

HVR100

Variable Capacitance Diode for AM tuner

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Feb 21, 2005

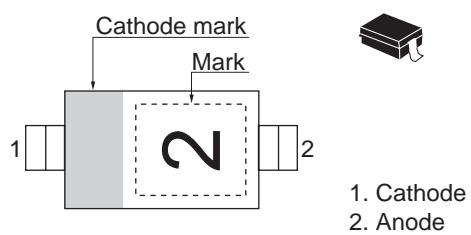
Features

- High capacitance ratio. ($n = 16.0$ min)
- High figure of merit. ($Q = 200$ min)
- To be usable at low voltage.
- Small Resin Package (SRP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Renesas Code	Previous Code
HVR100	2	PLSP0002ZA-A	SRP

Pin Arrangement



Absolute Maximum Ratings

(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

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse voltage	V _R	15	—	—	V	I _R = 10 μA
Reverse current	I _R	—	—	100	nA	V _R = 9 V
Capacitance	C ₁	421.5	—	524.6	pF	V _R = 1 V, f = 1 MHz
	C ₃	182.0	—	275.7		V _R = 3 V, f = 1 MHz
	C ₅	73.2	—	121.4		V _R = 5 V, f = 1 MHz
	C ₆	42.2	—	72.2		V _R = 6 V, f = 1 MHz
	C ₇	26.2	—	41.6		V _R = 7 V, f = 1 MHz
	C ₈	20.4	—	28.2		V _R = 8 V, f = 1 MHz
Capacitance ratio	n	16	—	—	—	C ₁ / C ₈
Figure of merit	Q	200	—	—	—	C = 450 pF, f = 1 MHz
Matching error	ΔC/C * ¹	—	—	3.0	%	V _R = 1 to 8 V, f = 1 MHz
ESD-Capability * ²	—	80	—	—	V	C = 200 pF, Both forward and reverse direction 1 pulse.

Note: 1. Each group shall uniform a multiple of 3 diodes.

A set of HVR100 is of uniform C-V characteristics.

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

Calculate Matching Error,

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

2. Failure criterion ; I_R < 100 nA at V_R = 9 V

Main Characteristic

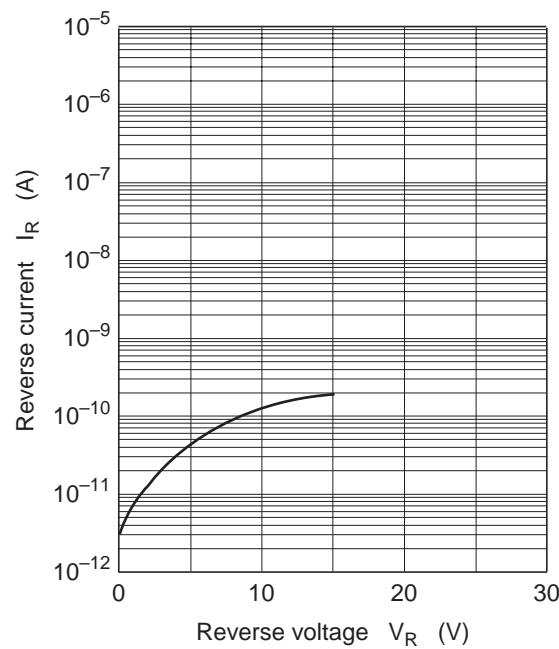


Fig.1 Reverse current vs. Reverse voltage

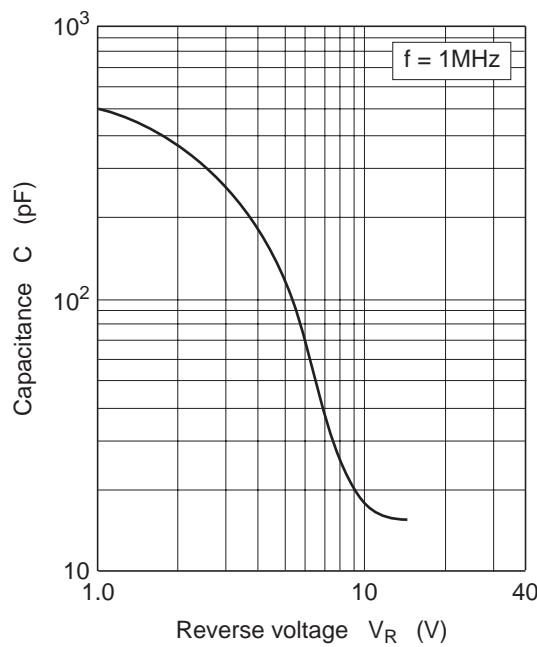
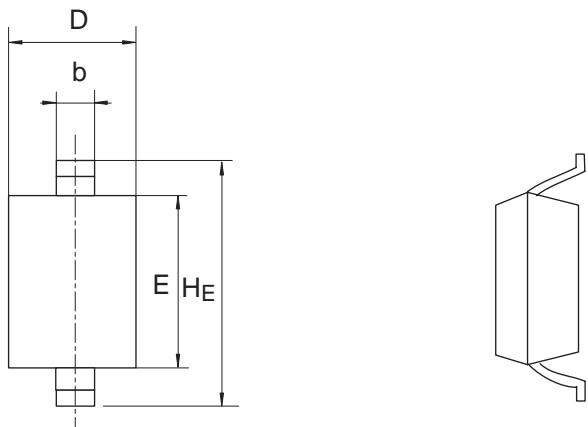
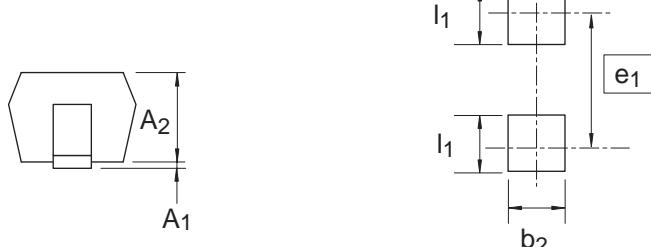


Fig.2 Capacitance vs. Reverse voltage

Package Dimensions

JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SC-77A	PLSP0002ZA-A	SRP / SRPV	0.010g





Pattern of terminal position areas

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A ₁	0	-	0.1
A ₂	0.90	-	1.30
b	0.40	-	0.80
D	1.40	-	1.80
E	2.45	-	2.85
H _E	3.60	-	4.00
b ₂	-	1.50	-
e ₁	-	3.50	-
l ₁	-	1.50	-

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