SVC203C

Varactor Diode

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

ON Semiconductor®

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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 Ta=25°C

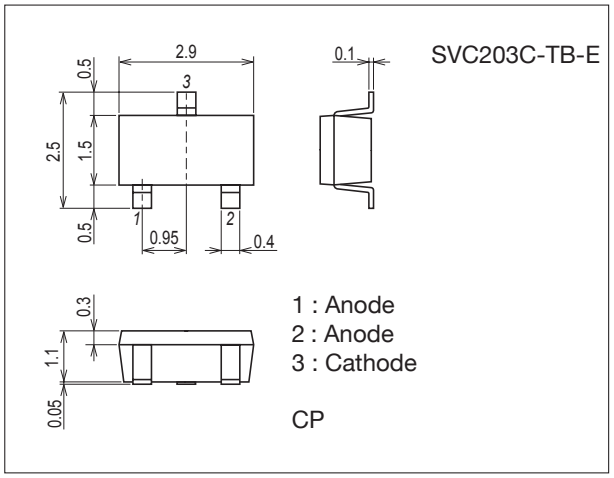
Parameter	Symbol	Conditions	Ratings	Unit
Reverse Voltage	V_R		16	V
Junction Temperature	Tj		125	°C
Storage Temperature	Tstg		−55 to +125	°C

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)

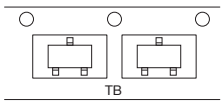
7013A-006



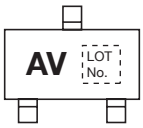
Product & Package Information

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

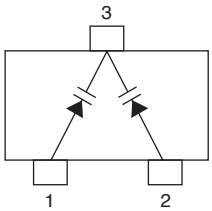
Packing Type: TB



Marking



Electrical Connection



ORDERING INFORMATION

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

Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions		Ratings min	Ratings typ	Ratings max	Unit
Breakdown Voltage	$V_{(BR)R}$	I_R=10μA		16			V
Reverse Current	I_R	V_R=10V				50	nA
Interterminal Capacitance*	C1.0V	V_R=1.0V, f=1MHz		58.80		65.98	pF
	C6.0V	V_R=6.0V, f=1MHz		18.72		25.11	pF
	C9.0V	V_R=9.0V, f=1MHz		10.84		13.40	pF
Quality Factor	Q	V_R=3.0V, f=100MHz		60			
Capacitance Ratio	C_R	C1.0V / C9.0V		4.6			
Matching Tolerance	ΔC_m	V_R=1.0V	$\frac{(Cmax - Cmin)}{Cmin} \times 100$			6.5	%
		V_R=6.0V				5.5	%
		V_R=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.

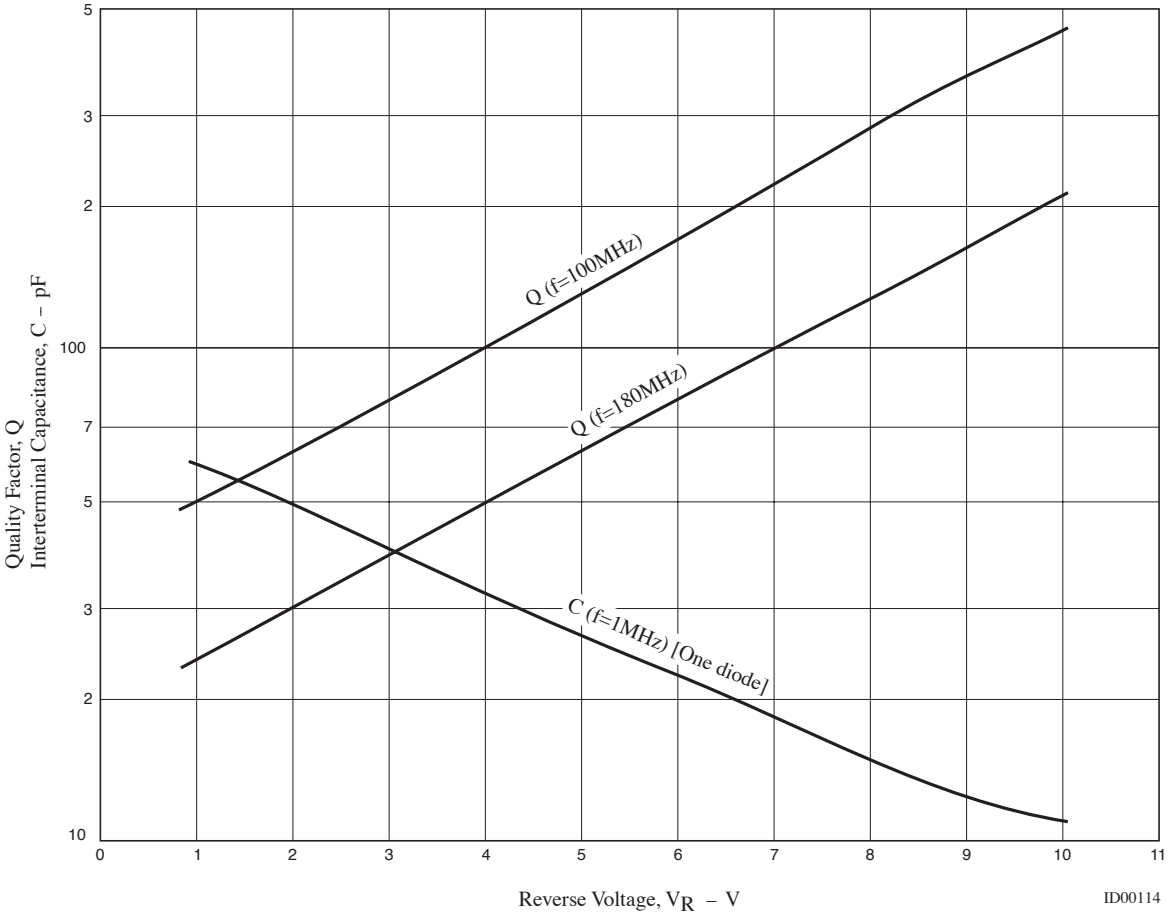
Address and Capacitance Value (Reference Value)

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

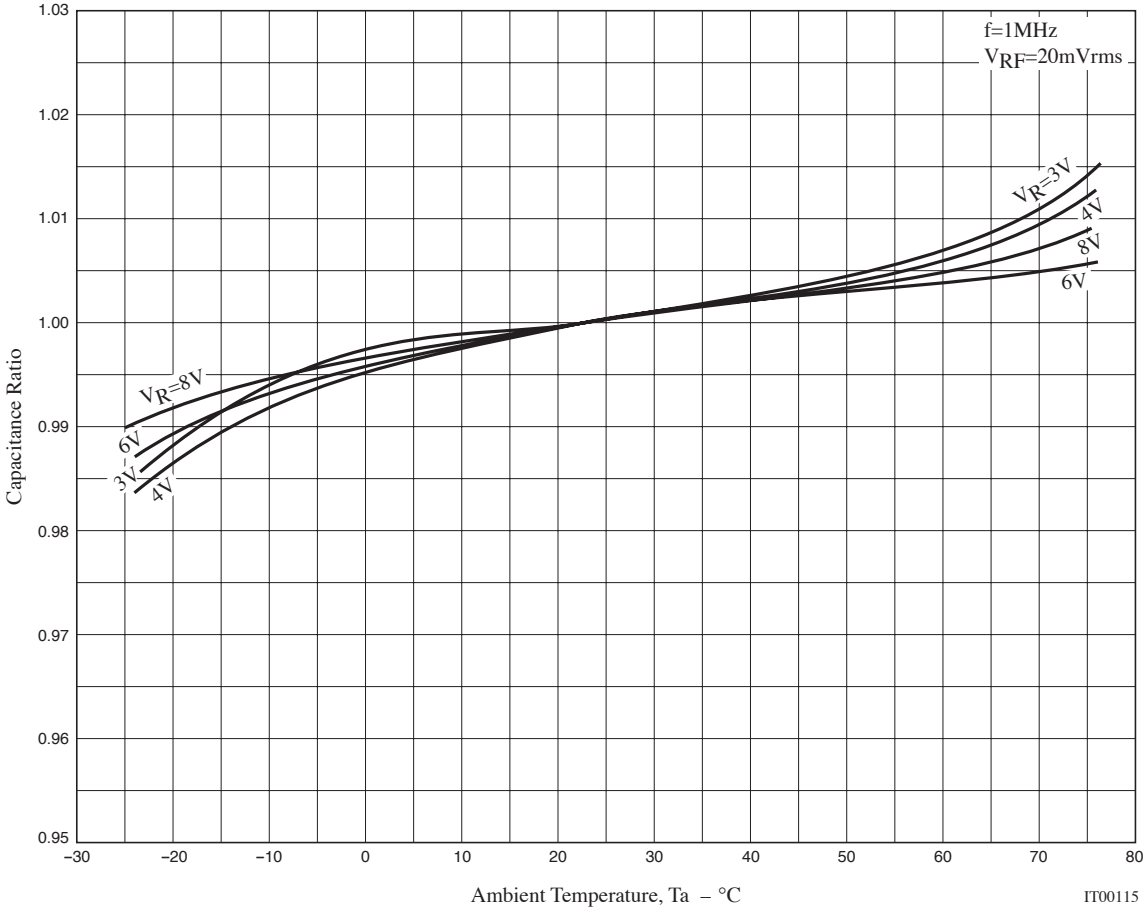
ORDERING INFORMATION

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

C, Q – V_R

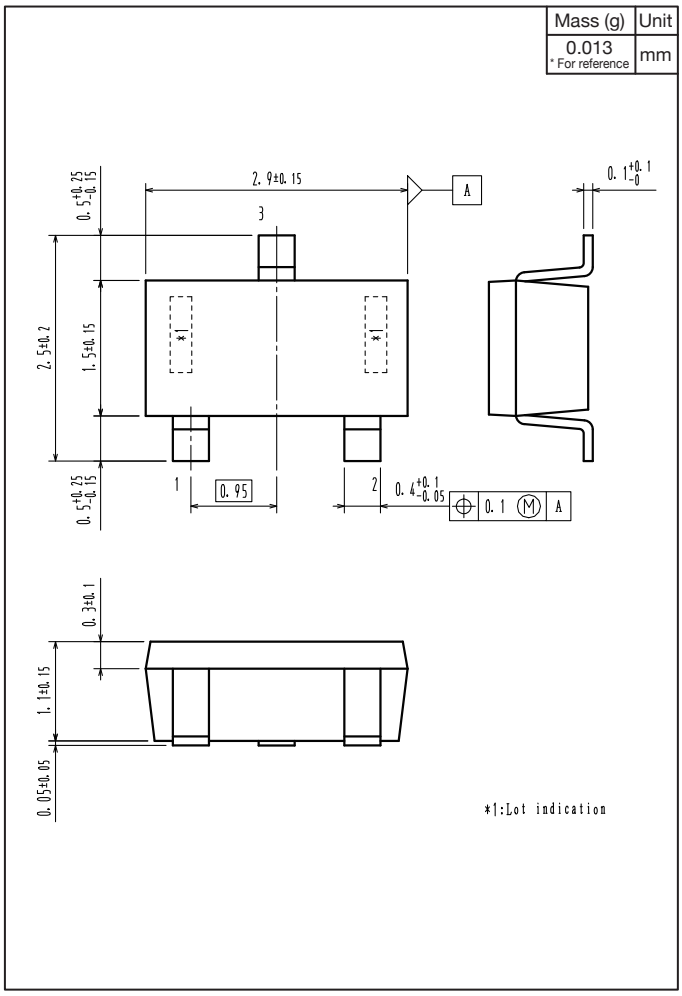

Quality Factor, Q
Interterminal Capacitance, C – pF
Q (f=100MHz)
Q (f=180MHz)
C (f=1MHz) [One diode]
Reverse Voltage, V_R – V
ID00114

C – Ta

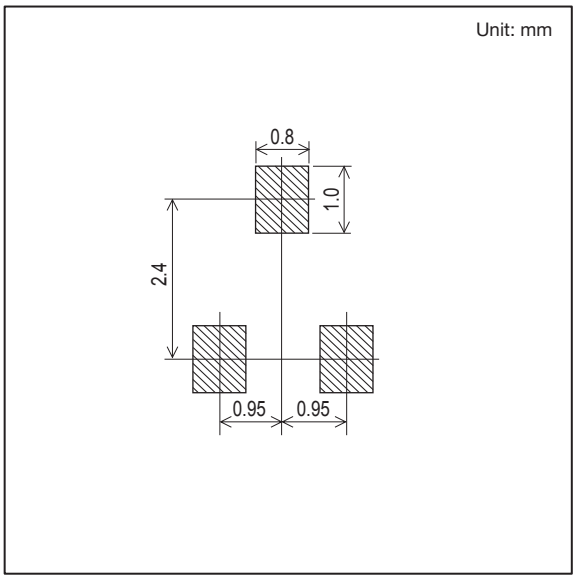

f=1MHz
V_{RF}=20mVrms
V_R=3V
4V
8V
6V
V_R=8V
6V
3V
4V
Capacitance Ratio
Ambient Temperature, Ta – °C
IT00115

Outline Drawing

SVC203C-TB-E



Land Pattern Example



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