

# SVC203C



ON Semiconductor®

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## Varactor Diode

Monolithic dual Varactor Diode for FM Tuning  
16V, 50nA, CR=4.6, Q=60

### Features

- Dual type with a good linearity of C-V characteristic. Excels in large input characteristics
- Small-sized package (CP) usable in ultrasmall-sized sets (surface mount type)
- Applicable to FM wide band due to high capacitance ratio ( $V_R=1.5$  to  $9V$ )

### Specifications

Absolute Maximum Ratings at  $T_a=25^\circ C$

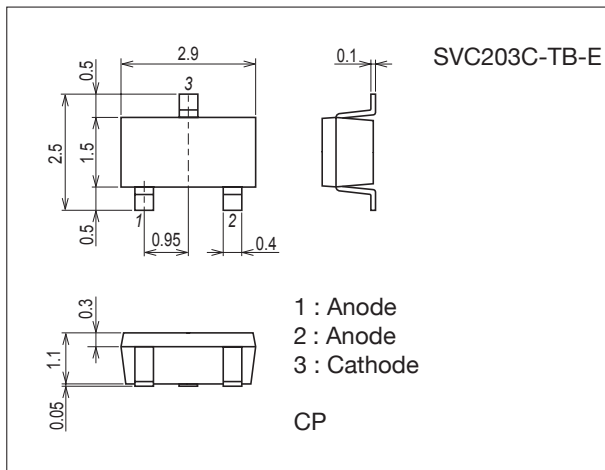
| Parameter            | Symbol    | Conditions | Ratings     | Unit       |
|----------------------|-----------|------------|-------------|------------|
| Reverse Voltage      | $V_R$     |            | 16          | V          |
| Junction Temperature | $T_j$     |            | 125         | $^\circ C$ |
| Storage Temperature  | $T_{stg}$ |            | -55 to +125 | $^\circ C$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### Package Dimensions

unit : mm (typ)

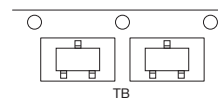
7013A-006



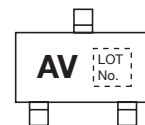
### Product & Package Information

- Package : CP
- JEITA, JEDEC : SC-59, TO-236, SOT-23, TO-236AB
- Minimum Packing Quantity : 3,000 pcs./reel

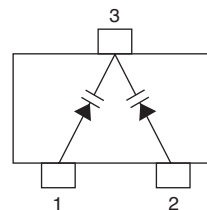
### Packing Type: TB



### Marking



### Electrical Connection



### ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

# SVC203C

## Electrical Characteristics at Ta=25°C

| Parameter                  | Symbol             | Conditions                     | Ratings  |     |       | Unit |
|----------------------------|--------------------|--------------------------------|--|-----|-------|------|
|                            |                    |                                | min  | typ | max   |      |
| Breakdown Voltage          | V <sub>(BR)R</sub> | I <sub>R</sub> =10μA           | 16   |     |       | V    |
| Reverse Current            | I <sub>R</sub>     | V <sub>R</sub> =10V            |  |     | 50    | nA   |
| Interterminal Capacitance* | C1.0V              | V <sub>R</sub> =1.0V, f=1MHz   | 58.80  |     | 65.98 | pF   |
|                            | C6.0V              | V <sub>R</sub> =6.0V, f=1MHz   | 18.72  |     | 25.11 | pF   |
|                            | C9.0V              | V <sub>R</sub> =9.0V, f=1MHz   | 10.84  |     | 13.40 | pF   |
| Quality Factor             | Q                  | V <sub>R</sub> =3.0V, f=100MHz | 60   |     |       |      |
| Capacitance Ratio          | C <sub>R</sub>     | C1.0V / C9.0V                  | 4.6  |     |       |      |
| Matching Tolerance         | ΔC <sub>m</sub>    | V <sub>R</sub> =1.0V           | $\frac{(C_{max} - C_{min})}{C_{min}} \times 100$ |     | 6.5   | %    |
|                            |                    | V <sub>R</sub> =6.0V           |  |     | 5.5   | %    |
|                            |                    | V <sub>R</sub> =9.0V           |  |     | 11.8  | %    |

\* Capacitance value of one diode

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

## Address and Capacitance Value (Reference Value)

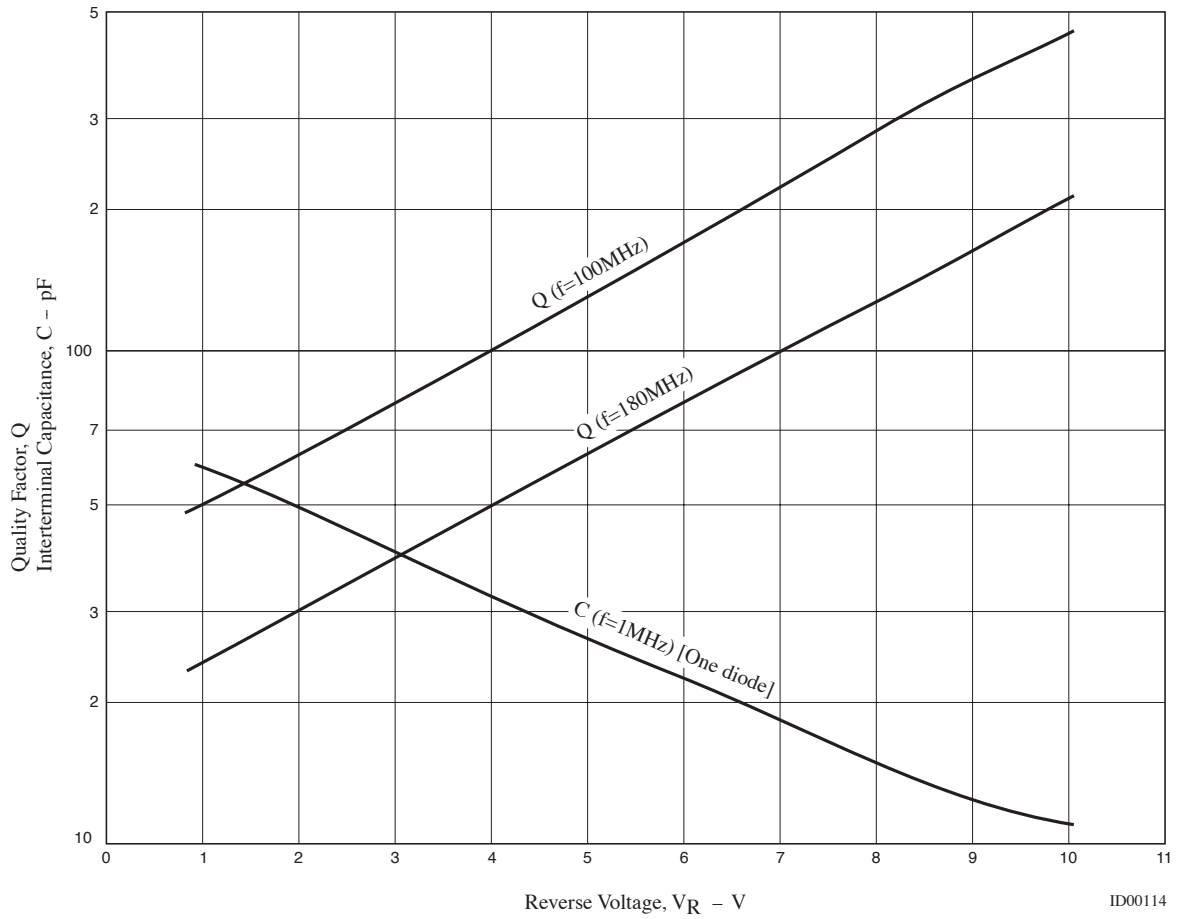
| C1.0V   |                  | C6.0V   |                  | C9.0V   |                  |
|---------|------------------|---------|------------------|---------|------------------|
| Address | Capacitance (pF) | Address | Capacitance (pF) | Address | Capacitance (pF) |
| 11      | 59.10            | 61      | 18.91            | 91      | 10.89            |
|         | 62.92            |         | 19.95            |         | 12.17            |
| 12      | 61.97            | 62      | 19.76            | 92      | 11.93            |
|         | 65.65            |         | 20.85            |         | 13.33            |
|         |                  | 63      | 20.64            |         |                  |
|         |                  |         | 21.79            |         |                  |
|         |                  | 64      | 21.57            |         |                  |
|         |                  |         | 22.77            |         |                  |
|         |                  | 65      | 22.55            |         |                  |
|         |                  |         | 23.80            |         |                  |
|         |                  | 66      | 23.56            |         |                  |
|         |                  |         | 24.87            |         |                  |

## ORDERING INFORMATION

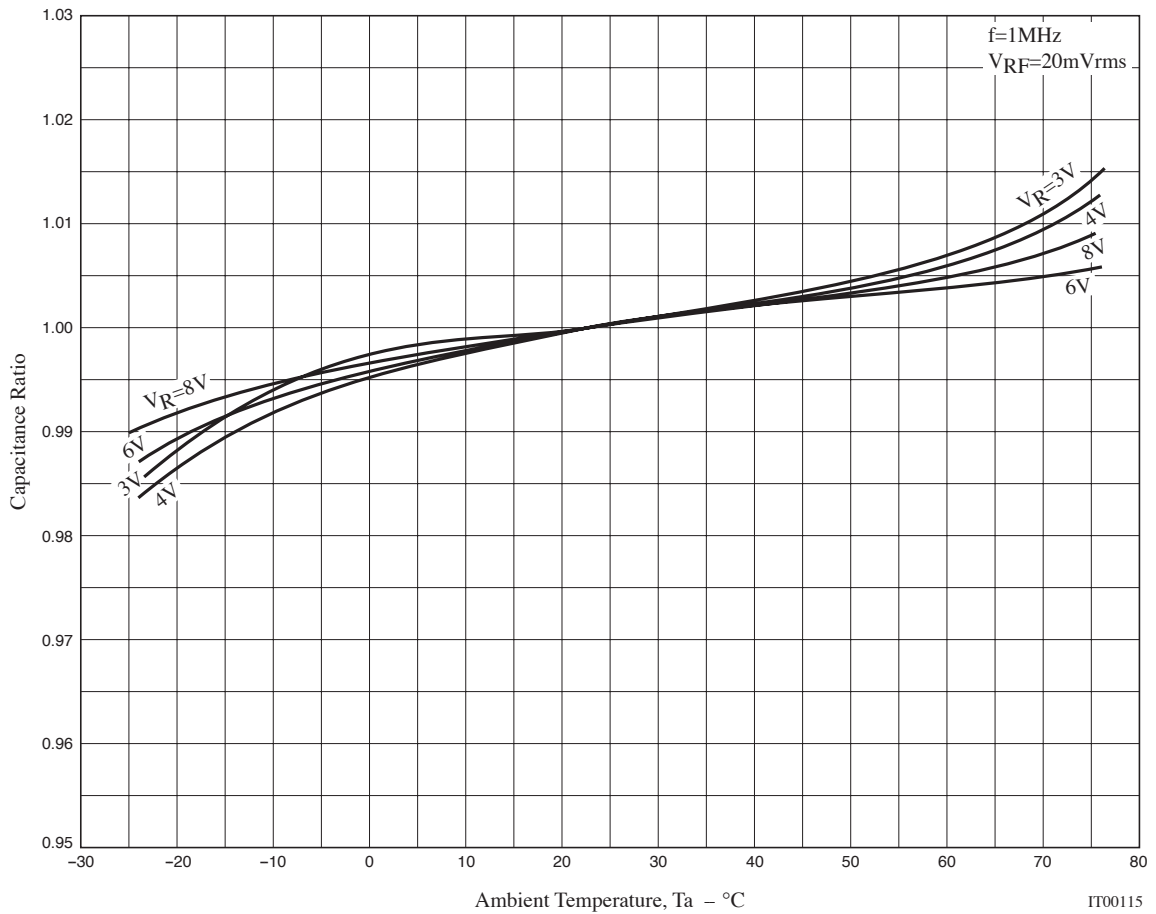
| Device       | Package | Shipping       | memo    |
|--------------|---------|----------------|---------|
| SVC203C-TB-E | CP      | 3,000pcs./reel | Pb-Free |

# SVC203C

C, Q - V<sub>R</sub>



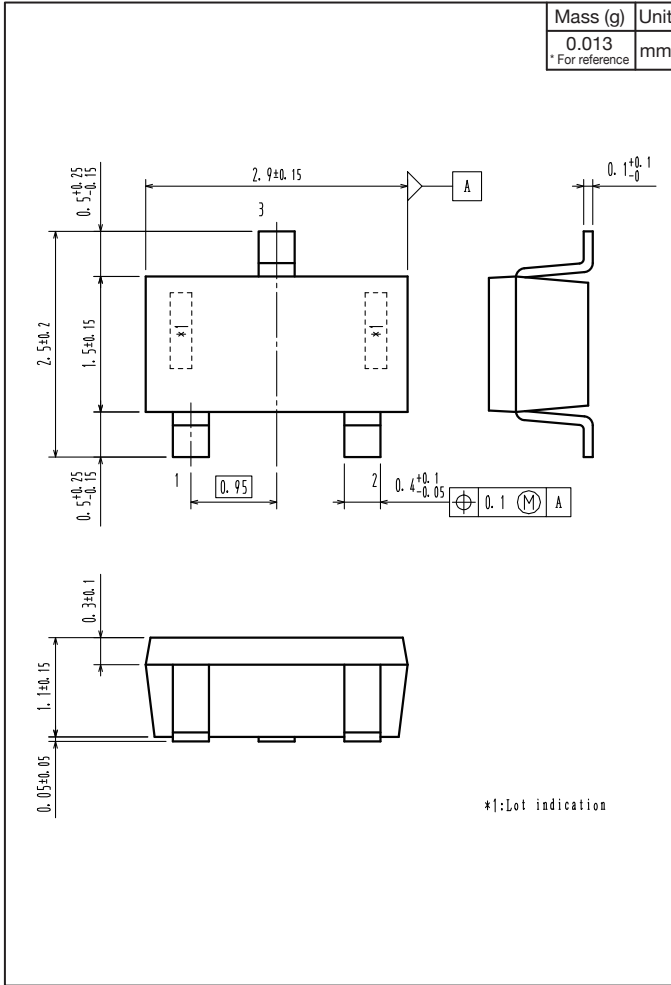
C - T<sub>a</sub>



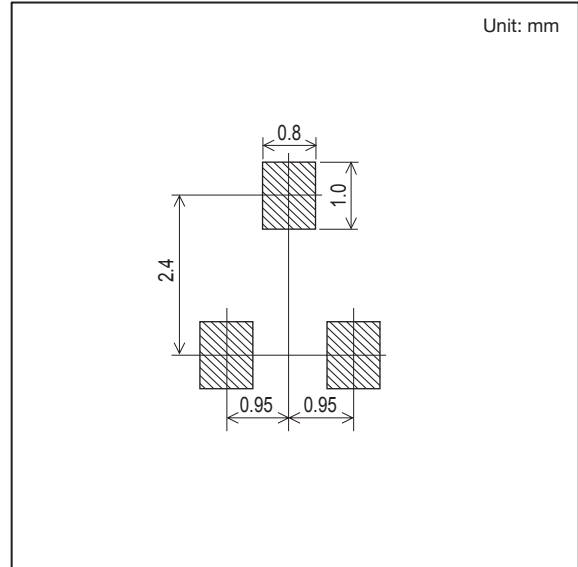
# SVC203C

## Outline Drawing

SVC203C-TB-E



## Land Pattern Example



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