

# Low Capacitance High Voltage Schottky Diode

# Alpha

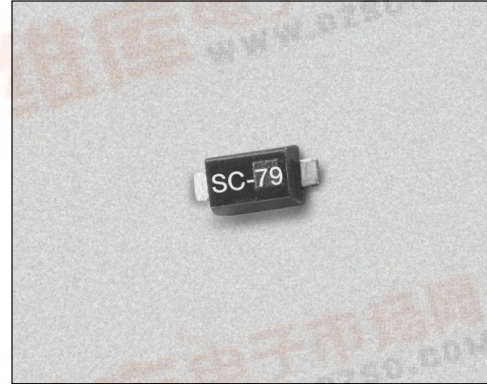
## SMS3925-079

### Features

- Silicon Schottky Diode for Detector Applications
- Ultra Small SC-79 Package
- Designed for High Volume, Low Cost Applications
- Available in Tape and Reel Packaging

### 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.



### Absolute Maximum Ratings

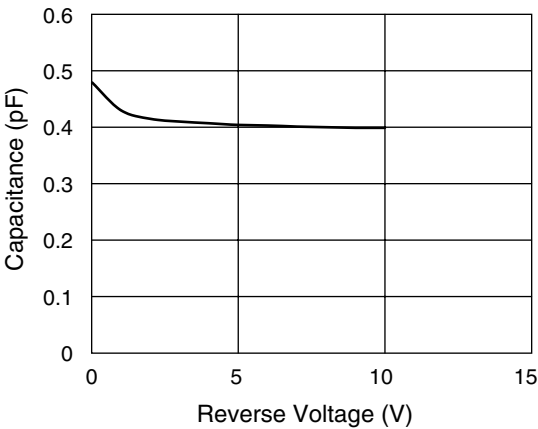
| Characteristic                                         | Value           |
|--------------------------------------------------------|-----------------|
| Reverse Voltage ( $V_R$ )                              | 40 V            |
| Forward Current - 1 mS Pulse ( $I_F$ )                 | 1 A             |
| 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 1B        |

### Electrical Specifications at 25°C

| Parameter                          | Condition                | Min. | Typ. | Max. | Unit |
|------------------------------------|--------------------------|------|------|------|------|
| Reverse Current ( $I_R$ )          | $V_R = 40$ V             |      |      | 10   | uA   |
| Capacitance ( $C_T$ ) <sup>1</sup> | $V_R = 0$ V, $F = 1$ MHz |      | 0.48 | 0.6  | pF   |
| Forward Voltage ( $V_F$ )          | $I_F = 1$ mA             | 0.57 | 0.62 | 0.67 | V    |

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

Typical Performance Data



Total Capacitance vs. Reverse Voltage

SPICE Model Parameters

| Parameter | Units | SMS3925  |
|-----------|-------|----------|
| IS        | A     | 1.8E-09  |
| RS        | Ω     | 5.4      |
| N         | -     | 1.7      |
| TT        | S     | 8E-11    |
| CJ0       | pF    | 0.36     |
| M         | -     | 0.24     |
| EG        | eV    | 0.69     |
| XTI       | -     | 2        |
| FC        | -     | 0.5      |
| BV        | V     | 58       |
| IBV       | A     | 1.00E-05 |
| VJ        | V     | 0.800    |

SC-79

