

MINISTRY OF AVIATION - DLRD/RRE

VALVE ELECTRONIC
SEMICONDUCTOR DEVICECV7051
CV7052
CV7053

Specification MOA/CV7051/52/53 Issue 1 dated 28th Oct. 1959 To be used in conjunction with K1007	<u>SECURITY</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

indicates a change

TYPE OF DEVICE - High Speed Silicon Junction Diode CONSTRUCTION - Single ended, metal body PROTOTYPE - VX3286, VX1521		<u>MARKING</u>	
<u>RATING</u>		G.V. Number	
All limiting valves are absolute		Polarity marking and if possible Factory Code and Date Code	
		See K1007/4	
		<u>DIMENSIONS</u>	
		As K1007/A1/D1	
		<u>MOUNTING POSITION</u>	
		Any	
		<u>PACKAGING</u>	
		As K1007/14	
<u>NOTES</u>			
A. Forward current of 10 mA passed for at least 10/ μ Secs and a 20 volt pulse applied in the reverse direction. The pulse shall have a rise time of less than 10/ μ Sec over the amplitude range 10 - 90% and a duration of not less than 0.5/ μ Sec. The test shall be made in the approved circuit shown in Figure 2 on page 2.			
B. See derating curve Figure 1 on page 2.			
C. Measured at the specified reverse voltage.			
D. JOINT SERVICE CATALOGUE NUMBER 5960 - 99 - 037 - 2091 = CV7051 5960 - 99 - 037 - 2092 = CV7052 5960 - 99 - 037 - 2093 = CV7053			

DISSIPATION DERATING CURVE

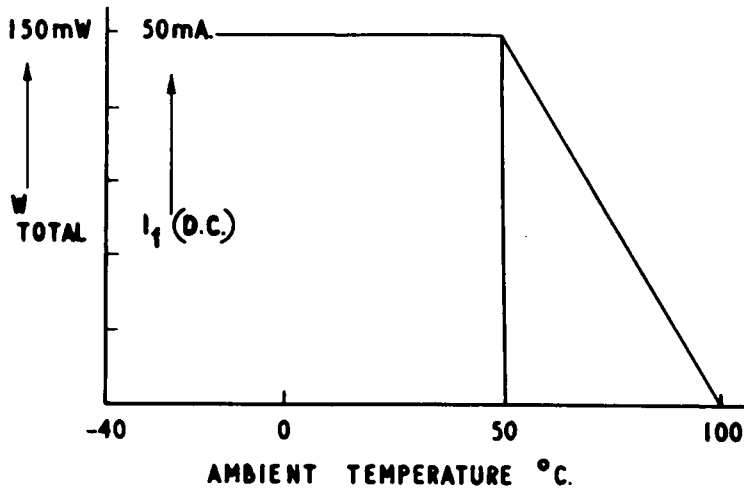


FIG. 1.

TEST CIRCUIT.

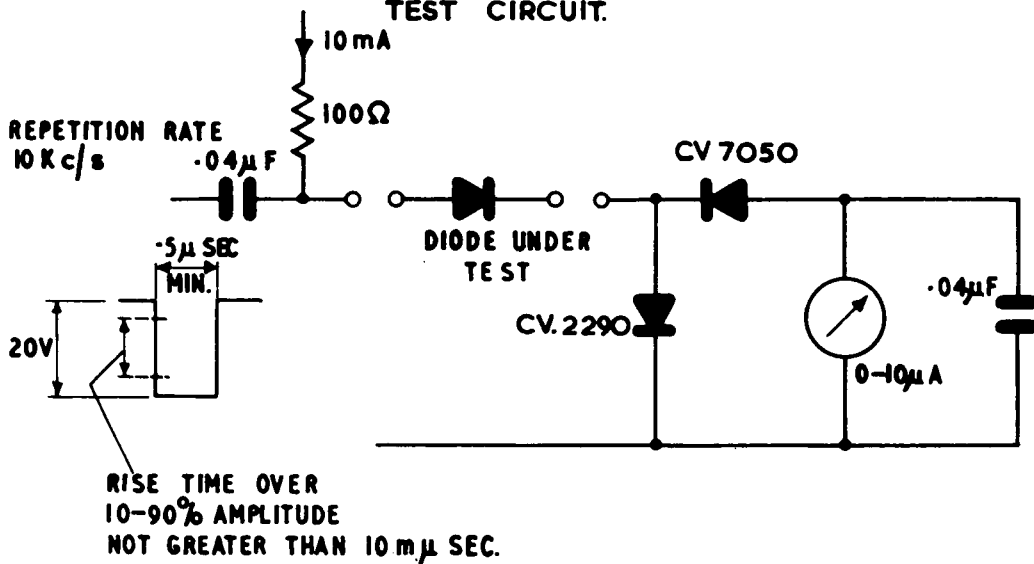


FIG. 2

TESTS

To be performed in addition to those applicable
in K1007

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K1007 ref.	Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
5B.4	<u>GROUP A</u> Forward Voltage Drop	$I_f = 10 \text{ mA d.c.}$ $T = 15 - 30^\circ\text{C}$ amb		100%	V_f	0.7	1.3	V
	Charge Stored Note A. page 1	$I_f = 10 \text{ mA for}$ 10 Sec. min. Reverse voltage pulse $20 \pm 1 \text{ volt}$ applied Note A. page 1		100%	Q		4	Coulombs $\times 10^{-10}$
	GROUP B - omitted							
5B.2	<u>GROUP C</u> Reverse current	$T = 100^\circ\text{C} \pm 3^\circ\text{C}$ C.V. 7051 25 V C.V. 7052 50 V C.V. 7053 100 V	4.0	1	I_r	-	50	μA
5B.5	Capacitance	$V = -10 \pm 1 \text{ V}$	6.5	1C	C		3.5	pF
10.2	<u>GROUP E</u> Temperature Cycling	Three cycles - 40°C to $+100^\circ\text{C}$ No voltages. Note 1			IC			
10.3	Climatic Cycling	No voltages. Note 1						
	<u>Post Temperature & Climatic Cycling Tests</u>	Combined AQL	10					
8	Inoperatives	No voltages	6.5					
5B.4	Forwarding Voltage Drop	As in Group A	6.5		V_f	0.65	1.35	V
11.3	Fatigue	No voltages			IC			
	<u>Post Fatigue Tests</u>	Combined AQL	10					
8	Inoperatives	No voltages	6.5					
5B.4	Forward Voltage Drop	As in Group A	6.5		V_f	0.65	1.35	V
11.4	Shock	No voltages Hammer angle - 60°			TA			
10.1	Lead fragility	No voltage. Note 2	6.5		IC			
11.5	Soldering	No voltages	6.5		IC			

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TESTS

To be performed in addition to those applicable in K1007

K1007 ref.	Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
						Min	Max	
13	<u>GROUP F</u> <u>Life</u>	Half wave circuit with resistive load T = 50°C min. amb I _o = 50 mA. Note 3 C.V. 7051 PIV = 25 V C.V. 7052 PIV = 50 V C.V. 7053 PIV = 100 V		IA				
13.3	<u>Life Test End Point 1000 hours</u>							
8	Inoperatives	No voltages	6.5					
5B. 4	Forward Voltage Drop	As in Group A	6.5		V _F	0.65	1.35	V
13.4	Storage Life (1)	t = 150 hours T = -40°C amb		I				
13.5	Storage Life (2)	t = 150 hours T = +100°C amb		I				
	<u>Post Storage Life Tests</u>							
5B.4	Forward Voltage Drop	As in Group A			V _F	0.7	1.3	V
		Storage Life (1)	2.5					
		Storage Life (2)	4.0					
	<u>GROUP G</u>							
8	Re-test after 28 days holding period			100%				
8	Inoperatives	No voltages	0.5					
5B. 4	Forward Voltage Drop	As in Group A	2.0		V _F	0.7	1.3	V

NOTES

- The samples of diodes shall be subjected to conditioning in accordance with K1007 Section 10.1 and shall then be subjected to temperature cycling and climatic cycling in sequence and shall then pass the post temperature and post climatic cycling tests.
- Diodes used for this test must have undergone at least 28 cycles of the climatic test in accordance with K1007, Section 10.3.1 or 10.3.2 or 6 cycles in accordance with Section 10.3.3.
- Alternatively the manufacturer may life test at any temperature between 50 and 100°C at a current determined by figure 1 page 2.