REVISION RECORD

LTR	PAGES	DESCRIPTION	DATE	APPD
-	4	ORIGINAL	9-14-95	
A	1-2	CR3678	9-19-95	AWS

REV A
9/19/95
RELEASED
SK

REVISION INDEX

SHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
REV	A	A	-	-																																										

SIGNATURES		DATE	TITLE	DOCUMENT NUMBER
ORIG	AWS	9-15-95	PRECISION CRYSTAL SPECIFICATION	02-35650
APPD	WAZ	9-15-95	10.000MHz RH P/N 04-35650-001	PAGE 1 OF 4

CODE IDENT 82567

REEVES-HOFFMAN
DIVISION DYNAMICS CORPORATION OF AMERICA

Precision Crystal Specification

1. **Frequency Range:**
   10.000 Mhz

2. **Type:**
   3rd Overtone SC Cut

3. **Circuit Operation:**
   Parallel

4. **Finish Point:**
   22 pF ± 0.1 pF

5. **Motional Parameters:**
   a. Motional Capacity: 0.00024 pF ±10%
   b. Series Resistance: 65 ohms max.
   c. Minimum Q: 900K
   d. Shunt Capacity: 3.4 pF nominal

6. **Resistance Variation:**
   Less than 0.1 dB for a Drive Level change from 1 to 100 uW.

7. **Setting Tolerance:**
   0 to +3 PPM at 22pF and Turnover Temperature.

8. **Temperature Performance:**
   a) Turnover temperature: Between +60°C and +80°C .
   b) Perturbations: Not to exceed $5x10^{-10}$ within ±5°C of Turn Point Temperature.

9. **Operating Temperature Range:**
   -20 Deg. C. to +100 Deg. C

10. **Retrace:**
    Crystal units shall retrace to within $1x10^{-9}$ of the frequency at turn-off within 20 minutes after turn-on following a 24 hour off period.

11. **Aging Restabilization: N/A**

DOCUMENT NUMBER	SHT REV
02-35650	
SHEET 2 OF 4	A

CODE IDENT 82567

REEVES—HOFFMAN
DIVISION DYNAMICS CORPORATION OF AMERICA

12. **Aging Rate:**
    Long Term: $\pm 5x10^{-10}$/Day after 7 Days
    $\pm 5x10^{-8}$ /Year
    ± 1 PPM / 20 Years operation maximum

13. **G Sensitivity:**
    $< 2x10^{-9}$ per G each axis (2 G Tipover test)

14. **Phase Noise:**
    The design of the resonator should optimize low offset frequency (<1 Hz) phase noise performance. Blank preparation should include processing steps for good surface finish and stress relief to minimize "phase pops".

15. **Holder Type:**
    TO-8 size coldweld, high vacuum enclosure.

16. **Blank Orientation and Mount**
    All crystal blanks will be mounted consistently with respect to their principle axes and a reference point on the enclosure within TBD degrees. Crystal will be mounted using a conventional 3 point mount with blank oriented for optimal thermal transient performance.

17. **Solderability:**
    All crystal leads will be solderable to within .025" of the base.

18. **Marking:**
    Each crystal will be marked with the Part Number 04-35650-001 , S/N, Turn Point, and Date Code.

19. **Change Control:**
    No changes to the crystal design or process after initial qualification is to be made without prior approval of the RH Oscillator Engineering Department.

20. **Test Data**

    Test data is required on all units for items 5a,5b, 5d, 7, and 8a.

21. **Approved Sources:**

Identification of a source of supply is not to be construed as a guarantee of continued availability.

Manufacturer	Manufacturer's P/N
Bliley Crystal Corporation	