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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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HVL138A

Silicon Epitaxial Trench Pin Diode for Antenna Switching

REJ03G0431-0200
Rev.2.00
Jan 12, 2006

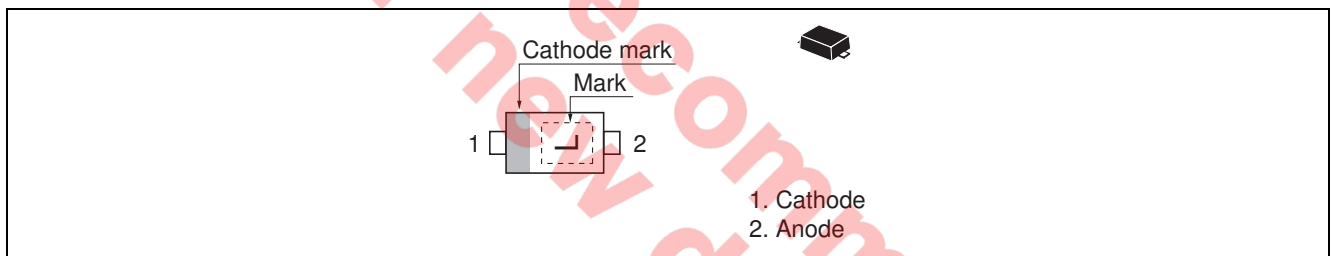
Features

- Adopting the trench structure improves low capacitance. ($C = 0.85 \text{ pF max}$)
- Low forward resistance. ($r_f = 1.1 \Omega \text{ max}$)
- Low operation current.
- Extremely small Flat Lead Package (EFP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Name	Package Code
HVL138A	L	EFP	PXSF0002ZA-A

Pin Arrangement



Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	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	—	—	10	nA	$V_R = 25\text{ V}$
Forward voltage	V_F	—	—	0.9	V	$I_F = 2\text{ mA}$
Capacitance	C	—	—	0.85	pF	$V_R = 1\text{ V}, f = 1\text{ MHz}$
Forward resistance	r_f	—	—	1.1	Ω	$I_F = 2\text{ mA}, f = 100\text{ MHz}$

Note: For EFP 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.

Main Characteristic

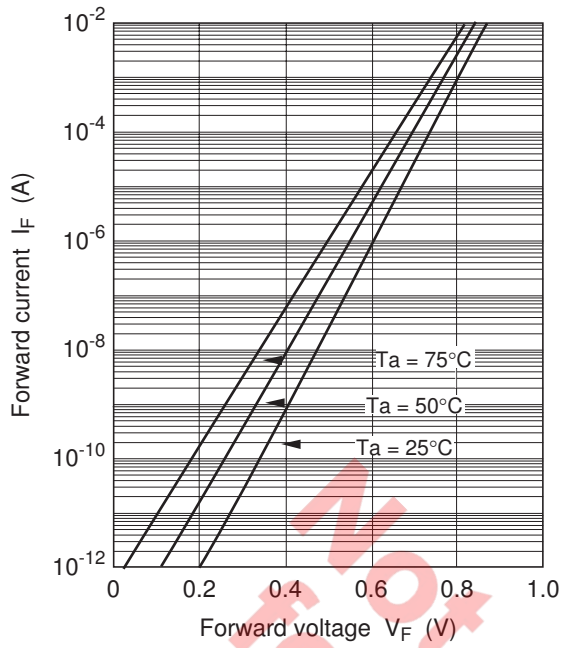


Fig.1 Forward current vs. Forward voltage

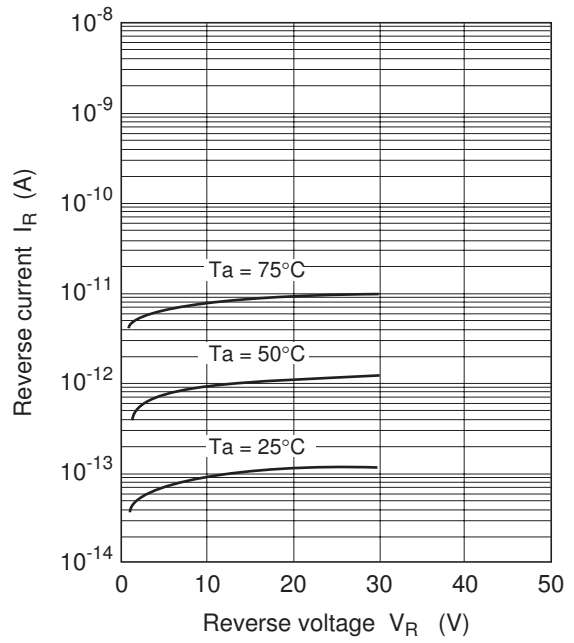


Fig.2 Reverse current vs. Reverse voltage

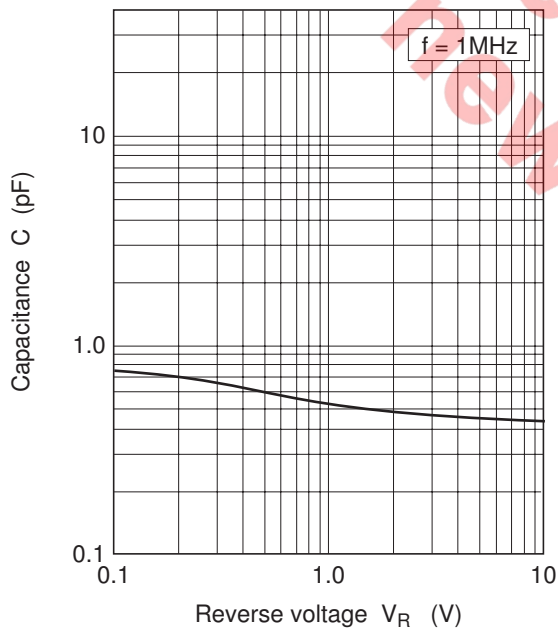


Fig.3 Capacitance vs. Reverse voltage

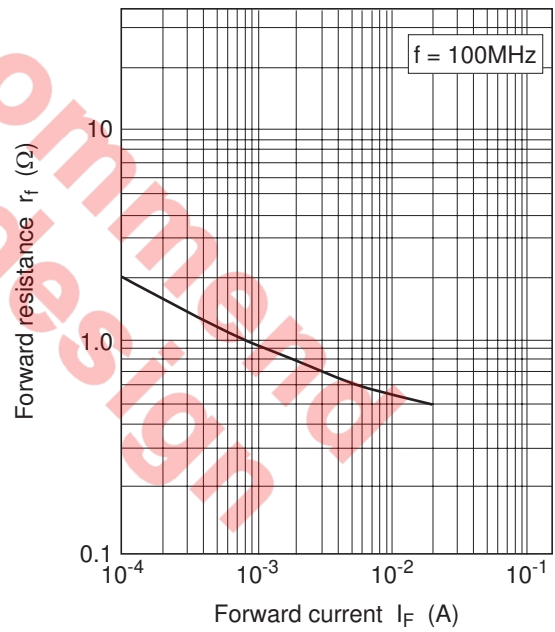


Fig.4 Forward resistance vs. Forward current

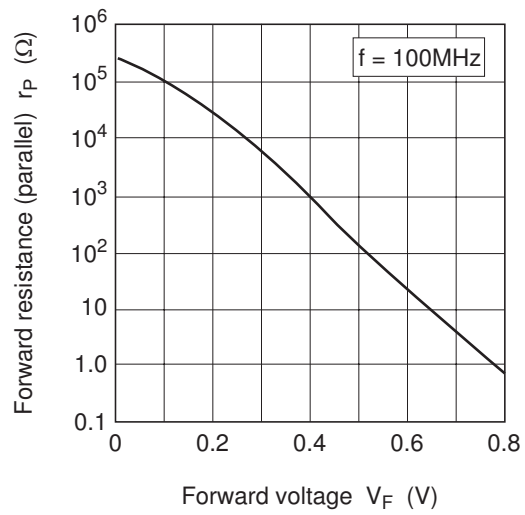
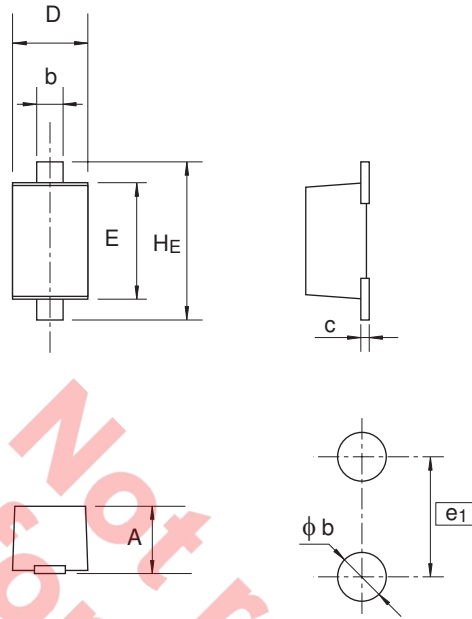


Fig.5 Forward resistance (parallel) vs. Forward voltage

Not recommend
for new design

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
EFP	—	PXSF0002ZA-A	EFP / EFPV	0.0007g



Pattern of terminal position areas

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	0.44	0.47	0.50
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	0.85
HE	0.95	1.00	1.05
phi b	—	0.40	—
e1	—	1.00	—

Not recommended for new design

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