

# Hyperabrupt Junction Tuning Varactor



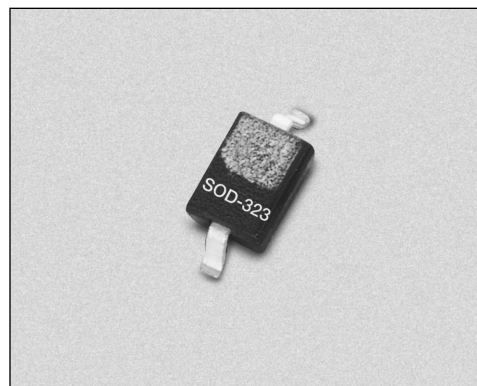
SMV1281-011

## Features

- High Tuning Ratio
- SOD-323 Package
- Designed for High Volume, Low Cost Applications
- Available in Tape and Reel Packaging

## Description

The SMV1281-011 is a surface mount varactor diode in the SOD-323 plastic package. It is designed for very high capacitance tuning ratio while having low series resistance, which makes this device especially attractive for wideband VCO applications.



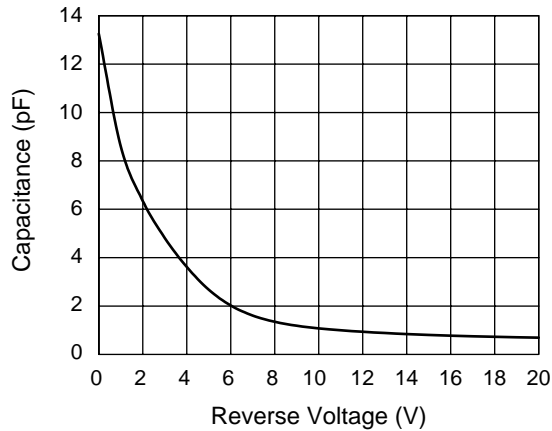
## Absolute Maximum Ratings

Characteristic	Value
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 ( $I_R$ )	$V_R = 20\text{ V}$			20.0	nA
Capacitance ( $C_T$ )	1 V	7.8	8.6	9.5	pF
Capacitance ( $C_T$ )	20 V	0.6	0.7	0.8	pF
Capacitance Ratio ( $C_{TR}$ )	1 V/20 V		12.0		
Series Resistance ( $R_S$ )	$V_R = 1\text{ V}$ , $F = 500\text{ MHz}$		1.7		$\Omega$
Breakdown Voltage ( $V_{BR}$ )	$I_R = 10\ \mu\text{A}$	24.0			V

Typical Performance Data

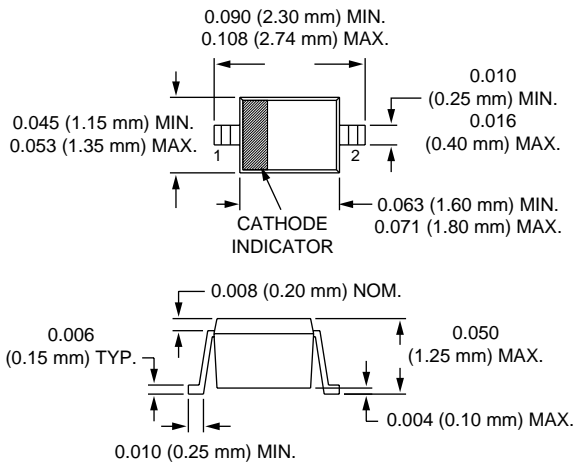


Capacitance vs. Reverse Voltage

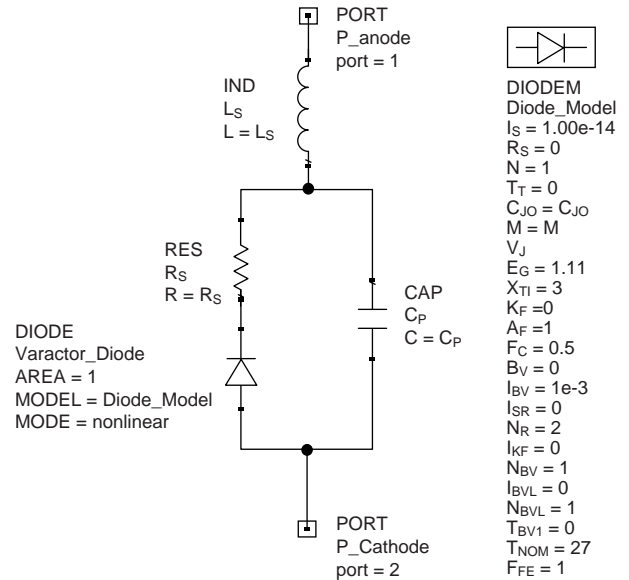
Capacitance vs. Reverse Voltage

$V_R$ (V)	$C_T$ (pF)
0	13.30
1	8.60
2	6.30
3	4.80
4	3.60
5	2.70
6	2.00
7	1.60
8	1.40
9	1.20
10	1.10
11	1.00
12	0.94
13	0.89
14	0.85
15	0.81
16	0.78
17	0.75
18	0.73
19	0.71
20	0.69

SOD-323



SPICE Model



Part Number	$C_{J0}$ (pF)	$V_J$ (V)	M	$C_p$ (pF)	$R_s$ ( $\Omega$ )	$L_s$ (nH)
SMV1281-011	13	14	6	0.62	1.7	1.2