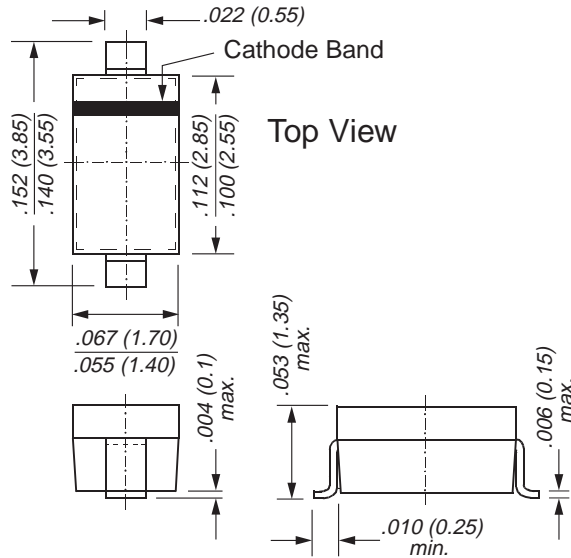


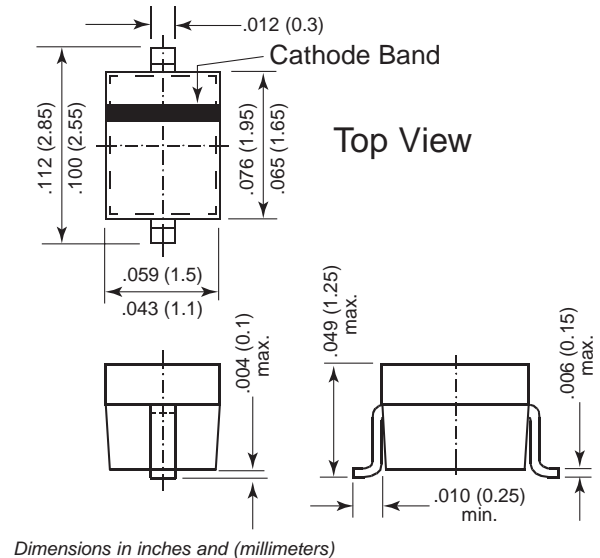


**Tuner Diodes**

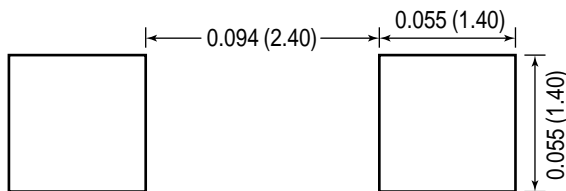
**SOD-123 (BB721)**



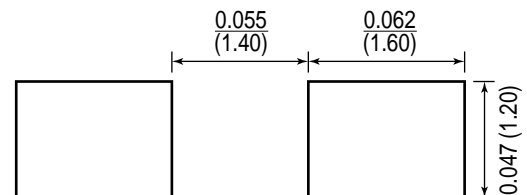
**SOD-323 (BB721S)**



**Mounting Pad Layout SOD-123 (BB721)**



**Mounting Pad Layout SOD-323 (BB721S)**



**Features**

- Silicon epitaxial planar capacitance diodes with very wide effective capacitance variation for tuning the whole range of UHF television bands.
- Two BB721/BB721S tuner diodes in series are used for direct satellite receivers.
- These diodes are available as singles or as matched sets of two or more units according to the tracking condition described in the table of characteristics.

**Mechanical Data**

**Case:** BB721 = SOD-123 Plastic Case  
BB721S = SOD-323 Plastic Case

**Weight:** BB721 = approx. 0.01g  
BB721S = approx. 0.004g

**Packaging Codes/Options:**

- SOD-123: D3/10K per 13" reel (8mm tape), 30K/box  
D4/3K per 7" reel (8mm tape), 30K/box
- SOD-323: D5/10K per 13" reel (8mm tape), 30K/box  
D6/3K per 7" reel (8mm tape), 30K/box

**Maximum Ratings and Thermal Characteristics** ( $T_c = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Reverse Voltage	$V_R$	32	V
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Storage Temperature Range	$T_S$	-55 to +125	$^\circ\text{C}$

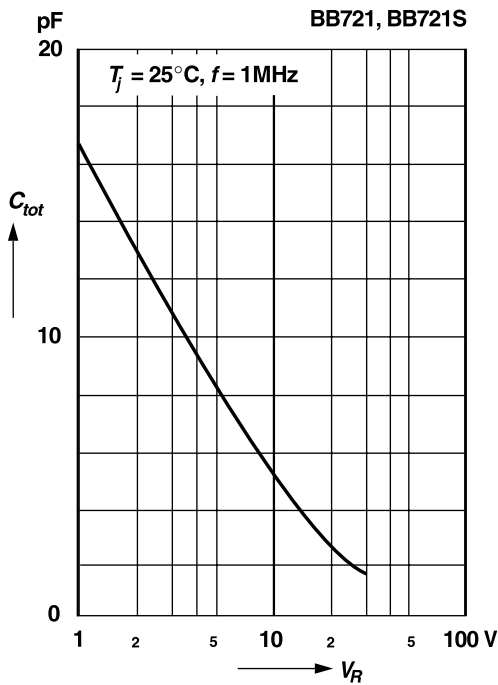
**Electrical Characteristics** (T<sub>c</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage at I <sub>R</sub> = 100μA	V <sub>(BR)R</sub>	32	–	–	V
Leakage Current at V <sub>R</sub> = 30V	I <sub>R</sub>	–	–	10	nA
Capacitance f = 1MHz at V <sub>R</sub> = 28V at V <sub>R</sub> = 25V at V <sub>R</sub> = 2V	C <sub>tot</sub>	1.9 2.1 14.01	–	2.29 2.39 16.33	pF
Effective Capacitance Ratio f = 1MHz at V <sub>R</sub> = 1 to 28V	$\frac{C_{tot}(1V)}{C_{tot}(28V)}$	8	–	–	–
at V <sub>R</sub> = 2 to 25V	$\frac{C_{tot}(2V)}{C_{tot}(25V)}$	5.86	–	7.78	–
Series Resistance at f = 470 MHz, C <sub>tot</sub> = 14 pF	r <sub>s</sub>	–	–	0.8	Ω
Series Inductance	L <sub>s</sub>	–	2.5	–	nH

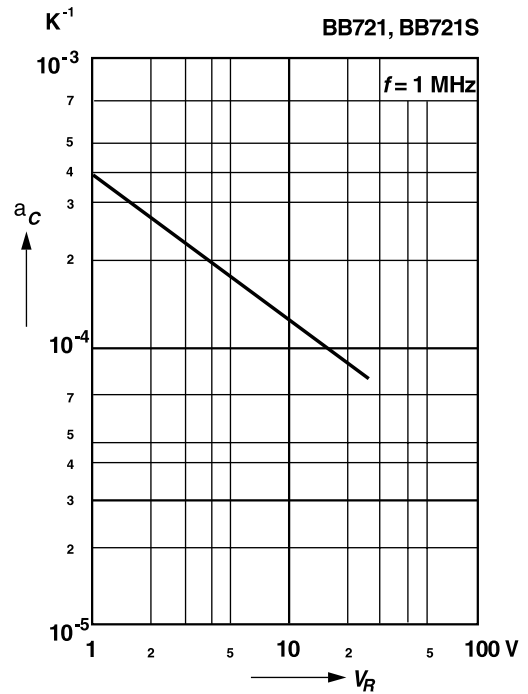
For any two of six consecutive diodes in the carrier tape, the maximum capacitance deviation in the reverse bias voltage of V<sub>R</sub> = 0.5 to 28V is 3%

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

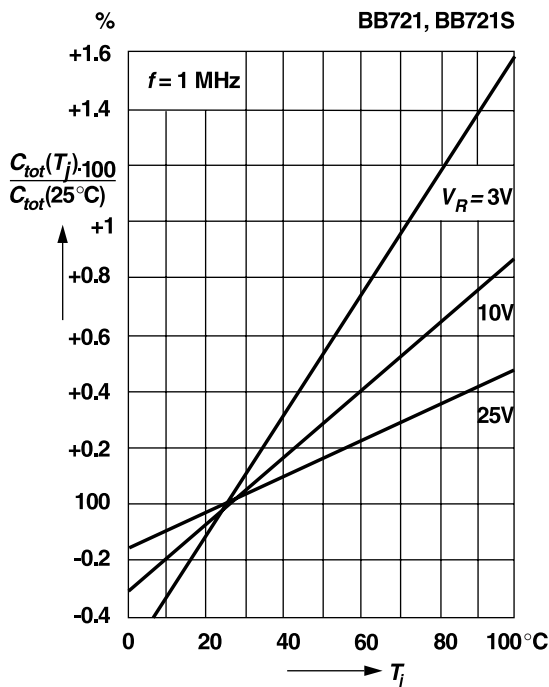
**Capacitance versus reverse voltage**



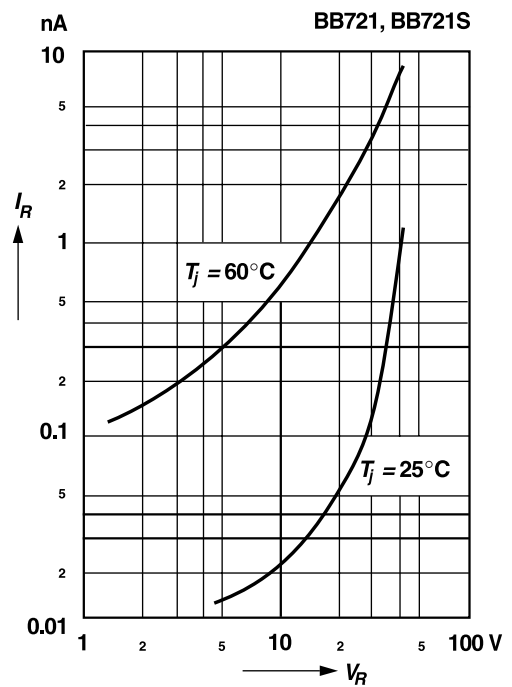
**Temperature coefficient of capacitance versus reverse voltage**



**Relative capacitance versus junction temperature**



**Leakage current versus reverse voltage**



# BB721 and BB721S

Vishay Semiconductors  
formerly General Semiconductor



## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

### Q-Factor versus frequency

