

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
for new design

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# HVL147M

## Silicon Epitaxial Trench Pin Diode for Antenna Switching

REJ03G0394-0300  
 Rev.3.00  
 Jan 20, 2006

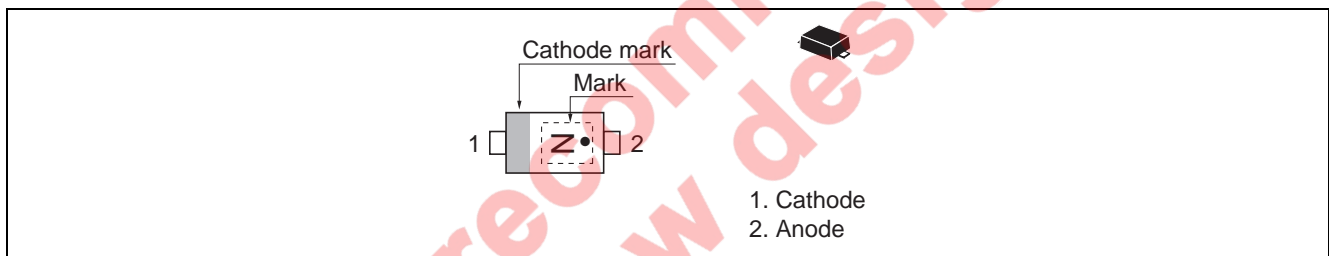
### Features

- Adopting the trench structure improves low capacitance. (C = 0.31 pF max)
- Low forward resistance. (rf = 1.5 Ω max)
- Low operation current.
- Thin Extremely small Flat Lead Package (TEFP) is suitable for surface mount design.

### Ordering Information

Type No.	Laser Mark	Package Name	Package Code
HVL147M	N	TEFP	PUSF0002ZA-A

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Reverse voltage	$V_R$	30	V
Forward current	$I_F$	100	mA
Power dissipation	$P_d$	100	mW
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 current	$I_R$	—	—	100	nA	$V_R = 30\text{ V}$
Forward voltage	$V_F$	—	—	1.00	V	$I_F = 10\text{ mA}$
Capacitance	C	—	—	0.31	pF	$V_R = 1\text{ V}$ , $f = 1\text{ MHz}$
Forward resistance	$r_f$	—	2.5	—	$\Omega$	$I_F = 2\text{ mA}$ , $f = 100\text{ MHz}$
		—	—	1.5		$I_F = 10\text{ mA}$ , $f = 100\text{ MHz}$
ESD-Capability *1	—	100	—	—	V	$C = 200\text{ pF}$ , $R = 0\ \Omega$ , Both forward and reverse direction 1 pulse.

Notes: 1. Failure criterion ;  $I_R > 100\text{ nA}$  at  $V_R = 30\text{ V}$

2. For TAFP package, the material of lead is exposed for cutting plane. There for, soldering nature of lead tip part is considered as unquestioned. Please kindly consider soldering nature.

Not recommended for new designs

Main Characteristic

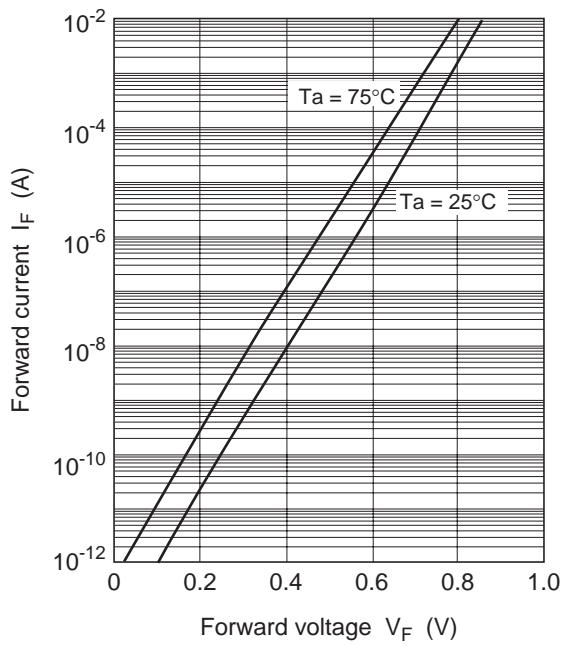


Fig.1 Forward current vs. Forward voltage

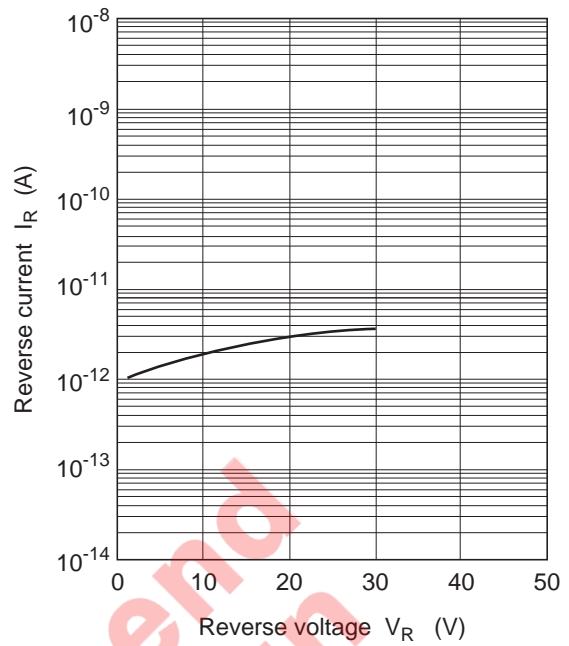


Fig.2 Reverse current vs. Reverse voltage

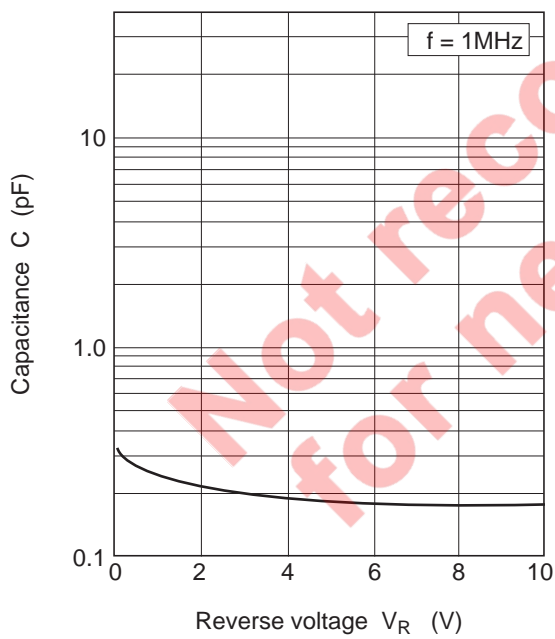


Fig.3 Capacitance vs. Reverse voltage

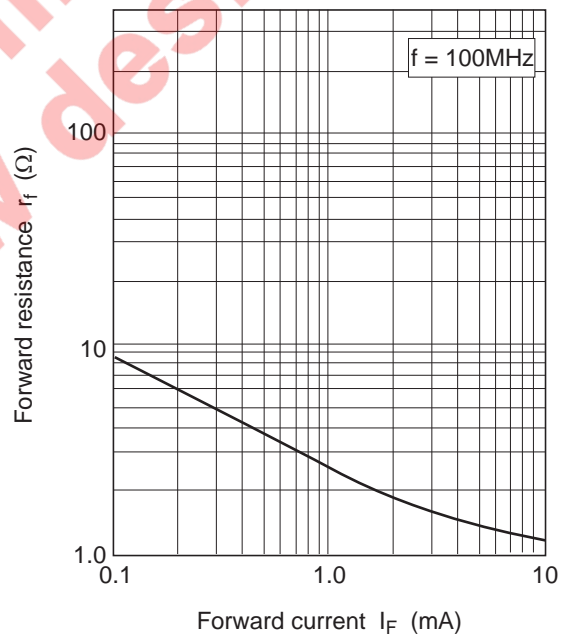
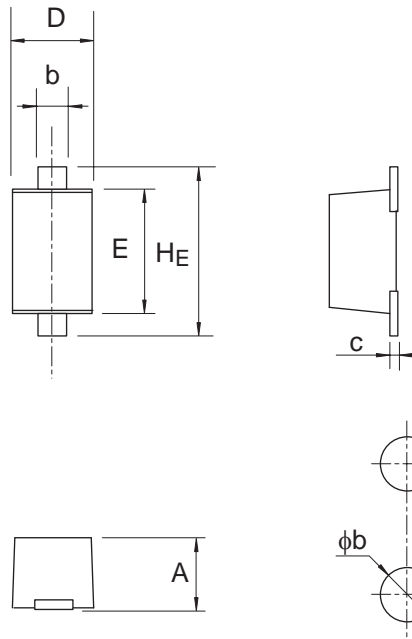


Fig.4 Forward resistance vs. Forward current

Package Dimensions

Package Name TEFP	JEITA Package Code —	RENESAS Code PUSF0002ZA-A	Previous Code TEFP / TEFPV	MASS[Typ.] 0.0006g
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Pattern of terminal position areas

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	-	-	0.40
b	0.25	0.30	0.35
c	0.08	0.13	0.18
D	0.55	0.60	0.65
E	0.75	0.80	0.90
HE	0.95	1.00	1.05
phi b	-	0.40	-
e1	-	1.00	-

Not recommend for new design

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