Ordering number : EN2195I

SVC203C

Varactor Diode

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

ON Semiconductor®

http://onsemi.com

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

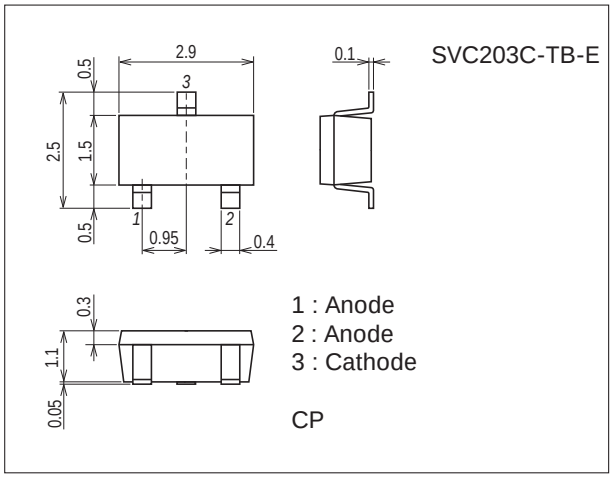
Parameter	Symbol	Conditions	Ratings	Unit
Reverse Voltage	V_R		16	V
Junction Temperature	Tj		125	°C
Storage Temperature	Tstg		−55 to +125	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Package Dimensions

unit : mm (typ)

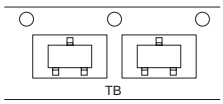
7013A-006



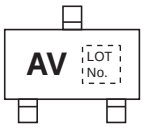
Product & Package Information

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

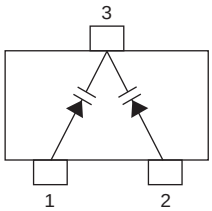
Packing Type: TB



Marking



Electrical Connection



Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions		Ratings min	Ratings typ	Ratings max	Unit
Breakdown Voltage	$V_{(BR)R}$	I_R=1μA		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

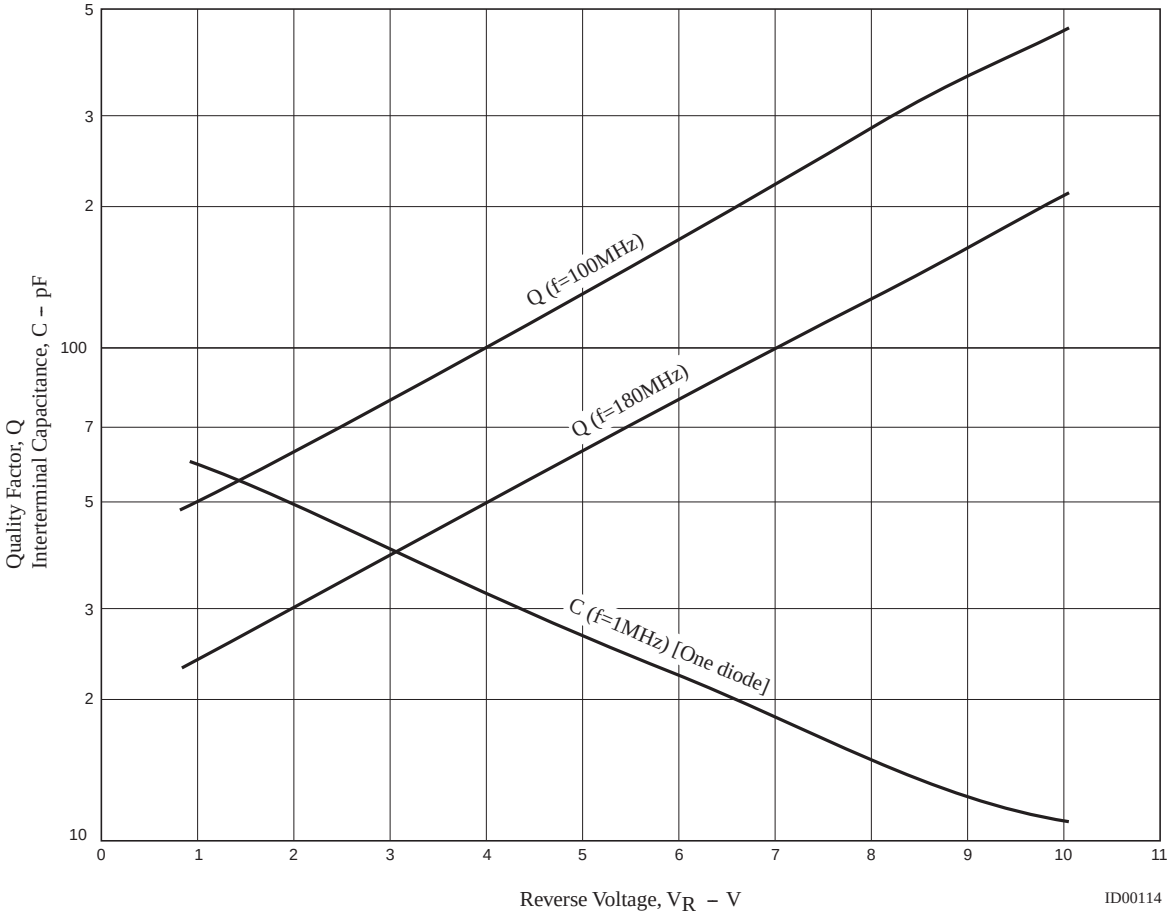
Address and Capacitance Value (Reference Value)

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

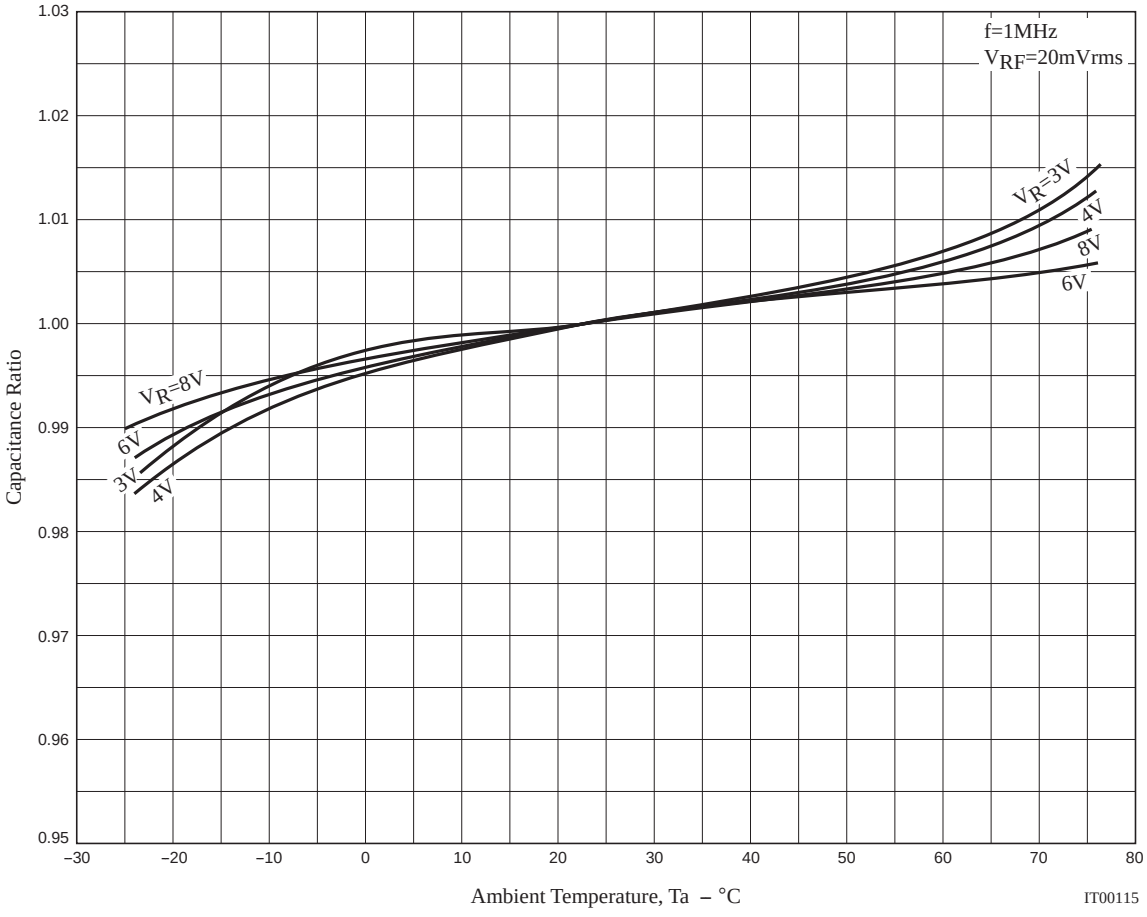
Ordering Information

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

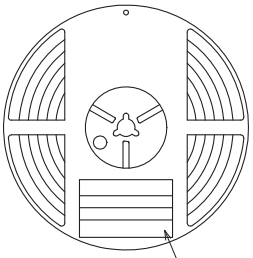
Taping Specification

SVC203C-TB-E

1. Packing Format

Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
CP	CP	3,000	15,000	90,000	5 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210

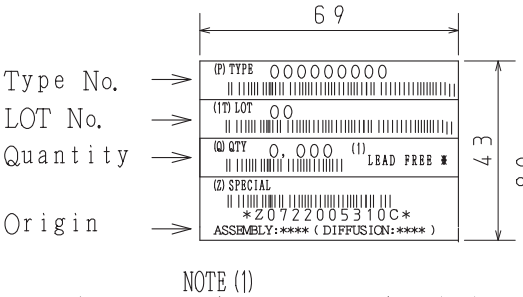
Packing method



Reel label

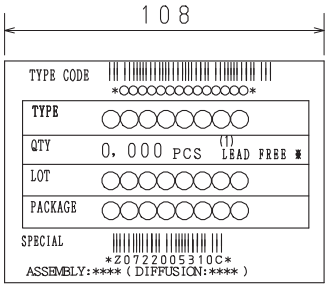
Reel label, Inner box label

(unit:mm)



Outer box label

It is a label at the time of factory shipments. The form of a label may change in physical distribution process.

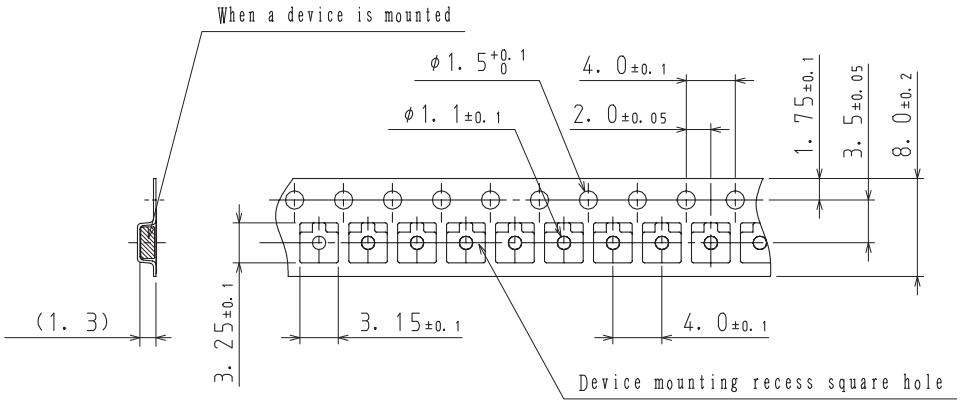


NOTE (1)
The LEAD FREE ※ description shows that the surface treatment of the terminal is lead free.

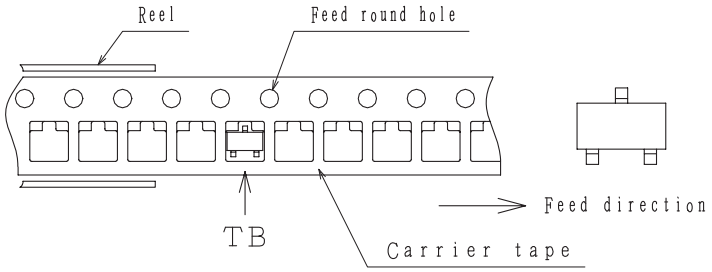
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



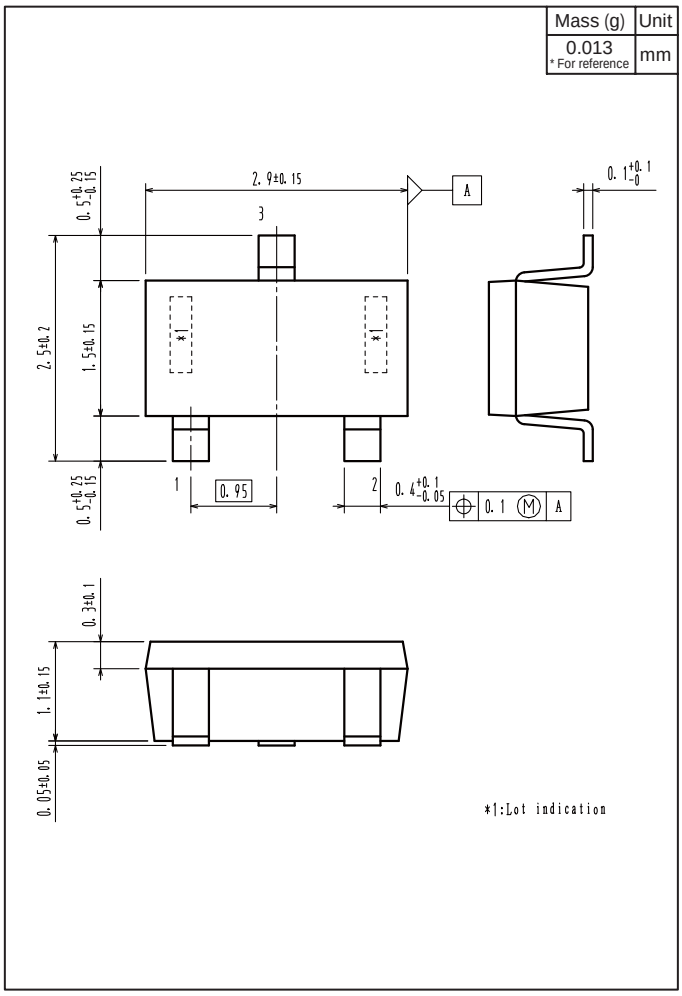
2-2. Device placement direction



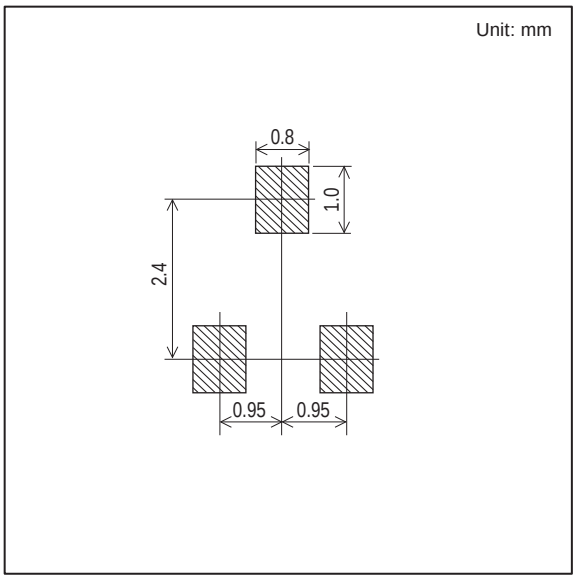
Those with one electrode terminal on the feed hole side……TB

Outline Drawing

SVC203C-TB-E



Land Pattern Example



Mouser Electronics

Authorized Distributor

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ON Semiconductor:

SVC203C-TB-E SVC203C-AA-TB-E