ELECTRONIC VALVE SPECIFICATIONS
SPECIFICATION CV7405 - 7429

ISSUE NO.1 DATED 2.7.63
AMENDMENT NO.1

Page 2 Primary Electrical Characteristics CV 7413

Col.9 I_R at 100°C Amend 1.0 mA to read 0.1 mA.

Page 5 Sub-Group 3. Vibration Fatigue

Amend Inspection Level 1 to read 1A

Page 6 Sub-Group 8. Operation Life

Under Col. headed Specific Conditions add t = 1000 hours.

Engineer in Chief G.P.O.

April, 1964.

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV.7405-7429

ISSUE No. 1 DATED 2.7.1963

AMENDMENT No. 2

Page 2, Primary Electrical Characteristics.

CV.7406 Col. 9 IR at 100°C, amend 0.6 mA to read 1.25 mA

CV.7407 Col. 9 IR at 100°C, amend 0.3 mA to read 0.6 mA

Engineer-in-Chief G.P.O.

July, 1964

Against CV.7405-29 note that CV.7405-19 are Current category.

MILITARY SPECIFICATION

CV7405 — CV7429

SEMICONDUCTOR DEVICES, VOLTAGE-REGULATOR DIODES

Description This Specification covers the detail requirements for Silicon Voltage-Regulator Diodes, and is in accordance with K1007, except as otherwise stated.

Mechanical Dimensions and Outline

K1007 Section B. 10.3.3.1.

Connections Flange and Cathode.

Absolute Maximum Ratings

Rating	P_{tot}	T_{op}	T_{stg}	Shock	Vibration
Unit	W	°C	°C	g	g
Minimum		-55	-55		
Maximum	1	150	150	1500	20
Note	1			2	

Notes:- 1 See Derating Curve Fig. 1, Page 8

2 Duration 0.5 mS

3 Commercial Equivalent 1Z-T5 Series

(190357)

Primary Electrical Characteristics

CV 7405 - CV 7429

CV No.	1	2	3	4	5	6	7	8	9	10
	V_z Nom.	V_z Min.	V_z Max.	I_z (test current)	r_z Max.	S_z Min.	S_z typ.	S_z Max.	I_R @ 100°C	V_R test voltage
	volts	volts	volts	mA	ohms	%/°C	%/°C	%/°C	mA	volts
7405	3.3	3.1	3.5	50	14.0	-0.105	-0.07	-0.04	2.5	2
7406	3.6	3.4	3.8	50	13.0	-0.095	-0.06	-0.025	0.6	2
7407	3.9	3.7	4.1	50	12.0	-0.080	-0.04	-0.010	0.3	2
7408	4.3	4.0	4.5	50	11.0	-0.065	-0.02	0.005	0.2	2
7409	4.7	4.4	5.0	50	10.0	-0.050	0.0	0.020	0.1	2
7410	5.1	4.8	5.4	50	9.0	-0.035	0.01	0.035	0.05	2
7411	5.6	5.3	6.0	50	8.0	-0.020	0.03	0.050	0.05	2
7412	6.2	5.8	6.6	50	7.0	-0.005	0.04	0.065	0.01	2
7413	6.8	6.4	7.2	20	6.0	0.005	0.05	0.075	1.0	5.6
7414	7.5	7.1	7.9	20	4.5	0.015	0.055	0.085	0.1	6.2
7415	8.2	7.7	8.7	20	4.0	0.015	0.06	0.085	0.1	6.8
7416	9.1	8.6	9.6	20	4.0	0.020	0.065	0.090	0.1	7.5
7417	10.0	9.4	10.6	20	4.5	0.020	0.07	0.090	0.1	8.2
7418	11.0	10.4	11.6	20	5.5	0.025	0.07	0.095	0.1	9.1
7419	12.0	11.4	12.6	20	7.0	0.025	0.075	0.095	0.1	10.0
7420	13.0	12.4	14.1	20	10.0	0.030	0.075	0.100	0.1	11.0
7421	15.0	13.9	15.6	10	16.0	0.030	0.08	0.100	0.1	12.0
7422	16.0	15.4	17.1	10	20.0	0.035	0.08	0.105	0.1	13.0
7423	18.0	16.9	19.1	10	28.0	0.035	0.085	0.105	0.1	15
7424	20.0	18.9	21.2	10	37.0	0.040	0.085	0.110	0.1	16
7425	22.0	20.8	23.3	10	47.0	0.040	0.09	0.110	0.1	18
7426	24.0	22.7	25.9	10	55.0	0.045	0.09	0.115	0.1	20
7427	27.0	25.1	28.9	10	70.0	0.045	0.095	0.115	0.1	22
7428	30.0	28.6	31.8	10	85.0	0.050	0.095	0.120	0.1	24
7429	33.0	31.3	34.7	10	110.0	0.050	0.10	0.120	0.1	27

2nd July, 1963.

Requirements:

Marking K1007, Section B, 1.3.4. Minimum requirements 1.3.4.1. (a), (b) and (d).

Quality Assurance Provisions:

Destructive Tests The tests listed in Table II Group B Inspection, Sub-groups 2 and 3, and in Table III Group C Inspection, Sub-group 2 are considered destructive.

Group C Inspection Inspection shall be conducted on the initial lot and thereafter every 90 days or every fifth lot whichever occurs first.

Preparation for Delivery:

Packaging The devices shall be packed according to K1007, Section A 1.2 (c).

Joint Service Catalogue Numbers:

CV 7405 = 5960-99-037-3441	CV 7418 = 5960-99-037-3454
CV 7406 = 5960-99-037-3442	CV 7419 = 5960-99-037-3455
CV 7407 = 5960-99-037-3443	CV 7420 = 5960-99-037-3456
CV 7408 = 5960-99-037-3444	CV 7421 = 5960-99-037-3457
CV 7409 = 5960-99-037-3445	CV 7422 = 5960-99-037-3458
CV 7410 = 5960-99-037-3446	CV 7423 = 5960-99-037-3459
CV 7411 = 5960-99-037-3447	CV 7424 = 5960-99-037-3460
CV 7412 = 5960-99-037-3448	CV 7425 = 5960-99-037-3461
CV 7413 = 5960-99-037-3449	CV 7426 = 5960-99-037-3462
CV 7414 = 5960-99-037-3450	CV 7427 = 5960-99-037-3463
CV 7415 = 5960-99-037-3451	CV 7428 = 5960-99-037-3464
CV 7416 = 5960-99-037-3452	CV 7429 = 5960-99-037-3465
CV 7417 = 5960-99-037-3453	

This Specification has been prepared by and the Qualification Approval Authority is:

The Engineer-in-Chief,
General Post Office,
S Branch,
LONDON.

TABLE 1 GROUP A INSPECTION

Examination or Test	Test Conditions		AQL %	Insp. Level	Symbol	Limits		Units
	K1007/3 NATO Ref.	Specific Conditions				Min.	Max	
SUB-GROUP 1								
Visual and Mechanical	5.1	Excluding Physical Dimensions	0.65	II				
SUB-GROUP 2								
Breakdown Voltage	8A2.4	T_{amb} = 25°C. I_z as Col. 4.	0.65	II	V_z	Col.2	Col.3	Volts
Forward Voltage Drop	8A3.2	T_{amb} = 25°C. I_F = 0.9A			V_F	-	1.1	Volts
Slope Resistance	8A4.1	T_{amb} = 25°C. I_z as Col. 4.			Z_z	-	Col.5	Ohms
SUB-GROUP 3								
Reverse Leakage	8A2.2.1	T_{amb} = 100°C.	2.5	I	I_R	-	Col.9	mA
SUB-GROUP 4								
Temperature Coefficient	8A7.3	T_1 = 25°C. I_z as Col. 4 T_2 = 60°C.	4.0	1A	S_z	Col.6	Col.8	%/°C.

TABLE 2 GROUP B INSPECTION

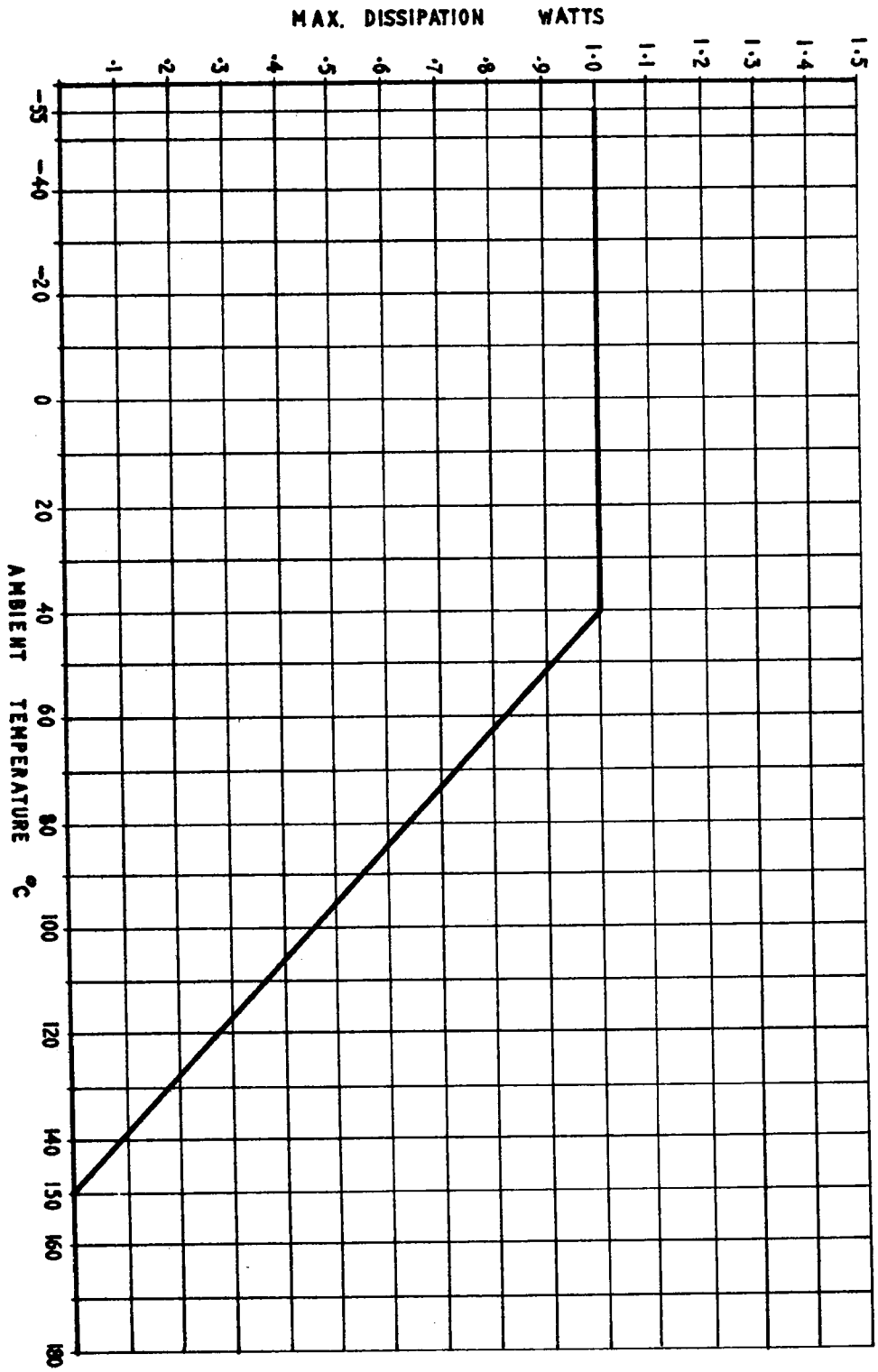
Examination or Test	Test Conditions		AQL %	Insp. Level	Symbol	Limits		Units
	K1007/NATO Ref.	Specific Conditions				Min	Max	
SUB-GROUP 1								
Physical Dimensions	5.1	According to Drawing 10.3.3.1	6.5	1C				
SUB-GROUP 2								
Solderability	5.13							
Temperature Cycling	5.5	$-55^{\circ}C$ to $+100^{\circ}C$	4.0	1A				
Moisture Resistance	5.3							
SUB-GROUP 3								
Vibration Fatigue	5.15	Non-Operating	4.0	I				
SUB-GROUP 4								
Omitted								
SUB-GROUP 5								
Omitted								
SUB-GROUP 6								
Omitted								
SUB-GROUP 7								
High Temperature Life (non-operating)	6.2.1 6.6.1.2.2	$T_{amb} = 100^{\circ}C$ t = 1000 hours	4.0	I				

TABLE 2 GROUP B. INSPECTION Cont'd

Examination or Test	Test Conditions		AQL %	Insp. Level	Symbol	Limits		Units
	K1007/NATO Refer	Specific Conditions				Min.	Max.	
SUB GROUP 8			4.0	IA				
Operation life	6.3.4	T_{amb} = not greater than 140°C						
	6.5 6.6.1.1 6.6.1.2.2	I_z to give dissipation not less than that according to the derating curve.						
Post Test End Points for Sub-Groups 2, 3, 7 and 8.								
Breakdown Voltage	8A 2.4	As Group A. Sub-Group 2			V_z	Col.2	Col.3	Volts

TABLE 3 GROUP C INSPECTION

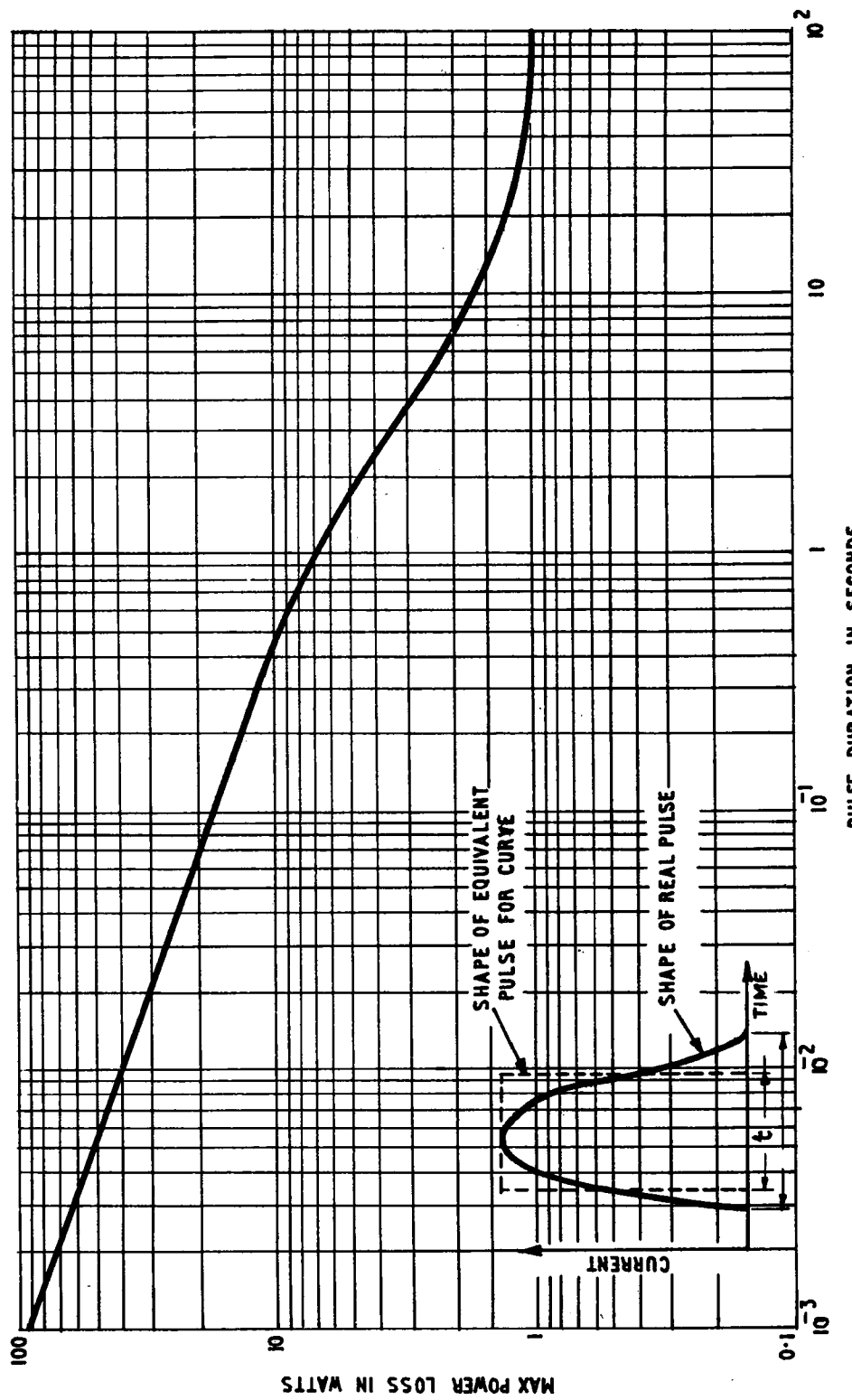
Examination or Test	Test Conditions		AQL %	Insp. level	Symbol	Limits		Units
	K1007/3 NATO Ref.	Specific Conditions				Min	Max	
SUB-GROUP 1								
Omitted								
SUB-GROUP 2								
Shock	5.17	Non-operating 5 blows in each of 3 mutually perpendicular directions.	6.5	1A				
Post-Test End Point for Sub-Group 2								
Breakdown Voltage	8A2.4				V_z	Col.2	Col.3	Volts



DERATING CURVE FIG. 1.

APPLICATION DATA 1

PERMISSABLE INTERMITTENT POWER LOSS AT 25°C AMBIENT TEMPERATURE
FREE CONVECTION COOLING IN AIR, COOLING INTERVAL BETWEEN PULSES AT LEAST 2 MINUTES



APPLICATION DATA 2
SLOPE RESISTANCE