

DATA SHEET

SMV1265-011, SMV1265-011LF: Hyperabrupt Junction Tuning Varactors

Features

- High tuning ratio
- Low series resistance
- SOD-323
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020
- Designed for high-volume, low-cost applications
- Available in tape and reel packaging



Description

The SMV1265-011 is designed for very high capacitance tuning ratio with low series resistance, which makes this device especially attractive for wideband VCO applications.

NEW

Skyworks offers lead (Pb)-free, RoHS (Restriction of Hazardous Substances)-compliant packaging.



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
ESD human body model	Class 0


Performance is guaranteed only under the conditions listed in the specifications table and is not guaranteed under the full range(s) described by the Absolute Maximum specifications. Exceeding any of the absolute maximum/minimum specifications may result in permanent damage to the device and will void the warranty.

CAUTION: Although this device is designed to be as robust as possible, ESD (Electrostatic Discharge) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without detection. Industry-standard ESD precautions must be employed at all times.

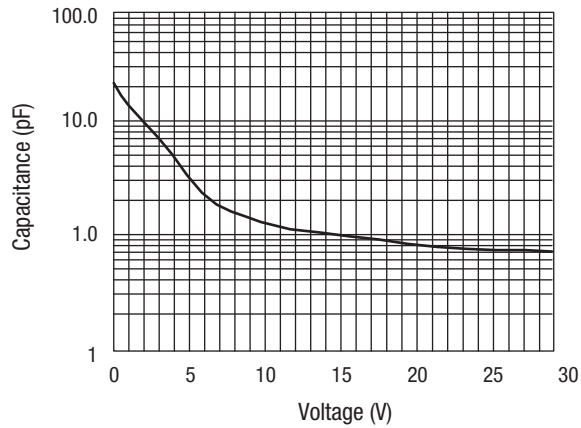
Operating Characteristics at 25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Current	I_R	$V_R = 26\text{ V}$			20	nA
Capacitance	C_{T1}	$V_R = 1\text{ V}, F = 1\text{ MHz}$	12.5	13.8	14.7	pF
Capacitance	C_{T26}	$V_R = 26\text{ V}, F = 1\text{ MHz}0.58$	0.7	0.83		pF
Capacitance Ratio	C_{T1}/C_{T26}	$C_T(1\text{ V})/C_T(26\text{ V})$	17.7	19.5		
Series Resistance	R_S	$V_R = 1\text{ V}, F = 470\text{ MHz}$		2.4		Ω
Breakdown Voltage	V_B	$I_R = 10\ \mu\text{A}$	28			V


Single
SOD-323
SMV1265-011 Marking: CM
SMV1265-011LF Marking: HM
$L_S = 1.7\text{ nH}$

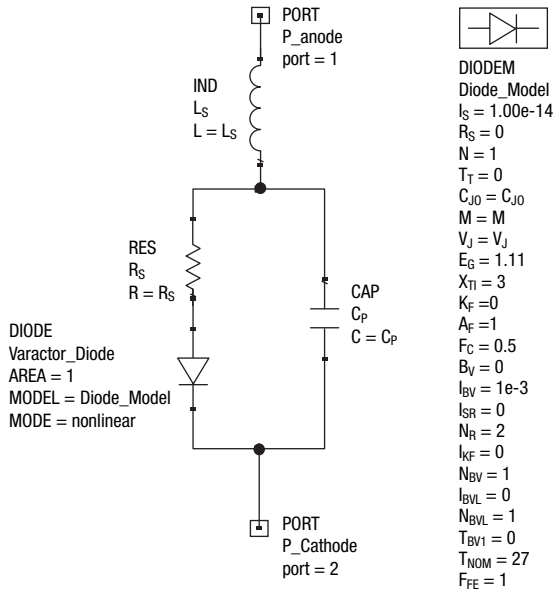
 LF denotes lead (Pb)-free, RoHS-compliant packaging option as an alternative to our standard tin/lead (Sn/Pb) packaging.

Typical Performance Data



Capacitance vs. Voltage

SPICE Model

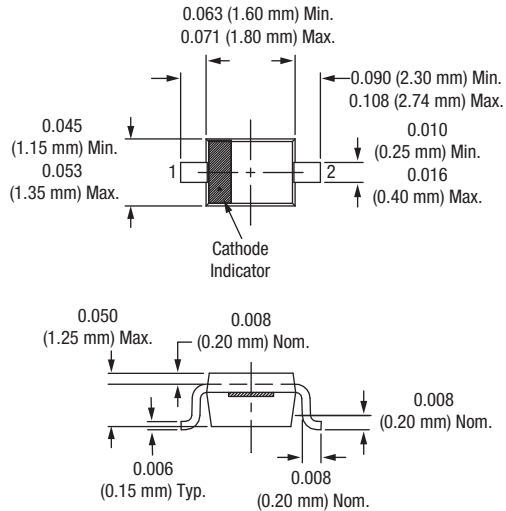


Part Number	C _{JO} (pF)	V _J (V)	M	C _P (pF)	R _S (Ω)	L _S (nH)
SMV1265	22.5	30	13	0.71	2.4	1.7

Capacitance vs. Voltage

V _R (V)	C _T (pF)
0	22.47
0.5	17.41
1	14.26
2	10.23
3	7.4
4	5.15
5	3.38
6	2.37
7	1.86
8	1.61
9	1.45
10	1.3
12	1.12
14	1.05
16	0.97
18	0.91
20	0.83
22	0.78
24	0.75
26	0.73
28	0.73
30	0.71

SOD-323



Recommended Solder Reflow Profiles

Refer to the [“Recommended Solder Reflow Profile”](#) Application Note.

Tape and Reel Information

Refer to the [“Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation”](#) Application Note.

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