GUNN EFFECT DEVICES

CXY11A
CXY11B
CXY11C

TENTATIVE DATA

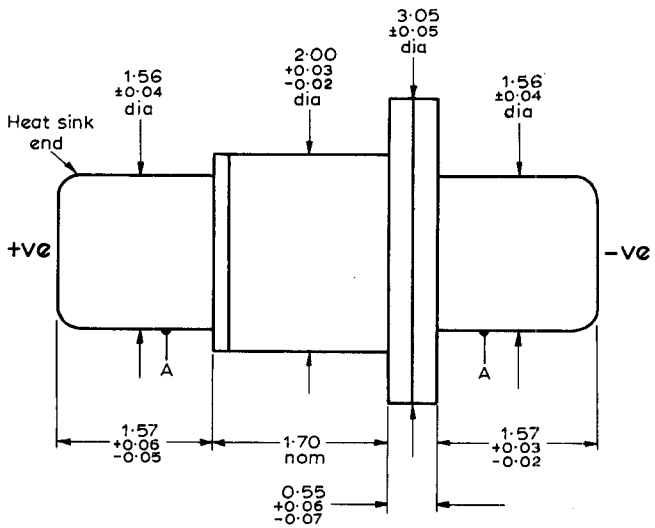
Gallium arsenide bulk effect devices employing the Gunn effect to produce CW oscillations at microwave frequencies. Each device is encapsulated in a varactor type pill package suitable for mounting in various types of cavity. The devices will oscillate throughout X-band, the actual frequency depending on the cavity used.

QUICK REFERENCE DATA			
Operating voltage (typ.)		7.0	V
P_{tot} max. (T_{pin} = 35 °C)		1.0	W
Operating frequency		8.0 to 12	GHz
P_{out} min.	CXY11A	5.0	mW
	CXY11B	10	mW
	CXY11C	15	mW

Unless otherwise stated, data is applicable to all types

OUTLINE DRAWING

B8665



A = concentricity tolerance = ±0.13

All dimensions in mm

RATINGS (ABSOLUTE MAXIMUM SYSTEM)

V max. (see note 1)	7.0	V
P_{tot} max. ($T_{pin} = 35^{o}C$)	1.0	W

Temperature

T_{stg} max.	175	^{o}C

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{o}C$)

		Min.	Typ.	Max.	
I_{dc} (at V = 7.0V, see note 1)		-	140	-	mA
Frequency (see note 2)		8.0	-	12	GHz
P_{out} (see note 3)	CXY11A	5.0	8.0	-	mW
	CXY11B	10	12	-	mW
	CXY11C	15	20	-	mW

OPERATING NOTES

1. Bias must be applied in such a way that the flanged end of the device is always negative. Reversing polarity may cause permanent damage. The V max. rating may be increased provided that the P_{tot} rating is not exceeded. In any event care should be taken to protect the device from transients in excess of 8 volts.
2. The frequency is governed by the choice of cavity to which the device is coupled.
3. The output power is normally measured in a coaxial cavity at a frequency of 9.5GHz. Other centre frequencies may be supplied at 8.5, 10.5 and 11.5GHz by suffixing the type number e.g. CXY11B/10.5 specifies a diode giving 10mW min. at 10.5GHz. See the table below.
   Diodes with these other centre frequencies will not necessarily oscillate over the whole 8 to 12GHz range.
4. It is important to have a good thermal contact between the pin and the cavity.

Minimum output power (mW)	Test Frequency (GHz)			
	8.5	9.5	10.5	11.5
5	CXY11A/8.5	CXY11A	CXY11A/10.5	CXY11A/11.5
10	CXY11B/8.5	CXY11B	CXY11B/10.5	CXY11B/11.5
15	CXY11C/8.5	CXY11C	CXY11C/10.5	CXY11C/11.5

Complete oscillators using these devices are obtainable from Mullard Ltd.