

Hyperabrupt Junction Tuning Varactor



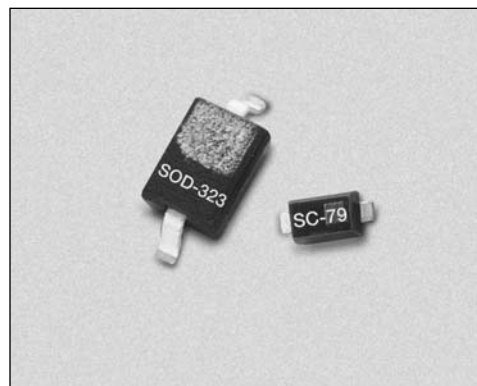
SMV1130 Series

Features

- High Tuning Ratio
- Low Series Resistance
- SOD-323 and SC-79 Packages
- Designed for High Volume, Low Cost Applications
- Available in Tape and Reel Packaging

Description

The SMV1130-011 and SMV1130-079 are surface mount varactor diodes in the SOD-323 and SC-79 plastic packages. They are designed for very high capacitance tuning ratio while having low series resistance, which makes these devices especially attractive for wideband VCO applications.



Absolute Maximum Ratings

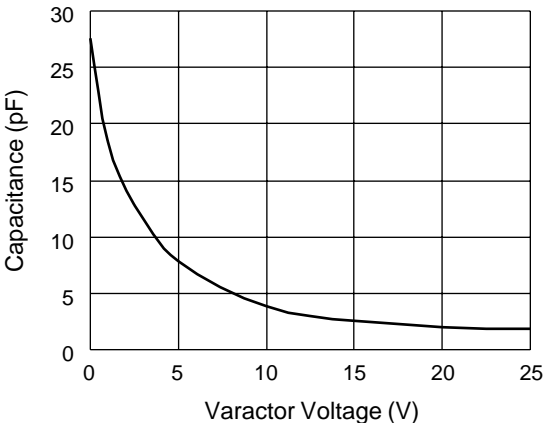
Characteristic	Value
Reverse Voltage (V_R)	26 V
Forward Current (I_F)	20 mA
Power Dissipation (P_D)	250 mW
Storage Temperature (T_{ST})	-55°C to +150°C
Operating Temperature (T_{OP})	-55°C to +125°C

Electrical Specifications at 25°C

Parameter	Condition	Min.	Typ.	Max.	Unit
Reverse Current (I_R)	$V_R = 21\text{ V}$			20.00	nA
Capacitance (C_T)	$C_T @ 1\text{ V}, V_R = 1\text{ V}, F = 1\text{ MHz}$	17.40		21.20	pF
Capacitance Ratio (C_{TR})	$C_T (1\text{ V})/C_T (3\text{ V})$	1.47		1.76	
Capacitance Ratio (C_{TR})	$C_T (1\text{ V})/C_T (9\text{ V})$	3.70		4.50	
Series Resistance (R_S)	$V_R = 1\text{ V}, F = 500\text{ MHz}$			0.80	Ω
Breakdown Voltage (V_{BR})	$I_R = 10\text{ }\mu\text{A}$	26.00			V

Single	Single
SOD-323	SC-79
SMV1130-011	SMV1130-079
$L_S = 1.5\text{ nH}$	$L_S = 0.7\text{ nH}$

Typical Performance Data

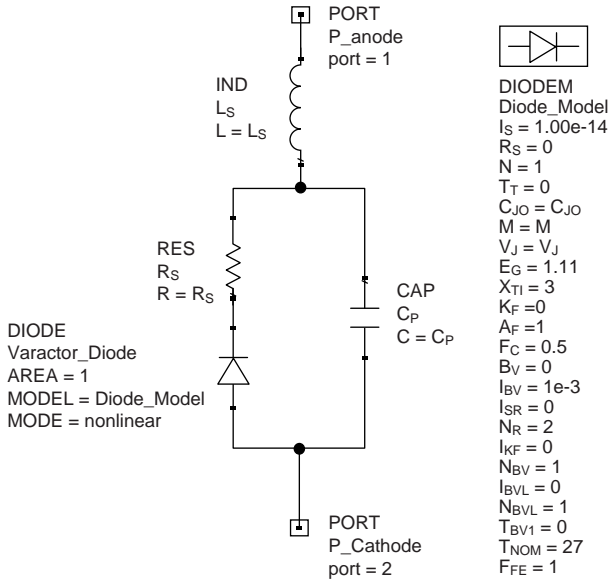


Capacitance vs. Voltage

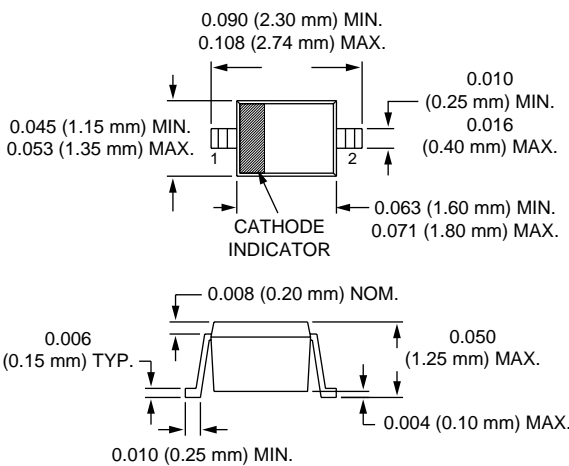
Capacitance vs. Voltage

V_R (V)	C_T (pF)
0	27.6
1.0	18.5
2.5	12.8
5.0	7.9
10.0	3.8
15.0	2.6
20.0	2.0
25.0	1.8

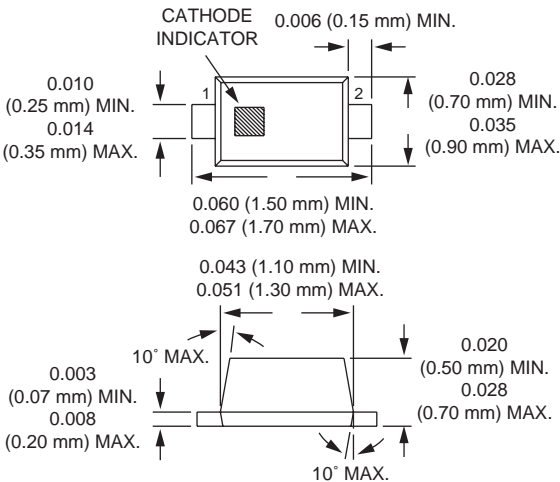
SPICE Model



SOD-323



SC-79



Part Number	Cj0 (pF)	Vj (V)	M	Cp (pF)	Rs (Ω)	Ls (nH)
SMV1130-011	25.8	10.0	3.7	1.8	0.8	1.5
SMV1130-079	25.8	10.0	3.7	1.8	0.8	0.7