MINISTRY OF SUPPLY - DLRD(A)/RRE (South) VALVE ELECTRONIC **CV2258**

Specification MOS(A)/CV2258 Issue 2 Dated 19.1.55 To be read in conjunction with K1001.	SECURITY	
	Specification	Valve
	UNCLASSIFIED	UNCLASSIFIED

TYPE OF VALVE - Silicon Low-level Detector Crystal

CONSTRUCTION - Shielded coaxial type. The valve is suitable for panclimatic operation at atmospheric pressures equivalent to 67 mm of mercury.

POLARITY - The pin is equivalent to the cathode of a conventional diode.

PROTOTYPE - CS4B

MARKING

CV2258

Factory Identification Code

Date Code

RATING

			Note
Max Operating Frequency	(Mc/s)	12000	
Max Operating Temperature Range	(°C)	-40 to +100	

CONNECTIONS

The cat's whisker shall be connected to the centre pin contact.

DIMENSIONS

See K1001/AI/D9 & D9a

MOUNTING POSITION

Any

To be performed in addition to those applicable in K1001

	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
a	Burn-out (Processing Test)	5 watts RF peak power shall be applied to the valve. f = 9375 ± 100 Mc/s; PRF = 1000 ± 100 pps; tp = 1.0 ± 0.1 uS; Duration = 10 secs min. Note 1.		100%		-	-	
b	1. Resistance Ratio Backwards-to-forwards	Using an Avometer Model 7 the valve shall be tested on the 100,000-ohm range.		100%		10:1	-	
	2. Forward Resistance			100%	Rf	-	275	ohms
c	Voltage Sensitivity - X-band	Valve shall be tested using an approved holder and a load having a 10k ±5% resistance. f = 9375 ± 10 Mc/s; CW input power = 1 to 5 uW; Note 2.		100%	Sx	1	4	mV/uW
d	Voltage Sensitivity - S-band	As for Test (c) f = 3000 ± 3 Mc/s; Note 2.		TA	Ss	To be recorded		mV/uW
e	VSWR - X-band	As for Test (c) CW input power = 5 uW; Note 3.	4.0	IA		0.5	-	
f	Video Resistance	Input voltage = 1.0 mV DC		100%	Rv	2000	7000	ohms
g	Burn-out	As for Test (a) but RF peak power = 1.0 W min; Duration = 5 mins. min; Note 1.	6.5	IB				
	Change in voltage sensitivity - X-band	As for Test (c).			ΔSx	-	2	db
h	Tensional Stability	An axial tension of 15 lbs shall be applied to the centre pin for 1 min.	6.5	IB				
	Resistance ratio	As for Test (b)				8:1	-	
	Forward resistance	As for Test (b)			Rf	-	300	ohms
	Voltage sensitivity - X-band	As for Test (c)			Sx	0.8	4.2	mV/uW
	Video resistance	As for Test (f)			Rv	1900	7350	ohms

TESTS (contd.)

	Test	Test Conditions	AQL %	Insp. Level	Sym-bol	Limits Min.	Limits Max.	Units
j	Vibrational Stability	f = 50 c/s nom; Min. pk. accel. = 12g; Duration = 2 x 10 mins; Note 4.	6.5	IB				
	Resistance ratio	As for Test (b)				8:1	-	
	Forward resistance	As for Test (b)			Rf	-	300	ohms
	Voltage sensitivity - X-band	As for Test (c)			Sx	0.8	4.2	mV/uW
	Video resistance	As for Test (f)			Rv	1900	7350	ohms
k	Climatic Conditioning	See K1001/10.1 Duration = 7 x 24 hrs	6.5	IB				
	Resistance ratio	As for Test (b)				8:1	-	
	Forward resistance	As for Test (b)			Rf	-	300	ohms
	Voltage sensitivity - X-band	As for Test (c)			Sx	0.8	4.2	mV/uW
	Video resistance	As for Test (f)			Rv	1900	7350	ohms
m	Temperature Cycling	The valve shall be subjected to 6 cycles over the range - 40°C to +70°C. Each cycle shall take not less than one hour.		TA				
	Resistance ratio	As for Test (b)				8:1	-	
	Forward resistance	As for Test (b)			Rf	-	300	ohms
	Voltage sensitivity - X-band	As for Test (c)			Sx	0.8	4.2	mV/uW
	Video resistance	As for Test (f)			Rv	1900	7350	ohms

NOTES

1. The input power shall be derived from a source matched better than 0.5 VSWR.
2. The approved holder shall match the mean crystal when measured under the specified test conditions.
3. Reference should be made to Section 1 - Sampling Inspection by Attributes - of Appendix XI to Joint Service Specification, K1001 for information regarding inspection procedure.
4. The valve shall be vibrated sinusoidally in two directions mutually at right angles, one of which shall be along the major axis. See also K1001/11.3.
5. **All tests shall be performed at an ambient temperature with the range 20 ± 5°C.**