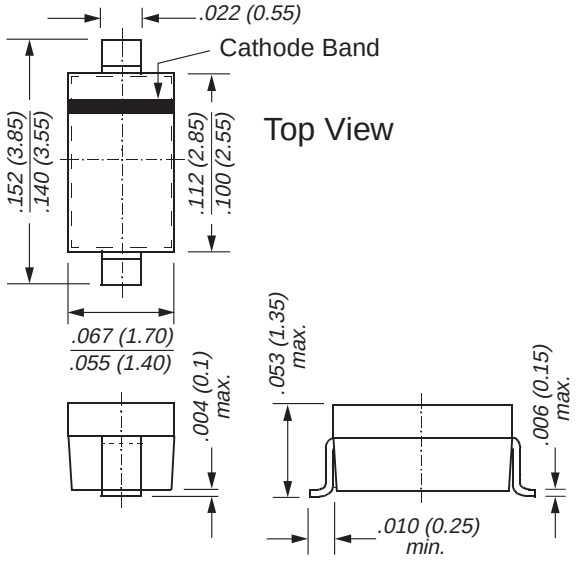
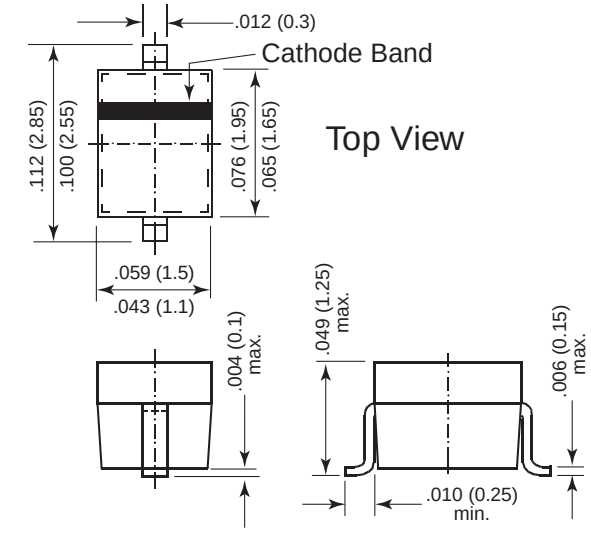
Tuner Diodes

SOD-123 (BB721)

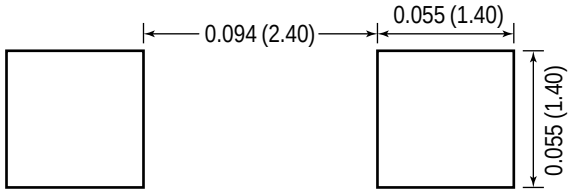


SOD-323 (BB721S)

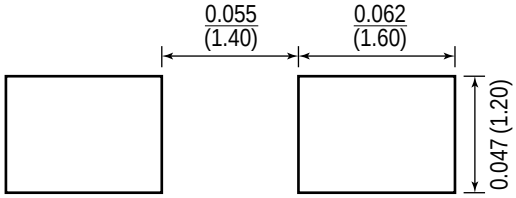


Dimensions in inches and (millimeters)

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 (TC = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	32	V
Junction Temperature	T_J	125	°C
Storage Temperature Range	T_S	–55 to +125	°C

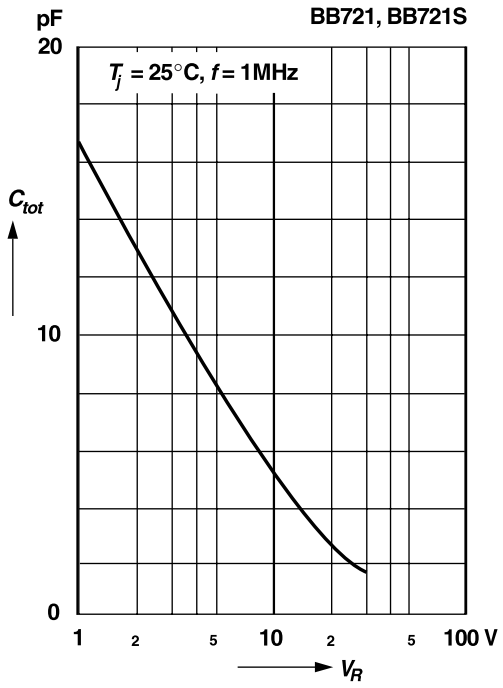
Electrical Characteristics (T_C = 25°C unless otherwise noted)

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

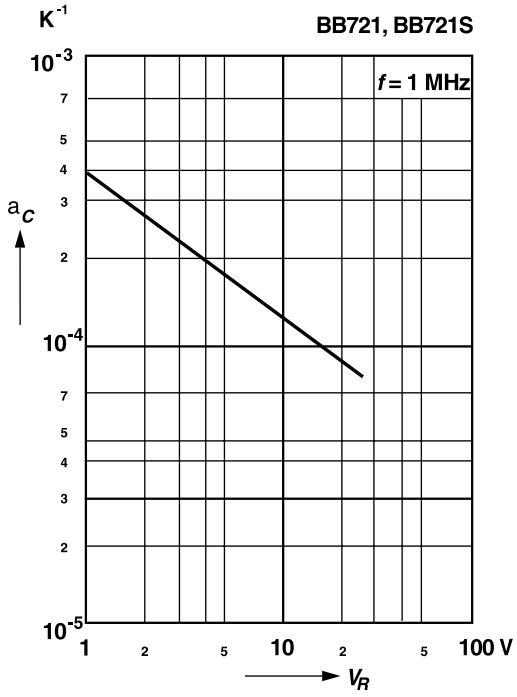
For any two of six consecutive diodes in the carrier tape, the maximum capacitance deviation in the reverse bias voltage of VR = 0.5 to 28V is 3%

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

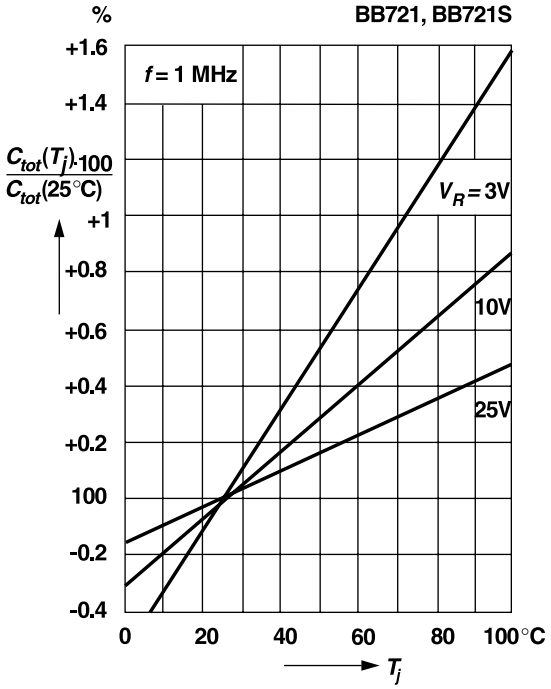
Capacitance versus reverse voltage



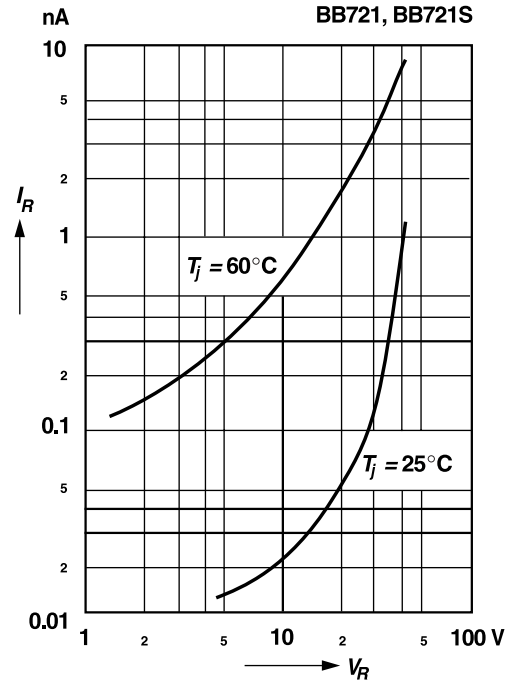
Temperature coefficient of capacitance versus reverse voltage



Relative capacitance versus junction temperature



Leakage current versus reverse voltage



Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Q-Factor versus frequency