

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	
	<u>Specification</u> Unclassified	<u>Valve</u> Unclassified

→ indicates a change

<u>TYPE OF VALVE</u> :- Germanium Junction Transistor, PNP Alloy Type.		<u>MARKING</u> 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.		
<u>PROTOTYPES</u> CXT, P.O. No. 2		<u>Dimensions (mm)</u>				
<u>RATINGS</u>			Note	Dimension Min. Max.		
Abs. Max. Collector dissipation at 50°C ambient	mW.	37.5		Diameter	-	7
Max. operating junction temperature	°C	65		Length of body	-	16
Max. storage temperature	°C	55		Lead diameter	0.34	0.48
Thermal resistance	°C/mW	0.4	A	Lead length	30	-
Max. mean collector current	mA	10		<u>BODY</u>		
Max. mean emitter current	mA	10		The Body shall be insulated from all leads or alternatively shall be covered with an approved insulating sleeve.		
Max. peak collector to base voltage (V _{cb})	V	10		<u>MOUNTING POSITION</u> ARY		
Max. mean (V _{cb})	V	5	B			
Max. peak collector to emitter voltage (V _{ce})	V	10	B			
Max. mean (V _{ce})	V	5	B	<u>PACKAGING</u>		
Average Noise Factor	db	12	C			
<u>NOTES</u>				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.		
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 V _{ce} = - 2V and I _c = - 0.5 mA. Source impedance 500 ohms Load impedance 2500 ohms to 10K Frequency 1000 cps Temperature 25°C						

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		Unit
						Min.	Max.	
(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 Post Conditioning Tests	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) Test (e) Test (f) Test (g)		100% or S (K1001 6.2 and 6.1)				
(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				

	Test	Test Conditions	AQL %	Insp. Level	Symbol	Limits		Unit
						Min.	Max.	
(e)	Collector-Base Cut-off current	$V_{cb} = -4.5V$ $I_e = 0$		100%	I_{cbo}		10	μA
(f)	Collector-emitter out-off current	$V_{ce} = -10V$ $I_b = 0$		100%	I_{ceo}		0.5	mA
(g)	Common emitter current gain	$V_{ce} = -2V$ $I_c = -1mA$ d.c. and not greater than 0.25mA r.m.s. a.c. Frequency not greater than 1000 c/s.		100%	h_{fe} (α_{cb})	30	70	
(h)	Collector-emitter Voltage	$I_b = -0.5 mA$ $I_c = -10 mA$	2.5	I	V_{ce}		0.25	V
(j)	Base-emitter Voltage	$I_b = -0.5 mA$ $V_{ce} = -1V$	2.5	I	V_{be}		0.5	V
(k)	Noise Factor	Common emitter circuit $V_{ce} = -2V$, $I_c = -0.5mA$. 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	$V_{cb} = -2V$, $I_c = -1 mA$ dc (See Note 3).	2.5	I	$f_{c\alpha}$	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	ΔI_{cbo}		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 f_x 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

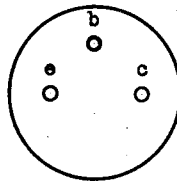
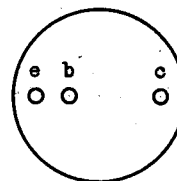


Fig. 2



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

Fig. 3

