

DATA SHEET

SMS3925-079, SMS3925-079LF: Low Capacitance, High-Voltage Schottky Diode

Features

- Silicon Schottky diode for detector applications
- Ultrasmall SC-79 package
- Designed for high-volume, low-cost applications
- Available in tape and reel packaging
- Available lead (Pb)-free and RoHS-compliant MSL-1 @ 260 °C per JEDEC J-STD-020


Description

The SMS3925-079 is a 40 V, 0.6 pF RF Schottky diode designed for use as a level detector in wireless handsets and for general-purpose switching applications. The SMS3925-079 is packaged in the surface mount miniature SC-79 package and is designated for low-cost, high-volume applications.

NEW

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


Absolute Maximum Ratings

Characteristic	Value
Reverse voltage (V_R)	40 V
Forward current - 1 ms pulse (I_F)	1 A
Forward current - steady state (I_F)	50 mA
Power dissipation (P_D)	250 mW
Storage temperature (T_{ST})	-65 °C to +150 °C
Operating temperature (T_{OP})	-65 °C to +150 °C
Junction temperature (T_J)	150 °C
Electrostatic Discharge (ESD) Human Body Model (HBM)	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.

Electrical Specifications at 25 °C

Parameter	Condition	Frequency	Min.	Typ.	Max.	Unit
Reverse current (I_R)	$V_R = 40\text{ V}$				10	μA
Capacitance (C_T) ⁽¹⁾	$V_R = 0\text{ V}, F = 1\text{ MHz}$			0.48	0.6	pF
Forward voltage (V_F)	$I_F = 1\text{ mA}$		0.57	0.62	0.67	V

1. Capacitance is total capacitance (C_T), junction capacitance (C_J) + package capacitance (C_P).


Single
SC-79
SMS3925-079 Marking: Cathode
SMS3925-079LF Marking: Cathode
$L_S = 0.7\text{ nH}$

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

SPICE Model Parameters

Parameter	Units	SMS3925
I_S	A	1.8E-09
R_S	Ω	5.4
N	-	1.7
TT	s	8E-11
C_{J0}	pF	0.36
M	-	0.24
E_G	eV	0.69
XTI	-	2
F_C	-	0.5
B_V	V	58
I_{BV}	A	1E-05
V_J	V	0.8

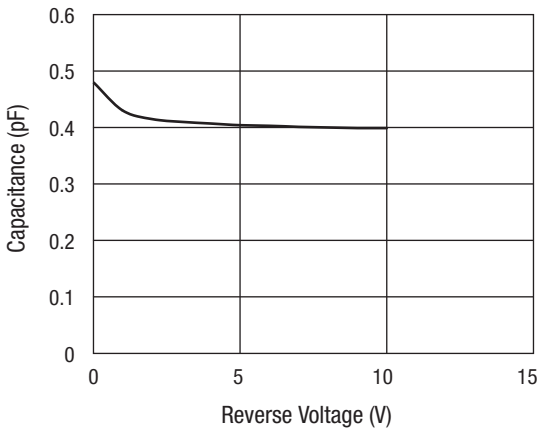
Recommended Solder Reflow Profiles

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

Tape and Reel Information

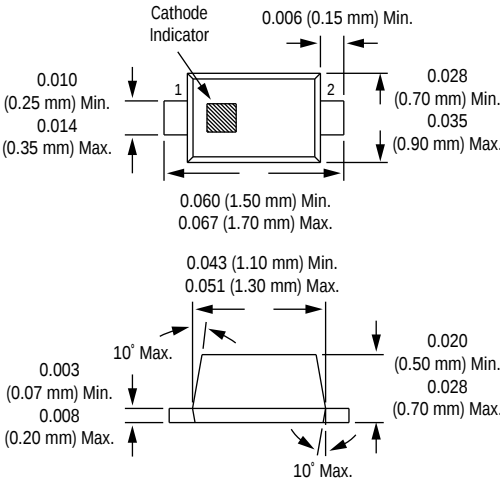
Refer to the [“Discrete Devices and IC Switch/Attenuators Tape and Reel Package Orientation”](#) Application Note.

Typical Performance Data



Total Capacitance vs. Reverse Voltage

SC-79



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