

Specification MOSA/CV2226 Issue 3 Dated 13-2-53 To be read in conjunction with K1001	<u>SECURITY</u>	
	<u>Specification</u>	<u>Valve</u>
	UNCLASSIFIED	UNCLASSIFIED

→ Indicates a change

TYPE OF VALVE - Matched crystal for use in preplumbed detection units FREQUENCY RANGE - The crystal valve is intended to operate within a frequency range of 12,000 to 4,000 Mc/s CONSTRUCTION - The crystal valve shall be rendered pan-climatic within the temperature range -40°C to +100°C PROTOTYPE -	<u>MARKING</u>
	Valves to be marked "CV2226"
	<u>DIMENSIONS</u>
	See K1001/A1/9 & 9A also Drawing on Page 3

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TESTS

To be performed in addition to those applicable in K1001

	Test	Limits		No. tested	Note
		Min.	Max.		
a	Crystals shall be subjected to 5-watts peak power at 9375 Mc/s. Repetition frequency 1000, pulse length 1 microsecond. Duration of test to be 10 seconds, when deterioration of crystal performance must not exceed ± 2 db.			5% 20 per week	1, 2, 3.
b	Back to forward resistance ratio Forward resistance (ohms)	10:1 -	275	100%	4.
c	<u>Current Sensitivity</u> - The rectified current shall not be less than 0.7 microamp when measured with an input level of 5 microwatt. For this test the crystal detector shall be used to terminate a concentric line of 70 ohms impedance and measurements shall be made at a frequency of 9375 Mc/s $\pm 0.1\%$ through a load resistance not exceeding 50 ohms. A similar test is to be carried out at 100 kc/s $\pm 0.1\%$	0.7 μ A 0.7 μ A		100% 100%	
d	<u>Voltage Standing Wave Ratio</u> Standing wave ratio to be measured when the crystal is used to terminate a concentric line of 70 ohms impedance at a frequency of 9375 Mc/s $\pm 0.1\%$. This test shall be performed at a level of 10^{-6} watts (or a rectified current of 1 microamp).		Not worse than 0.4:1	5% 20 per week	
e	<u>Self Generated Noise</u> To be measured with the crystal terminating a concentric line of 70 ohms impedance and with the crystal output shunted by 10,000 ohms and connected to the input terminals of a video amplifier of 1 Mc/s pass band. The level of square wave modulated signal fed to the coaxial line should not exceed 0.1 microwatts for "tangential conditions". (The "tangential condition" is to be taken as that at which 99% of the noise peaks on the video display are below the amplitude of the square wave modulated. This condition represents a signal to noise ratio of approximately 13 dbs.)			100%	
f	<u>Video Resistance</u> The D.C. resistance shall be not greater than 7000 ohms when the applied voltage is 1 millivolt				

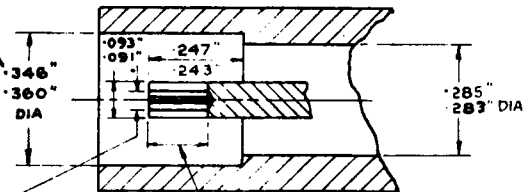
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NOTES

1. Crystals subjected to this test should not be put up for acceptance.
2. Clauses 5.5.2, 5.5.3 and 5.5.4 in specification K1001 shall apply.
3. If the tests specified result in the rejection of a significant proportion of valves otherwise satisfactory for use as low level detectors the limits shall be reconsidered and decided as a result of statistical examination of a representative batch of valves.
4. To be measured on Avometer Model No.7 on the 100,000 ohm scale or an equivalent meter.

DIMENSION TO SUIT FLEXIBILITY OF SOCKET SO AS TO TAKE UP ECCENTRICITY TOLERANCE IN CRYSTAL

4 SAWCUTS .010" TO .006" WIDE .100" MIN. DEPTH



.052" TO .0535" DIA. HOLE CLOSED AFTER SAWCUTS MADE AND SUITABLY HEAT TREATED

LENGTH TO SUIT SAWCUT SUGGESTED HOLDER DETAILS