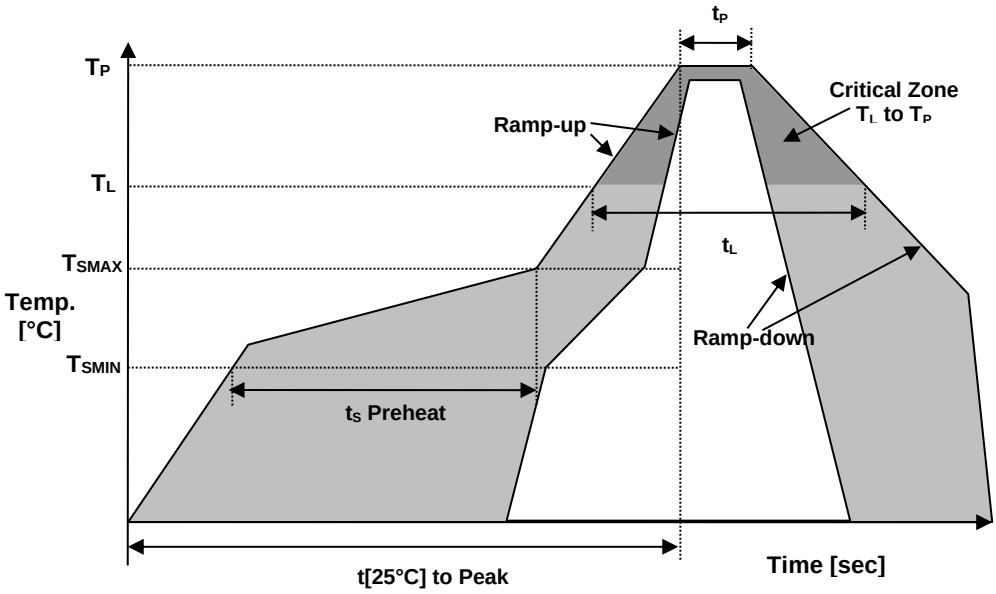
NOTE: REFER TO EIA-481 FOR DIMENSIONS

PACKAGING

178 mm REEL DIAMETER
8 mm TAPE WIDTH, 4 mm PITCH
QUANTITY: 3000 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°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t_L	60-150 sec.

ENVIRONMENTAL

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS	Compliant
REACH SVHC	Compliant
HALOGEN-FREE	Compliant
ESD CLASSIFICATION LEVEL	N/A
TERMINATION FINISH	Au

MARKING

R16.000
xJDyw

x – 1 or 2 Digits as Internal Production ID code
y – Year code
w – Week code

YEAR CODE	
Year	Code
2018	8
2019	9
2020	0
2021	1
2022	2
2023	3
2024	4
2025	5
2026	6
2027	7
2028	8
2029	9

ALPHA WEEK CODE TABLE					
Week	Code	Week	Code	Week	Code
1	a	19	s	37	K
2	b	20	t	38	L
3	c	21	u	39	M
4	d	22	v	40	N
5	e	23	w	41	O
6	f	24	x	42	P
7	g	25	y	43	Q
8	h	26	z	44	R
9	i	27	A	45	S
10	j	28	B	46	T
11	k	29	C	47	U
12	l	30	D	48	V
13	m	31	E	49	W
14	n	32	F	50	X
15	o	33	G	51	Y
16	p	34	H	52	Z
17	q	35	I		
18	r	36	J		

APPROVAL

DRAWN BY	AR, September 27, 2022
APPROVED BY	CP, September 27, 2022
REVISION	A, Initial Release B, Updated C0, drawing and marking by XLiu, March 14, 2024

RELIABILITY SPECIFICATIONS

Test Item	Test Methods/Conditions	Test Criteria	Reference
Drop Test	50cm for 2 times on hardWood.	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC68-2-32 Free Fall All Frequency tests adopt series mode
Vibration	Frequency: 20 to 2000 Hz to 20Hz, 20g Amplitude: 1.5 mm Direction: X, Y, Z Duration: 2.0 hours in each direction	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC68-2-6 MIL-STD-883H METHOD 2007.3 Condition A All Frequency tests adopt series mode
Solderability	Temperature: 260 ±5℃ Time: 10 ±1 second	Pinhole, void and porosity, where the area must less than 5% Good hermetically	GB/T12273.1-4.8.3.2 All Frequency test adopt series mode
Aging	100ºC for 168 hours	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC 60068-2-2 (GB/T2423.2-2008) MIL-STD-883H Method 1008.2 All Frequency tests adopt series mode
Fine Leak	Helium Bombing:0.4~0.5MPa Time:1 hour	Helium Bombing:0.4~0.5MPa Time:1 hour	MIL-STD-883H METHOD 1014.13 All Frequency tests adopt series mode
High Temp Storage	Temperature: 85℃ ± 5℃ Time 96 hours	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC 60068-2-2 (GB/T2423.2-2008) All Frequency tests adopt series mode
Temperature Cycle	25℃ ±3℃ for 10 minutes -40℃ ±3℃ for 10 minutes 25℃ ±3℃ for 10 minutes 125℃ ±3℃ for 10 minutes 20 cycles	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	MIL-STD-883HMETHOD 1010.8 All Frequency tests adopt series mode

Resistance to Soldering Heat	Temperature: 235℃ ±5℃ Time: 2 ±0.2 second	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	GB/T12273.1 -4.8.3.1 All Frequency tests adopt series mode
Humidity	Temperature: 40℃ ±2℃ Relative Humidity: 90%~95% Time: 96 hours	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC 60068-2-3 Damp Heat (GB/T2423.3-2006) All Frequency tests adopt series mode
Thermal Shock	-40℃ ±3℃ to 100℃ ±3℃, soak 15 minutes at each point, transfer time within 15 seconds, 20 cycles	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC 60068-2-14 (GB/T 2423.22 -2002) MIL-STD-883HMETHOD 1011.9 All Frequency tests adopt series mode
Low Temp Storage	-40℃ ±3℃ for 96 hours	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	IEC68-2-1 (GB/T2423.1-2008) All Frequency tests adopt series mode
IR Reflow	Pre-Heating:150℃ to 200℃, 60-120 seconds Heating:217℃, 60 to 150 seconds Peak temp: 260℃ ±5℃, 20 ±5 seconds	⊿Freq.≤±10ppm, ⊿ESR ≤±3Ω or 20% Good hermetically	JEDEC J-STD-020C All Frequency tests adopt series mode
Salt Spray	35+/-2℃，5% salt spray for 24 hours	No corrosion	MIL-STD-883H Method 1009.8 Condition A All Frequency tests adopt series mode