

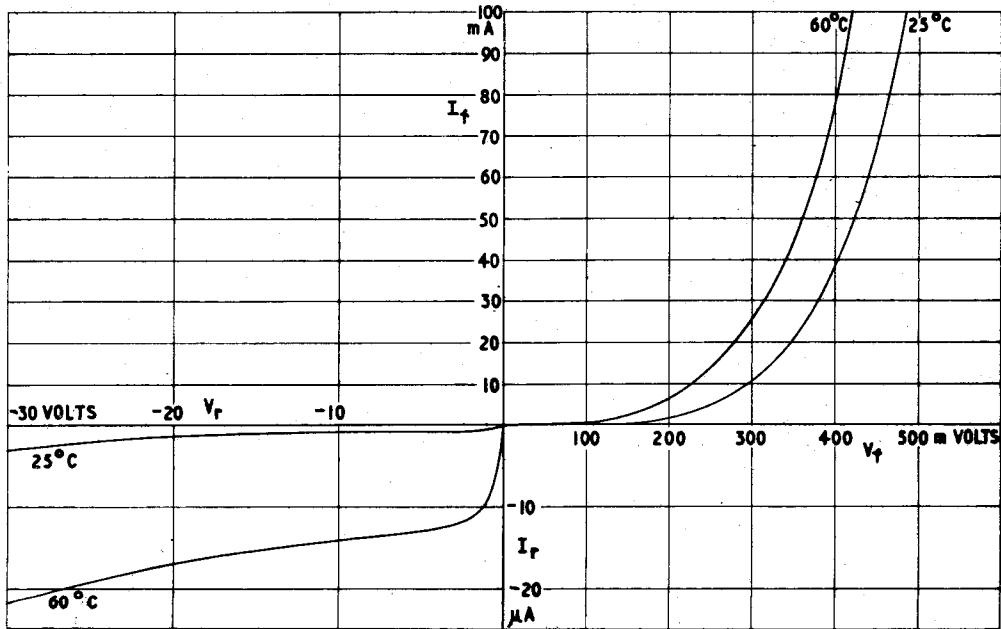
MINISTRY OF SUPPLY - DLRD/RREVALVE ELECTRONIC  
SEMICONDUCTOR DEVICE**CV7049**

Specification MOS/CV7049 Issue 1 dated 14.8.59 To be used in conjunction with K1007	<u>SECURITY</u>	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

Indicates a change

<p>TYPE OF DEVICE - Germanium junction Diode</p> <p>CONSTRUCTION - Single ended, Glass</p> <p>PROTOTYPE - QA10</p>			<u>MARKING</u>
			CV number Polarity Marking Date code See K1007/4
<u>RATING</u>		<u>DIMENSIONS</u>	
All limiting values are absolute		See K1007.A1.D2 except that the length of flange at present 0.320" shall read 0.120". Leads in accordance with D1.	
		Note	<u>MOUNTING POSITION</u>
Max. peak inverse voltage	(V) 30		Any
Max. peak forward current	(A) 1.0		
Max. average forward current	(mA) 100	A	<u>PACKAGING</u>
Max. storage temperature	(°C) 75		
Max. junction temperature	(°C) 75		See K1007/14
Thermal coefficient	(°C/mW) 0.4	B	
Max. forward voltage			
@ T.amb = 25°C, If = 30 mA	(V) 0.5		
@ T.amb = 60°C, If = 30 mA	(V) 0.43	C	
Max. reverse current			
@ T.amb = 25°C, Vr = 30v	(mA) 0.05		
@ T.amb = 60°C, Vr = 30v	(mA) 0.20		
Max. recovery time, T.amb = 25°C	(µS) 0.3	D	
Average Recovery time, T.amb = 25°C	(µS) 0.2	E	
Max. continuous vibration	(g) 10		
Max. shock	(g) 500		
<u>CAPACITANCE</u>			
C <sub>ak</sub> max.	(pF) 10		
<u>NOTES</u>			
A. Average over any 50 mSec period.			
B. Junction temperature rise above ambient with device in free air			
C. Typical value			
D. Time for current to decay to 0.5mA; measured with If = 10 mA and Vr = 10v applied through 300 ohms.			
E. Time for current to decay to 20 mA; measured with If = 400 mA and Vr = 26v applied through 65 ohms.			
F. JOINT SERVICE CATALOGUE NUMBER 5960 - 99 - 037 - 2080			

CV7049/1/1



CHARACTERISTICS AT 25°C AND 60°C

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.	
	<u>GROUP A</u>							
5.B.4	Forward Voltage (1)	If = 30 mA d.c		100%	Vf	-	0.5	V
5.B.2	Reverse Current (1)	Vr = 30V.		100%	Ir	-	50	$\mu$ A
	<u>GROUP B</u>							
5.B.4	Forward Voltage (2)	If = 100 mA	1.0	II	Vf	-	0.6	V
	<u>GROUP C</u>							
	Recovery Time (1)	If = 10 mA  V inv = 7V applied through 300 ohms Note 1	2.5	I	tr	-	0.3	$\mu$ S
	<u>GROUP D</u>							
5.B.2	Reverse Current (2)	Vr = 20V T.amb = 55 $\pm$ 2°C	2.5	IA	Ir	-	70	$\mu$ A
	Recovery Time (2)	If = 400 mA V inv = 26 V applied through 65 ohms Note 2	6.5	IC	tr	-	0.35	$\mu$ S
5.B.4	Forward Voltage (3)	If = 1.0A	6.5	IC	Vf	-	1.0	V
5.B.5.1	Capacitance	Vr = 10V Vrf = 10 mV rms max.	6.5	IC	Cak	-	10	pF
10	Photosensitivity	Vr = 20V	2.5	I	Ir	-	5	$\mu$ A
	Forward recovery	If = 400 mA pk Rise Time 0.16 $\mu$ S Note 4	6.5	IC	Vs	-	0.2	V

K1007 ref.	Test	Test Conditions	AQL %	Insp. Level	Sym- bol	Limits		Units
						Min	Max	
	<u>GROUP E</u>							
11.5	Soldering Note 3	No Voltages		IC				
10.1	Lead Fragility	No Voltages		IC				
10.2	Temperature Cycling	Three Cycles -40 to + 75°C No Voltages		IA				
10.3	Climatic	No Voltages						
11.3	Fatigue	No Voltages		IC				
11.4	Shock	Hammer Angle = 60°		TA				
	<u>Post Temperature cycling, Climatic, Fatigue and Shock Tests</u>	Overall AQL for each group of Tests	10.0					
8	Inoperatives		6.5					
5.B.4	Forward Voltage (1)	If = 30 mA dc	6.5		Vf	-	0.55	V
5.B.2	Reverse Current (1)	Vr = 30V	6.5		Ir	-	60	µA
10	Photosensitivity	Vr = 20V	6.5		Ir	-	5	µA
	<u>GROUP F</u>							
13.3	Life	Half wave circuit with resistive load I.L.V. = 30 f = 50 c/s Io = 30 mA T amb = 45°C min.			IA			
13.4	Storage Life (1)	T amb = 40°C t = 150 hours		I				
13.5	Storage Life (2)	T amb = 75°C t = 150 hours		I				

TESTS (Continued)

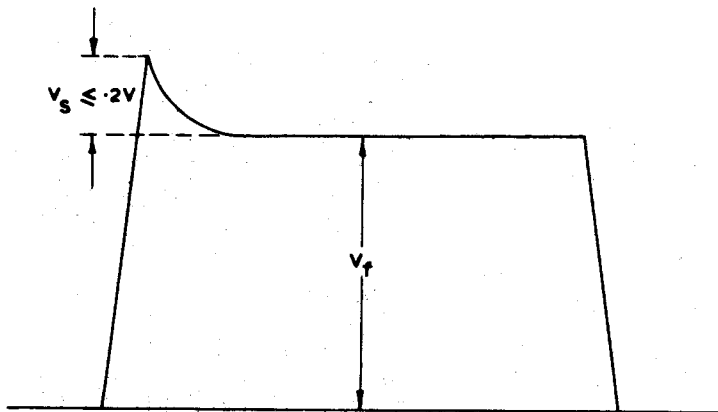
K1007 ref.	Test	Test Conditions	AQL	Insp. Level	Sym- bol	Limits		Units
						Min.	Max.	
	<u>Life Test End - point 1000 hours and Post Storage Life Tests (1) and (2)</u>	Combined AQL for each group of Tests.	6.5					
5.B.4	Forward Voltage (1)	If = 30 mA d.c	4.0		Vf	-	0.55	V
	Reverse Current (1)	Vr = 30V	4.0		Ir	-	60	$\mu$ A
10	Photosensitivity	Vr = 30V	4.0		Ir	-	5	$\mu$ A
	<u>GROUP G</u>							
	Re-test after 28 days storage period			100%				
8	Unoperatives		0.5					
5.B.4	Forward Voltage (1)	If = 30 mA d.c	2.0		Vf	-	0.5	V
5.B.2	Reverse Current (1)	Vr = 30V	2.0		Ir	-	50	$\mu$ A

NOTES

1. Time for current to decay to 0.5 mA
2. Time for current to decay to 20 mA
3. Diodes used for this test must have undergone at least 28 cycles of climatic conditions in accordance with K1007, Section 10.3.1 or 10.3.2 or 6 cycles in accordance with Section 10.3.3
4. See drawing on page 6.

## NOTE 4

DIAGRAM ILLUSTRATING TURN-ON TRANSIENT FORWARD VOLTAGE

 $V_f$  - FORWARD VOLTAGE $V_S$  - TRANSIENT FORWARD VOLTAGE