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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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Not recommended
for new design

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HVB27WK

Variable Capacitance Diode for FM tuner

REJ03G0093-0100Z
(Previous: ADE-208-594)
Rev.1.00
Sep.18.2003

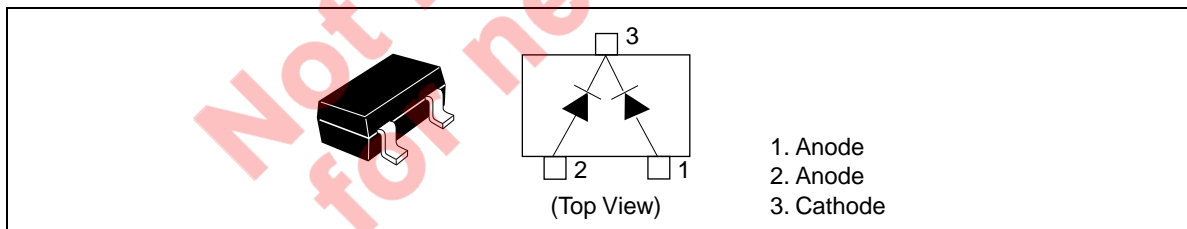
Features

- High capacitance ratio.
- Low series resistance. ($r_s = 0.4 \Omega$ max)
- Good linearity of C-V curve.
- To be usable at low voltage.
- CMPAK package is suitable for high density surface mounting and high speed assembly.

Ordering Information

Type No.	Laser Mark	Package Code
HVB27WK	T5	CMPAK

Pin Arrangement



HVB27WK

Absolute Maximum Ratings *¹

(Ta = 25°C)

Item	Symbol	Value	Unit
Reverse voltage	V _R	15	V
Junction temperature	T _j	125	°C
Storage temperature	T _{stg}	-55 to +125	°C

Note: 1. Per one device.

Electrical Characteristics *³

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	I _{R1}	—	—	10	nA	V _R = 9 V
	I _{R2}	—	—	100		V _R = 9 V, Ta = 60°C
Capacitance	C ₁	52.0	—	62.0	pF	V _R = 1 V, f = 1 MHz
	C ₂	43.0	—	48.0		V _R = 2 V, f = 1 MHz
	C ₈	24.0	—	28.0		V _R = 8 V, f = 1 MHz
Capacitance ratio	n ₁	1.8	—	—	—	C ₁ /C ₈
	n ₂	1.7	—	—	—	C ₂ /C ₈
Series resistance	r _s	—	—	0.4	Ω	V _R = 2 V, f = 100 MHz
Matching error	ΔC/C* ¹	—	—	3.0	%	V _R = 1 to 8 V, f = 1 MHz

Notes: 1. A set of HVB27WK is of uniform C-V characteristics.

Measure max. value and min. value of capacitance at each bias point of V_R = 1 V through 8 V.

Calculate Matching Error,

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

2. Each group shall uniform a multiple of 4 diodes.
3. Per one device.

Main Characteristic

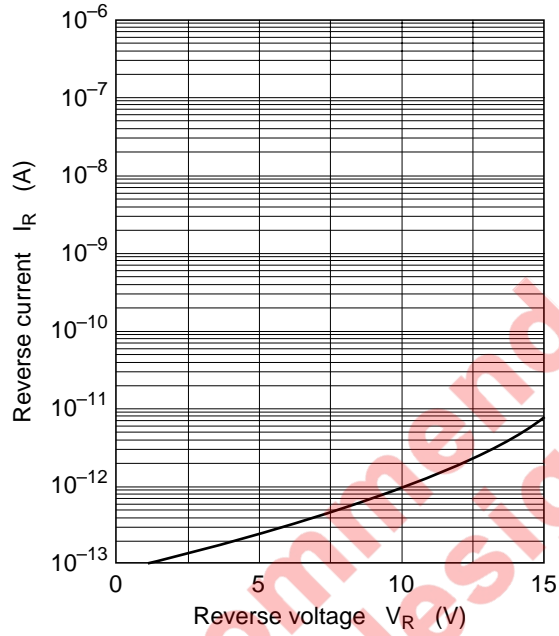


Fig.1 Reverse current vs. Reverse voltage

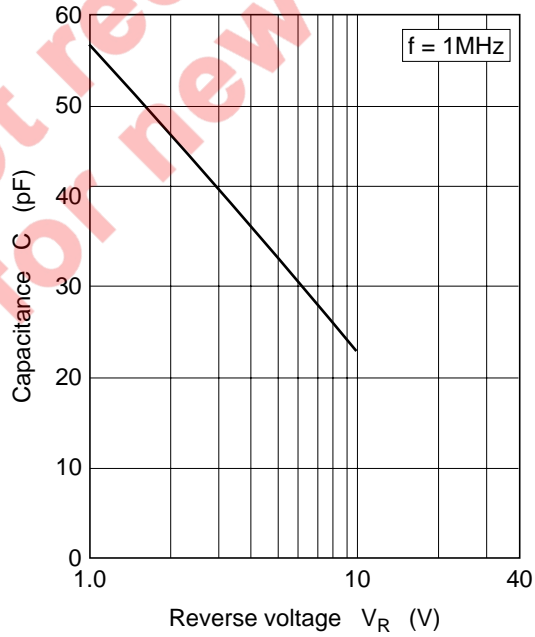
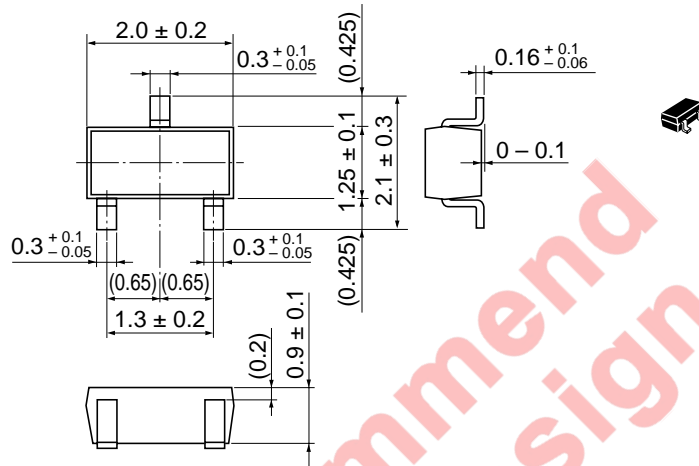


Fig.2 Capacitance vs. Reverse voltage

Package Dimensions

As of January, 2003
Unit: mm



Package Code	CMPAK
JEDEC	—
JEITA	Conforms
Mass (reference value)	0.006 g

Not recommend
for new design

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