ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION CV 7361

ISSUE NO. 1 DATED 15.6.1962

AMENDMENT NO. 2

Page 1. Note A. Amend to read "pages 2 and 6".

Page 2. Derating curve for transistor on heat sink. Delete this curve and insert new page 6.

Page 4. Life. Amend to read "T mounting base 50°C"

Ministry of Aviation/S.R.D.E.

July, 1963.

VALVE ELECTRONIC

Ministry of Aviation - D.L.R.D/S.R.D.E. (SEMICONDUCTOR DEVICE) **CV 7361**

Specification MOA/CV7361

Issue No. 1 dated 15.6.62.

To be read in conjunction with K.1007

SECURITY	
Specification	Valve
Unclassified	Unclassified

→ Indicates a change

TYPE OF VALVE - Silicon npn transistor for high current switching and high frequency power oscillators.

CONSTRUCTION - Metal body

PROTOTYPE - TK203A

MARKING

See K.1007/4

CV number and if possible Factory and Date Code

RATINGS AND CHARACTERISTICS
(Not for Inspection purposes)

All limiting values are absolute

RATINGS

			NOTE
Max. dissipation in free air at 25°C ambient	(W)	3.0	A
Max. dissipation on heat sink at 25°C	(W)	10	A
Max. collector-base voltage, emitter open circuit	(V)	40	
Max. collector emitter voltage, base open circuit	(V)	20	
Max. emitter base voltage collector open circuit	(V)	6	
Max. mean collector current	(A)	0.5	
Max. Peak collector current	(A)	1.5	B
Max. mean base current	(A)	0.1	
Max. peak base current	(A)	0.3	B
Max. operating and storage temperature	(°C)	150	
Min. operating and storage temperature	(°C)	-55	

CHARACTERISTICS

Min. transition frequency (f_T)	(Mc/s)	100	

CONNECTIONS

The collector lead shall be connected to the metal case

DIMENSIONS

See K.1007/A1/D4A and D4B
Insulating washers and bushes shall be supplied

MOUNTING POSITION

Any

PACKAGING

K.1007/14

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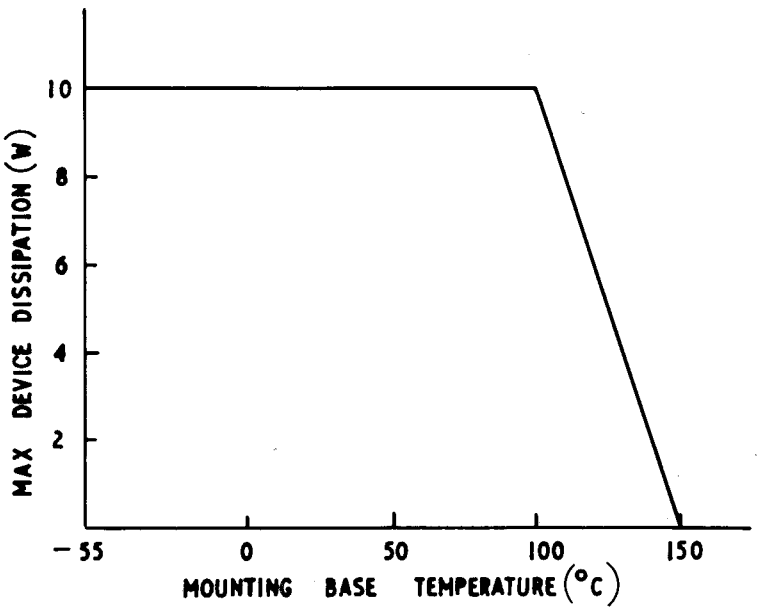
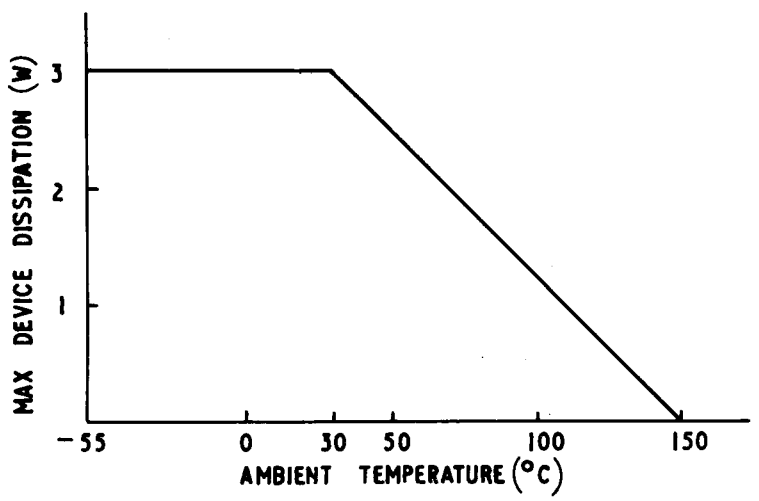
NOTES

A. See derating curves on page 2.

B. For a period of less than 100 μ sec.



DERATING CURVE FOR TRANSISTOR ON HEAT SINK



DERATING CURVE FOR TRANSISTOR IN FREE AIR.

TESTS

CV7361

K.1007	TEST	TEST CONDITIONS	AQL %	INSP LEVEL	SYMBOL	LIMITS MIN	LIMITS MAX	UNITS
	GROUP A - Omitted							
	GROUP B							
5.D.2	Collector-base leakage current (1)	V_{CB} = 9V I_E = 0	0.65	II	I_{CBO}	-	0.05	µA
5.D.2	Collector-base leakage current (2)	V_{CB} = 40V I_E = 0	0.65	II	I_{CBO}	-	10	µA
5.D.3.2	Saturation Voltage (1)	I_C = 200mA I_B = 12.5mA	0.65	II	$V_{CE(sat)}$	-	1.0	V
5.D.3.2	Saturation Voltage (2)	I_C = 450mA I_B = 100mA	0.65	II	$V_{CE(sat)}$	-	3.0	V
	High frequency current gain	V_{CE} = 9V I_C = 20mA d.c. and 0.25mA a.c. rms (max) superimposed f = 20 Mc/s	0.65	II	$\|h_{fe}\|$	5	-	
	GROUP C							
5.D.3.1	Base-emitter voltage (1)	I_C = 200mA I_B = 12.5mA	2.5	I	V_{BE}	-	1.5	V
5.D.3.1	Base-emitter voltage (2)	I_C = 450mA I_B = 100mA	2.5	I	V_{BE}	-	3.0	V
5.D.4	Small signal common emitter current gain	V_{CE} = 9V I_C = 20mA d.c. and 0.25mA a.c. rms (max) superimposed f = 1000 c/s	2.5	I	h_{fe}	20	-	
5.D.2.2	Emitter base leakage current	V_{EB} = 6V I_C = 0	2.5	I	I_{EBO}	-	1	mA
5.D.7	Collector base capacitance	V_{CB} = 6V I_E = 0 f = 1 Mc/s	2.5	I	C_{ob}	-	35	pF
	GROUP D							
5.D.2	Collector base leakage current (3)	V_{CB} = 40V I_E = 0 T_{amb} = 100°C	6.5	IA	I_{CBO}	-	100	µA

K.1007	TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	SYMBOL	LIMITS MIN	LIMITS MAX	UNITS
	GROUP E							
11.5	Soldering	No voltages	6.5	IC				
10.2	Temperature cycling	No voltages Three cycles $-55^{\circ}C$ to $+150^{\circ}C$		IC				
10.3	Climatic cycling	No voltages						
11.3	Fatigue	No voltages		IC				
11.4	Shock	No voltages Hammer angle 60°		QA				
	Post Temperature cycling, Climatic cycling, Fatigue and Shock tests	Combined AQL for each Group	10					
8	Inoperatives		6.5					
5.D.2	Collector-base leakage current (1)	As in Group B	6.5		I_{CBO}	-	0.07	µA
	Collector-base leakage current (2)	As in Group B	6.5		I_{CBO}	-	12	µA
5.D.3.2	Saturation voltage	I_C = 200mA I_B = 15mA	6.5		$V_{CE(sat)}$	-	1.0	V
	GROUP F							
13	Life	V_{CB} = 20V (min) P = 10W $T_{mounting\ base}$ $100^{\circ}C$ Notes 1 and 2		IA				
13.3	Life Test end Point 1000 hrs.	Combined AQL	6.5					
8	Inoperatives		4.0					
5.D.2	Collector-base leakage current (1)	As in Group B	4.0		I_{CBO}	-	0.07	µA
	Collector-base leakage current (2)	As in Group B	4.0		I_{CBO}	-	12	µA
5.D.3.2	Saturation voltage (1)	I_C = 200mA I_B = 15mA	4.0		$V_{CE(sat)}$	-	1.0	V

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K.1007	TEST	TEST CONDITIONS	AQL %	INSP. LEVEL	SYMBOL	LIMITS MIN	LIMITS MAX	UNITS
	GROUP F (Cont'd)							
13.4	Storage Life (1)	No voltages t = 150 hrs. T_{amb} = -55°C		I				
13.5	Storage Life (2)	No voltages t = 150 hrs. T_{amb} = 150°C		I				
	Post Storage Life Tests	Combined AQL	2.5					
5.D.2	Collector-base leakage current (1)	As in Group B			I_{CBO}	-	0.07	µA
	Collector-base leakage current (2)	As in Group B			I_{CBO}	-	12	µA
5.D.3.2	Saturation voltage (1)	I_C = 200mA I_B = 15mA			$V_{CE(sat)}$	-	1.0	V
	GROUP G							
5.3.2.11	Re-test after 28 days holding period			100%				
8	Inoperatives		0.5					
5.D.3.2	Saturation voltage (1)	As in Group B	2.0		$V_{CE(sat)}$	-	1.0	V

NOTES

1. Samples used for life tests will be accepted for delivery if they pass the Group B requirements.
2. Alternatively the life test may be performed at any temperature in the range 25°C to 130°C as given by the derating curve on page 2.

DERATING CURVE FOR TRANSISTOR ON HEAT SINK