To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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RENESAS

VARACTOR DIODE
1SV218

FOR VHF/CATV TV TUNER
SILICON EPITAXIAL DIODE

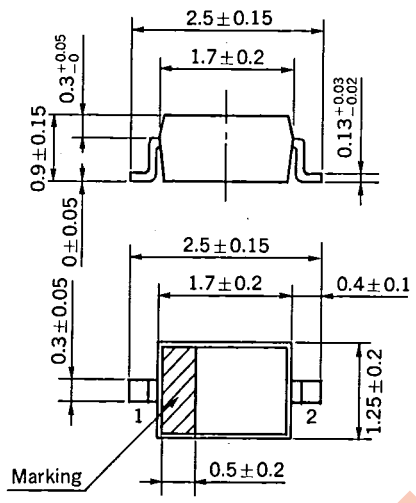
DESCRIPTION

The 1SV218 is a hyper-abrupt junction type voltage-variable capacitance diode.

It is designed for electronic tuning circuit application in CATV tuner and features high capacitance ratio and high reliability.

PACKAGE DIMENSIONS

in millimeters



1. Cathode
2. Anode

Cathode Mark : Yellow

FEATURES

- High capacitance ratio. N = 11.0 MIN. (C2/C25)
- Low Leakage current. $I_R \leqq 10$ nA at $V_R = 30$ V
- Very Small package.

ABSOLUTE MAXIMUM RATINGS ($T_a = 25$ °C)

Peak Reverse Voltage	V_{RM}*1	35	V
DC Reverse Voltage	V_R	30	V
Power Dissipation	P_D	150	mW
Junction Temperature	T_j	125	°C
Storage Temperature	T_{stg}	−55 to +125	°C

TYPICAL CHARACTERISTICS ($T_a = 25$ °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Reverse Current	I_{R1}			10	nA	$V_R = 30$ V
Reverse Current	I_{R2}			50	nA	$V_R = 30$ V, $T_a = 60$ °C
Capacitance	C2	32.10		37.10	pF	$V_R = 2$ V, f = 1 MHz
Capacitance	C10	7.95		9.85	pF	$V_R = 10$ V, f = 1 MHz
Capacitance	C18	3.25		3.88	pF	$V_R = 18$ V, f = 1 MHz
Capacitance	C25	2.50		3.00	pF	$V_R = 25$ V, f = 1 MHz
Capacitance Ratio	N	11.0				C2/C25
Series Resistance	r_s			0.8	Ω	$C_t = 9$ pF, f = 50 MHz
Capacitance Tolerance	ΔC			3.0	%	*2

*1 : $R_L \geqq 10$ kΩ

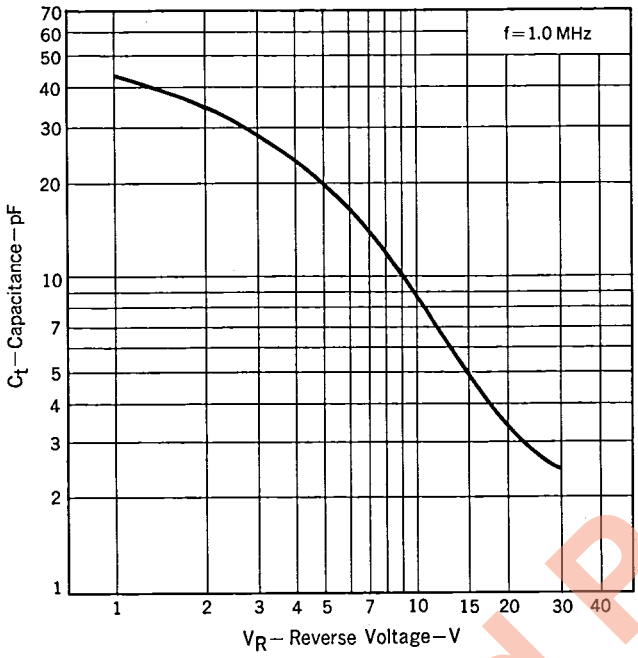
*2 : Diodes are available in matched sets of 24, 60, 120, 120 x n units.
For two diodes of one set the following conditions are relevant:
The variations ΔC in capacitance values at $V_R = 2$, 10, 18 and 25 V are less then 3 % for 1SV218.

$$\Delta C = \frac{C_{max.} - C_{min.}}{C_{min.}} \times 100\ (\%)$$

The descriptions are therefore subject to change without notice in advance.

TYPICAL CHARACTERISTICS (T_a = 25 °C)

TERMINAL CAPACITANCE vs.
REVERSE VOLTAGE



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