

DATA SHEET

SMV1130-079: Hyperabrupt Junction Tuning Varactor

Features

- High tuning ratio
- Low series resistance
- SC-79 package
- Designed for high volume, low cost applications
- Available in tape and reel packaging



Description

The SMV1130-079 is a surface mount varactor diode in the SC-79 plastic package. This varactor is 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

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.

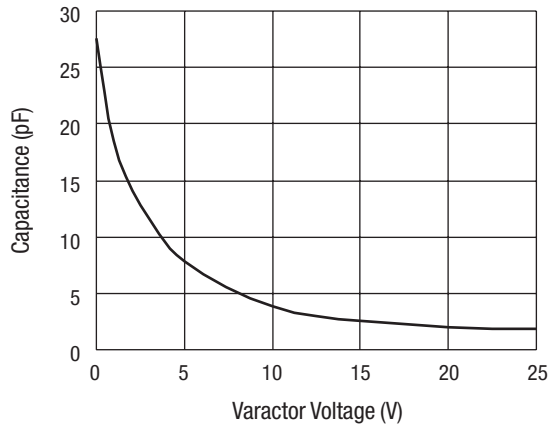
CAUTION: Although this device is designed to be as robust as possible, Electrostatic Discharge (ESD) can damage this device. This device must be protected at all times from ESD. Static charges may easily produce potentials of several kilovolts on the human body or equipment, which can discharge without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

Operating Characteristics at 25°C

Parameter	Condition	Frequency	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		17.40		21.20	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				0.80	Ω
Breakdown voltage (V_{BR})	$I_R = 10$ μ A		26.00			V


Single
Marking: Cathode
SC-79
SMV1130-079
$L_S = 0.7$ nH

Typical Performance Data

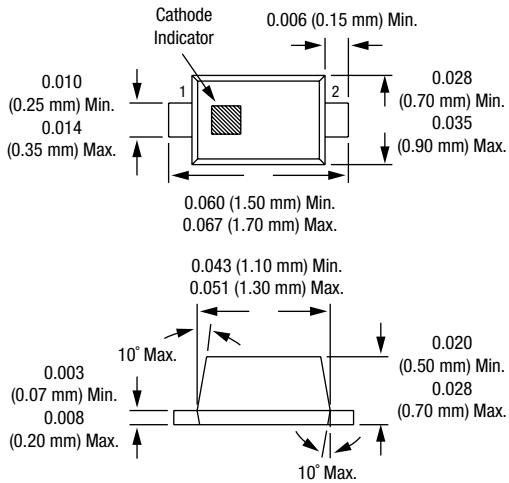


Capacitance vs. Voltage

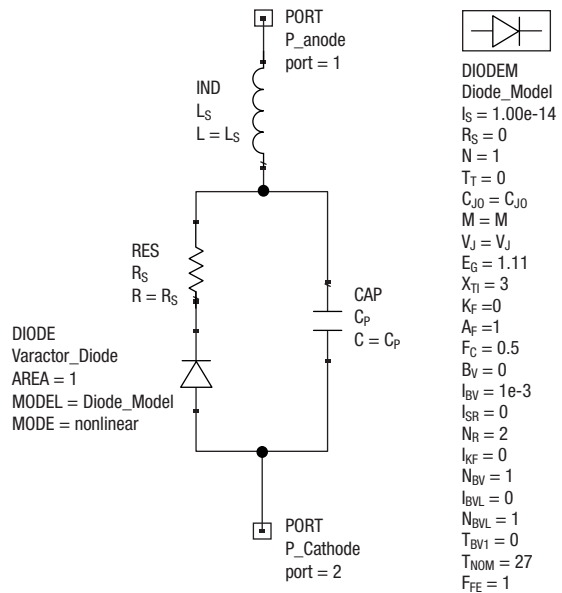
Capacitance vs. Voltage

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

SC-79



SPICE Model



Part Number	C_{J0} (pF)	V_J (V)	M	C_P (pF)	R_S (Ω)	L_S (nH)
SMV1130-079	25.8	10.0	3.7	1.8	0.8	0.7

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