VALVE ELECTRONIC CV2389

GENERAL POST OFFICE: E-IN-C (S)

Specification: G.P.O./CV 2389/Issue 3 Dated: 1st July, 1957 To be read in conjunction with K 1001	SECURITY	
	Specification	Valve
	Unclassified	Unclassified

→ indicates a change

TYPE OF VALVE:- Germanium Junction Transistor, PNP Alloy Type.

PROTOTYPES CXT, P.O. No. 2

RATINGS			Note
Abs. Max. Collector dissipation at 50°C ambient	mW.	37.5	
Max. operating junction temperature	°C	65	
Max. storage temperature	°C	55	
Thermal resistance	°C/mW	0.4	A
Max. mean collector current	mA	10	
Max. mean emitter current	mA	10	
Max. peak collector to base voltage (Vcb)	V	10	
Max. mean (Vcb)	V	5	B
Max. peak collector to emitter voltage (Vce)	V	10	
Max. mean (Vce)	V	5	B
Average Noise Factor	db	12	C

MARKING
CV 2389
and, if possible - the Factory Code and Date Code - see K1001/4.
The Collector lead shall be indicated by a white spot on the body adjacent to the lead.
The emitter and base leads shall be indicated by spacing in an approved manner as shown on Page 4.

Dimensions (mm)

Dimension	Min.	Max.
Diameter	-	7
Length of body	-	16
Lead diameter	0.34	0.48
Lead length	30	-

BODY

The Body shall be insulated from all leads or alternatively shall be covered with an approved insulating sleeve.

NOTES

A:- Freely suspended in still air at normal pressure.

B:- These are for guidance in linear applications with inductive loads.

C:- Measured in a common emitter circuit with Vce = - 2V and Ic = - 0.5 mA.
Source impedance 500 ohms
Load impednace 2500 ohms to 10K
Frequency 1000 cps
Temperature 25°C

MOUNTING POSITION
Any

PACKAGING

K 1005
Individual container; Carton Group A. OR packaging shall be in accordance with K 1005, Section 8 except that protection against R.F.fields is not necessary.

To be performed in addition to those applicable in K1001.
The transistors are to be subjected to the Dry Heat Conditioning of Test (a) before being tested to the remainder of the Test Schedule.

	Test	Test Conditions	AQL %	Insp. Level	Sym bol	Limits Min.	Limits Max.	Unit
(a)	Dry Heat Conditioning	Six cycles of dry heat in accordance with BS 2011 clause 4.7 except that the humidity requirement is optional.		100%				
(b)	Glass Strain Test and Damp Heat	K1001 clause 7.1 except that water at a temperature of 14-17°C shall be used instead of ice-cold water. The same sample shall then undergo six cycles to BS 2011 clause 4.7 (including the humidity requirements)		100% or S (K1001 6.2 and 6.1)				
	Post Conditioning Tests	Test (e) Test (f) Test (g)						
(c)	Lead Fragility	Transistors used for this test shall have undergone the damp heat conditioning of Test (b) above once. K1001 / 5.12 except that the weight shall be 8 oz.	6.5	IA				
(d)	Soldering	Transistors used for this test shall have undergone the damp heat Conditioning of Test (b) above once. The Test is to be in accordance with BS 2011, clause 4.4 and is to be carried out between 6mm and 30mm from the body of the transistor. A thermal sink is to be used between the body of the transistor and the point of soldering.	6.5	IA				

See Notes 1 to 4 on Page 4.

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	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits Min.	Limits Max.	Unit
(e)	Collector-Base Cut-off current	Vcb = - 4.5V Ie = 0		100%	Icbo		10	µA
(f)	Collector-emitter cut-off current	Vce = - 10V Ib = 0		100%	Iceo		0.5	mA
(g)	Common emitter current gain	Vce = - 2V Ic = - 1mA d.c. and not greater than 0.25mA r.m.s. a.c. Frequency not greater than 1000 c/s.		100%	hfe (∝cb)	30	70	
(h)	Collector-emitter Voltage	Ib = - 0.5 mA Ic = - 10 mA	2.5	I	Vce		0.25	V
(j)	Base-emitter Voltage	Ib = - 0.5 mA Vce = - 1V	2.5	I	Vbe		0.5	V
(k)	Noise Factor	Common emitter circuit Vce = - 2V. Ic = - 0.5mA. Source impedance 500 ohms Load impedance 2500 ohms to 10K. Frequency 1000c/s	6.5	I	N		18	db
(m)	Common-base Cut-off frequency	Vcb = - 2V. Ic = - 1 mA dc (See Note 3).	2.5	I	f∝	350		kc/s
(n)	Illumination effect. Change in Collector - Base Cut-off Current.	As in test e. 100W clear tungsten lamp at a distance of 18" from the transistor under test in any direction.	2.5	I	Δ Icbo		1	µA

NOTES

1. The sign convention for all currents is positive into the named electrode and for voltages is positive on the first electrode named.
2. All Test limits refer to an ambient temperature of 25°C (BS 2725:1956). Correction factors for other temperatures are to be agreed with the Inspection Authorities.
3. The fx is the frequency at which the current gain in the common base configuration drops to .707 of its value at 1000 c/s.
4. The Test limits denote Magnitude without regard to sign.

LEAD DISPOSITION

(as viewed from the wired end)

Fig. 1

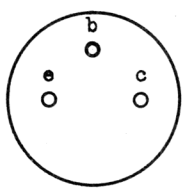
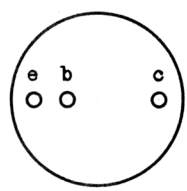


Fig. 2



Where an anticlockwise connexions of leads (i.e. Fig 3) is used the Transistors shall be marked CVX ....

Fig. 3