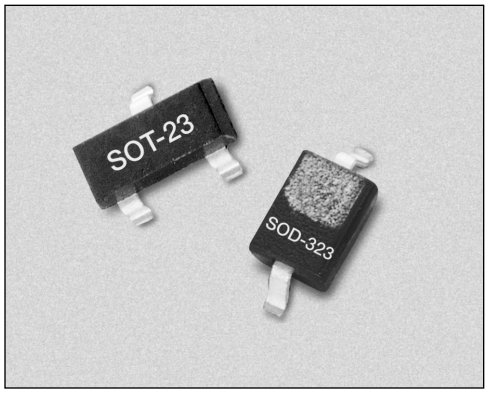
Hyperabrupt Junction Tuning Varactor

Alpha

SMV1135 Series

Features

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



Description

The SMV1135-011 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.

	
Single	Common Cathode
SOD-323	SOT-23
SMV1135-011	**SMV1135-004**

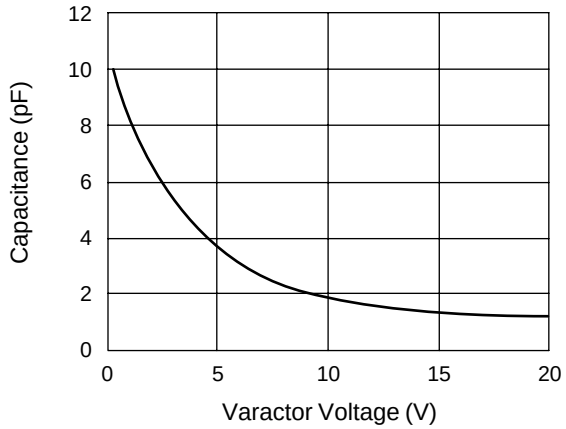
Absolute Maximum Ratings

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

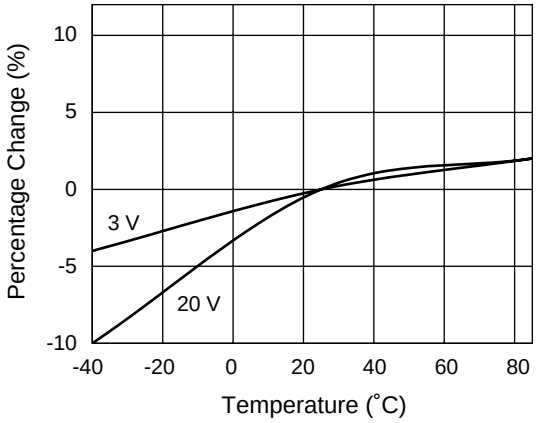
Electrical Specifications at 25°C

Parameter	Condition	Min.	Typ.	Max.	Unit
Reverse Current (I_R)	V_R = 21 V			20.00	nA
Capacitance (C_T)	C_T @ 1 V, V_R = 1 V, F = 1 MHz	8.20		10.00	pF
Capacitance Ratio (C_{TR})	C_T (1 V)/C_T (3 V)	1.47		1.76	
Capacitance Ratio (C_{TR})	C_T (1 V)/C_T (9 V)	3.70		4.50	
Series Resistance (R_S)	V_R = 1 V, F = 500 MHz			1.20	Ω
Breakdown Voltage (V_{BR})	I_R = 10 µA	28.00			V

Typical Performance Data



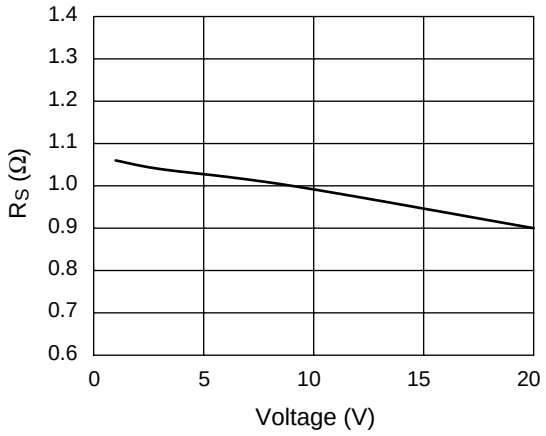
Capacitance vs. Voltage



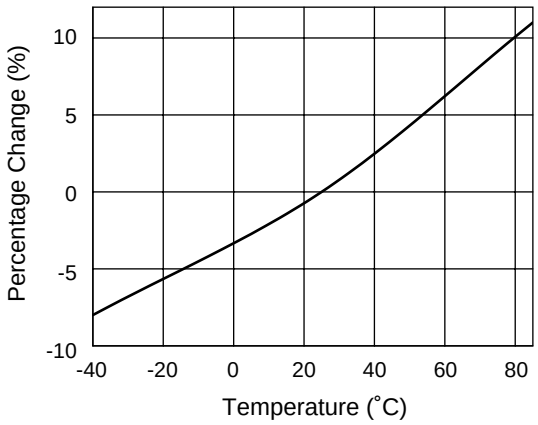
Relative Capacitance Change vs. Temperature

Capacitance vs. Voltage

V_R (V)	C_T (pF)
0.5	10.34
1.0	8.69
2.5	5.98
3.0	5.38
6.0	3.11
10.0	1.92
20.0	1.17

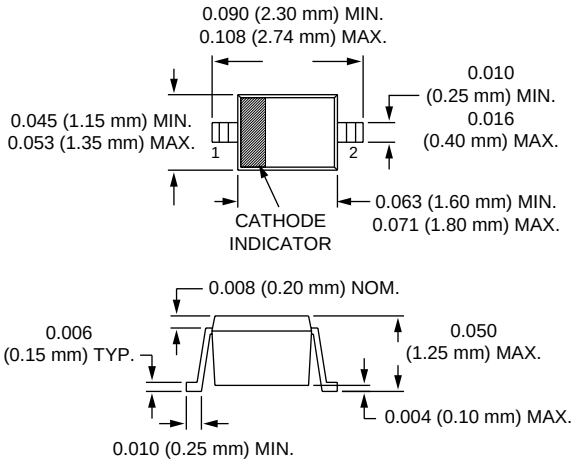


Series Resistance vs. Voltage

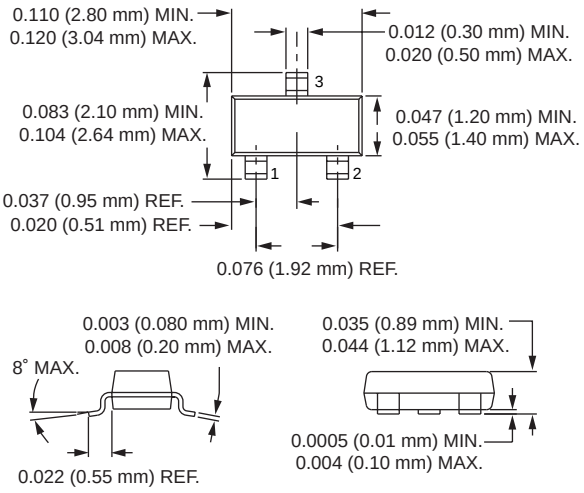


Relative Series Resistance Change vs. Temperature

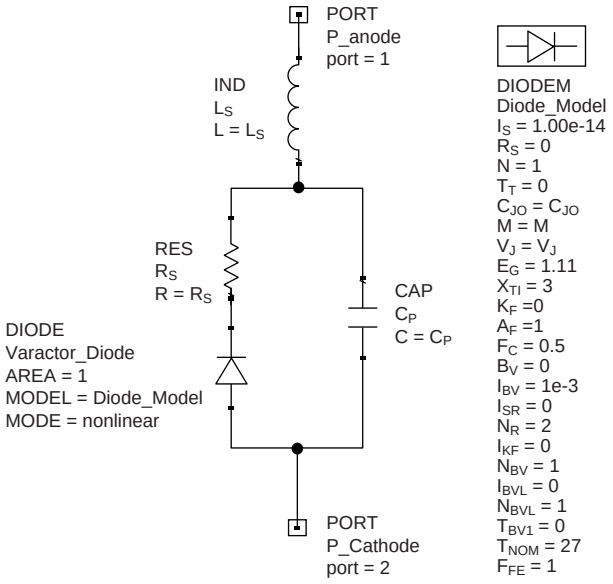
SOD-323



SOT-23



SPICE Model



Part Number	C_{J0} (pF)	V_J (V)	M	C_P (pF)	R_S (Ω)	L_S (nH)
SMV1135-011	10.3	8.6	2.9	0.8	1.2	1.5