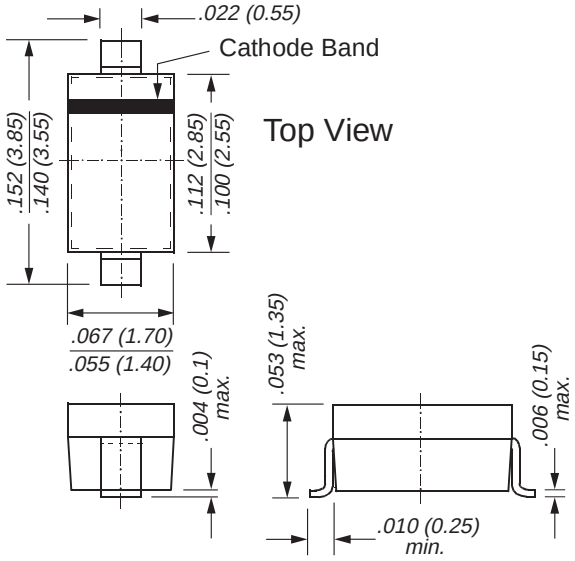
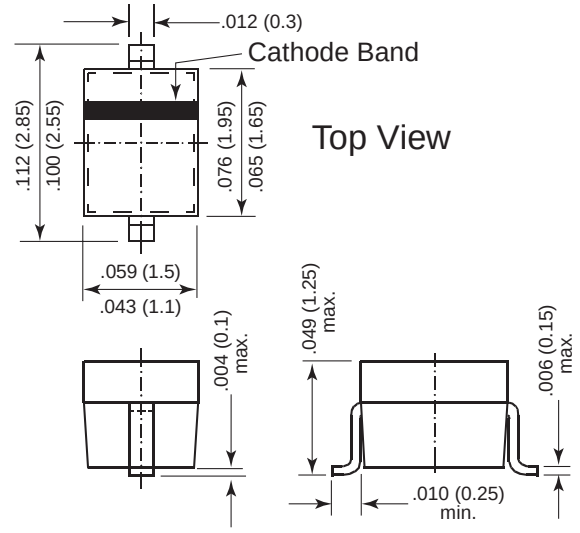
Tuner Diodes

SOD-123 (BB731)

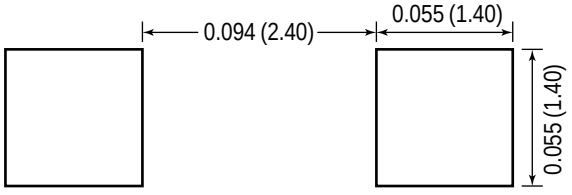


SOD-323 (BB731S)

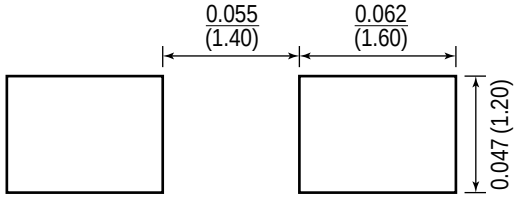


Dimensions in inches and (millimeters)

Mounting Pad Layout SOD-123 (BB731)



Mounting Pad Layout SOD-323 (BB731S)



Features

- Silicon epitaxial planar capacitance diodes with very wide effective capacitance variation for tuning the VHF range 41 ... 170 MHz in hyperband television tuners.
- 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: BB731 = SOD-123 Plastic Case
BB731S = SOD-323 Plastic Case

Weight: BB731 = approx. 0.01g
BB731S = 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

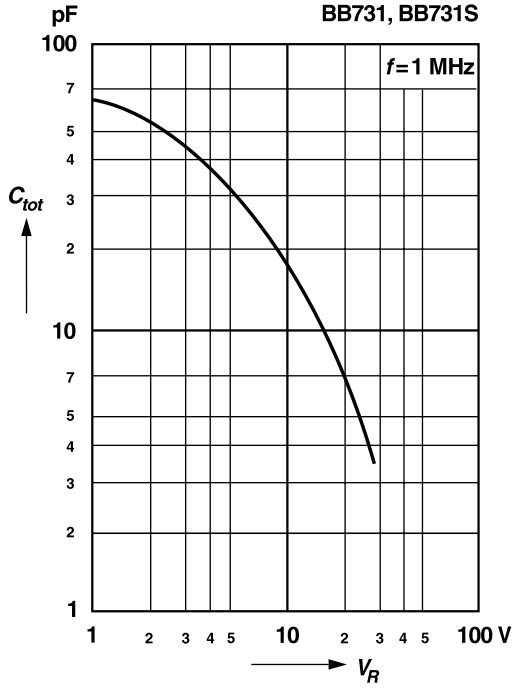
Electrical Characteristics (T_C = 25°C unless otherwise noted)

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	–	–	30	nA
Capacitance f = 1MHz at V_R = 28V at V_R = 25V at V_R = 1V	C_{tot}	 3.15 – –	 – 3.5 50	 3.55 – –	pF
Effective Capacitance Ratio f = 1MHz at V_R = 1 to 28V	$\frac{C_{tot}\ (1V)}{C_{tot}\ (28V)}$	19.5	–	25	–
at V_R = 3 to 25V	$\frac{C_{tot}\ (3V)}{C_{tot}\ (25V)}$	–	14	–	–
Series Resistance at f = 300 MHz, C_{tot} = 25 pF	r_s	–	0.9	1.0	Ω
Series Inductance	L_S	–	2.5	–	nH

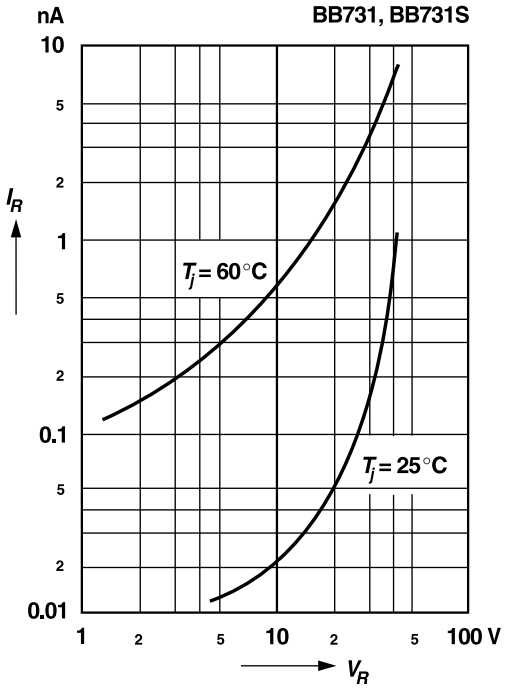
For any two of six consecutive diodes in the carrier tape, the maximum capacitance deviation in the reverse bias voltage of VR = 0.5 to 28V is 3%

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

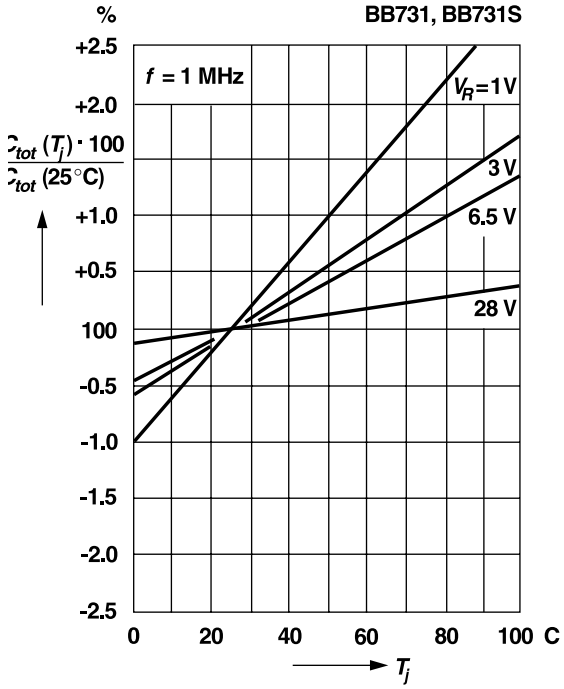
Capacitance versus reverse voltage



Leakage current versus reverse voltage



Relative capacitance versus junction temperature



Q-Factor versus frequency