

# Silicon - Diode

## **BB122**

2.45 - 20pF

Varactor - Diode

# DATASHEET

OEM – Fairchild

Source: Fairchild Databook 1978

## BB121A • BB121B • BB122

### UHF, VHF / FM VARACTOR DIODES

DIFFUSED SILICON PLANAR

- $C_3/C_{25}$  ... 4.5–6.0
- MATCHED SETS (Note 2)

#### ABSOLUTE MAXIMUM RATINGS (Note 1)

##### Temperatures

Storage Temperature Range

–55°C to +150°C

Maximum Junction Operating Temperature

+150°C

Lead Temperature

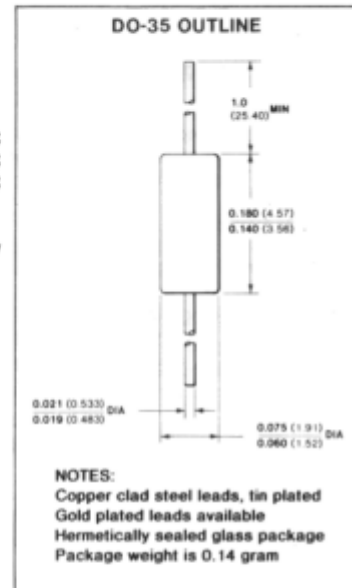
+260°C

##### Maximum Voltage

WIV

Working Inverse Voltage

30 V



#### ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS		
BV	Breakdown Voltage	30			V	$I_R = 100 \mu\text{A}$		
$I_R$	Reverse Current		10	50	nA	$V_R = 28 \text{ V}$		
C	Capacitance	BB 121A	17			pF	$V_R = 1.0 \text{ V}, f = 1 \text{ MHz}$	
			11			pF	$V_R = 3.0 \text{ V}, f = 1 \text{ MHz}$	
			2.00	2.20	2.35	pF	$V_R = 25 \text{ V}, f = 1 \text{ MHz}$	
			BB 121B	18			pF	$V_R = 1.0 \text{ V}, f = 1 \text{ MHz}$
				12			pF	$V_R = 3.0 \text{ V}, f = 1 \text{ MHz}$
				2.25	2.45	2.65	pF	$V_R = 25 \text{ V}, f = 1 \text{ MHz}$
BB 122	20			pF	$V_R = 1.0 \text{ V}, f = 1 \text{ MHz}$			
	13			pF	$V_R = 3.0 \text{ V}, f = 1 \text{ MHz}$			
	2.10	2.45	2.80	pF	$V_R = 25 \text{ V}, f = 1 \text{ MHz}$			
$C_3/C_{25}$	Capacitance Ratio	4.5	5.2	6.0		$V_R = 3 \text{ V}/25 \text{ V}, f = 1 \text{ MHz}$		
$R_S$	Series Resistance	BB 121A/B	0.6	0.8		$\Omega$	$C = 9 \text{ pF}, f = 470 \text{ MHz}$	
			0.9	1.2		$\Omega$	$C = 9 \text{ pF}, f = 470 \text{ MHz}$	
$f_o$	Series Resonant Frequency	BB 121A/B	2.0			GHz	$V_R = 25 \text{ V}$	
			1.8			GHz	$V_R = 25 \text{ V}$	
$L_S$	Series Inductance		2.5		nH	1.5 mm from case		

#### NOTES:

- These ratings are limiting values above which the serviceability of the diode may be impaired.
- The capacitance difference between any two diodes in one set is less than 3% for the BB 121A and BB 121B and less than 6% for the BB 122 over the reverse voltage range of 0.5 V to 28 V.
- For product family characteristic curves, refer to Chapter 4, D11.