To our customers,

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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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HZS-N Series

Silicon Planar Zener Diode for Stabilized Power Supply

REJ03G0185-0300
Rev.3.00
Nov 12, 2007

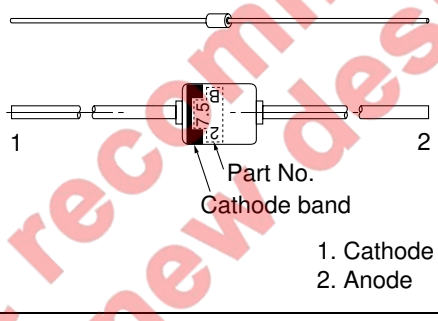
Features

- Low leakage, low zener impedance and maximum power dissipation of 400 mW are ideally suited for stabilized power supply, etc.
- Wide voltage range from 1.88 V through 38.52 V of zener voltage provide flexible application.
- Suitable for 5mm-pitch high speed automatic insertion.

Ordering Information

Part No.	Cathode Band	Package Name	Package Code
HZS-N Series	Black	MHD	GRZZ0002ZC-A

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Power dissipation	Pd	400	mW
Junction temperature	Tj	200	°C
Storage temperature	Tstg	–55 to +175	°C

Electrical Characteristics

(Ta = 25°C)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		V_Z (V)*[1]		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition
		Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)
HZS2.0N	B1	1.88	2.10	5	120	0.5	100	5
	B2	2.02	2.20					
HZS2.2N	B1	2.12	2.30	5	120	0.7	100	5
	B2	2.22	2.41					
HZS2.4N	B1	2.33	2.52	5	120	1.0	100	5
	B2	2.43	2.63					
HZS2.7N	B1	2.54	2.75	5	100	1.0	110	5
	B2	2.69	2.91					
HZS3.0N	B1	2.85	3.07	5	50	1.0	120	5
	B2	3.01	3.22					
HZS3.3N	B1	3.16	3.38	5	20	1.0	120	5
	B2	3.32	3.53					
HZS3.6N	B1	3.47	3.68	5	10	1.0	120	5
	B2	3.62	3.83					
HZS3.9N	B1	3.77	3.98	5	5	1.0	120	5
	B2	3.92	4.14					
HZS4.3N	B1	4.05	42.6	5	5	1.0	120	5
	B2	4.20	4.40					
	B3	4.34	4.53					
HZS4.7N	B1	4.47	4.65	5	5	1.0	100	5
	B2	4.59	4.77					
	B3	4.71	4.91					
HZS5.1N	B1	4.85	5.03	5	5	1.5	70	5
	B2	4.97	5.18					
	B3	5.12	5.35					
HZS5.6N	B1	5.29	5.52	5	5	2.5	40	5
	B2	5.46	5.70					
	B3	5.64	5.88					
HZS6.2N	B1	5.81	6.06	5	5	3.0	30	5
	B2	5.99	6.24					
	B3	6.16	6.40					
HZS6.8N	B1	6.32	6.59	5	2	3.5	25	5
	B2	6.52	6.79					
	B3	6.70	6.97					

Note: 1. Tested with pulse (P_W = 40 ms)

(Ta = 25°C)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		V_Z (V)*1		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition
		Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)
HZS7.5N	B1	6.88	7.19	5	0.5	4.0	25	5
	B2	7.11	7.41					
	B3	7.33	7.64					
HZS8.2N	B1	7.56	7.90	5	0.5	5.0	20	5
	B2	7.82	8.15					
	B3	8.07	8.41					
HZS9.1N	B1	8.33	8.70	5	0.5	6.0	20	5
	B2	8.61	8.99					
	B3	8.89	9.29					
HZS10N	B1	9.19	9.59	5	0.2	7.0	20	5
	B2	9.48	9.90					
	B3	9.82	10.30					
HZS11N	B1	10.18	10.63	5	0.2	8.0	20	5
	B2	10.50	10.95					
	B3	10.82	11.26					
HZS12N	B1	11.13	11.63	5	0.2	9.0	25	5
	B2	11.50	11.92					
	B3	11.80	12.30					
HZS13N	B1	12.18	12.71	5	0.2	10	25	5
	B2	12.59	13.16					
	B3	13.03	13.62					
HZS15N	B1	13.48	14.09	5	0.2	11	25	5
	B2	13.95	14.56					
	B3	14.42	15.02					
HZS16N	B1	14.87	15.50	5	0.2	12	25	5
	B2	15.33	15.96					
	B3	15.79	16.50					
HZS18N	B1	16.34	17.06	5	0.2	13	30	5
	B2	16.90	17.67					
	B3	17.51	18.30					
HZS20N	B1	18.14	18.96	5	0.2	15	30	5
	B2	18.80	19.68					
	B3	19.52	20.45					
HZS22N	B1	20.23	21.08	5	0.2	17	30	5
	B2	20.76	21.65					
	B3	21.22	22.09					
	B4	21.68	22.61					
HZS24N	B1	22.26	23.12	5	0.2	19	35	5
	B2	22.75	23.73					
	B3	23.29	24.27					
	B4	23.81	24.81					
HZS27N	B1	24.26	25.52	5	0.2	21	45	5
	B2	24.97	26.26					
	B3	25.63	26.95					
	B4	26.29	27.64					

Note: 1. Tested with pulse (P_W = 40 ms)

(Ta = 25°C)

Type	Grade	Zener Voltage			Reverse Current		Dynamic Resistance	
		V_Z (V)*[1]		Test Condition	I_R (μA)	Test Condition	r_d (Ω)	Test Condition
		Min	Max	I_Z (mA)	Max	V_R (V)	Max	I_Z (mA)
HZS30N	B1	26.99	28.39	5	0.2	23	55	5
	B2	27.70	29.13					
	B3	28.36	29.82					
	B4	29.02	30.51					
HZS33N	B1	29.68	31.22	5	0.2	25	65	5
	B2	30.32	31.88					
	B3	30.90	32.50					
	B4	31.49	33.11					
HZS36N	B1	32.14	33.79	5	0.2	27	75	5
	B2	32.79	34.49					
	B3	33.40	35.13					
	B4	34.01	35.77					
HZS39N	B1	34.68	36.47	5	0.2	30	85	5
	B2	35.36	37.19					
	B3	36.00	37.85					
	B4	36.63	38.52					

Notes: 1. Tested with pulse (P_W = 40 ms).
2. Part No. is as follows: HZS2.0NB1, HZS2.0NB2, ••• HZS39NB4.

Main Characteristic

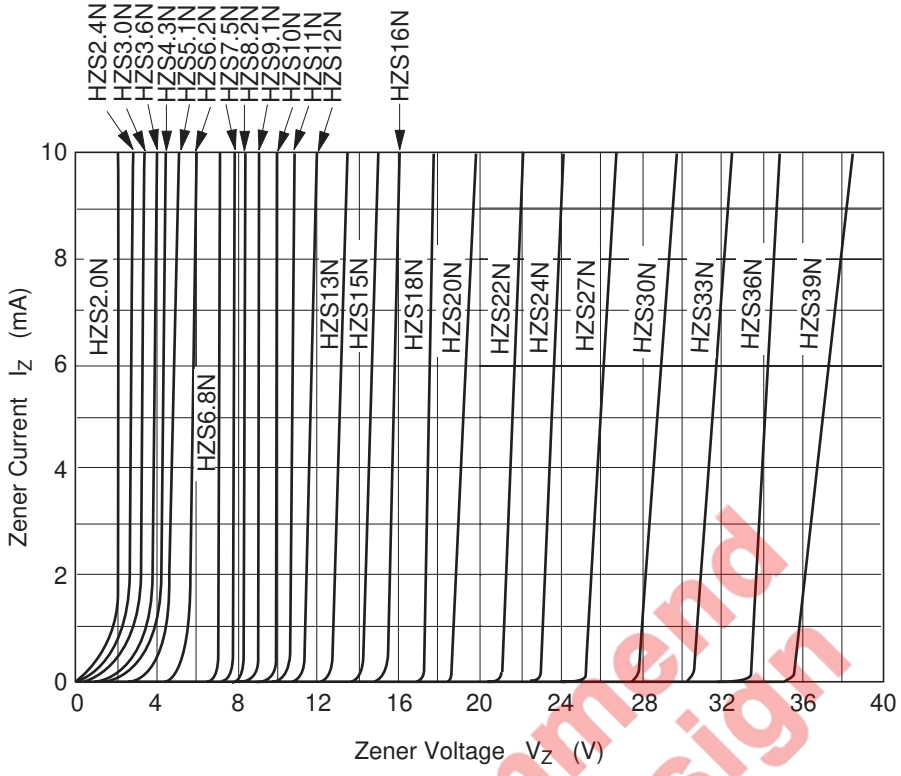


Fig.1 Zener current vs. Zener voltage

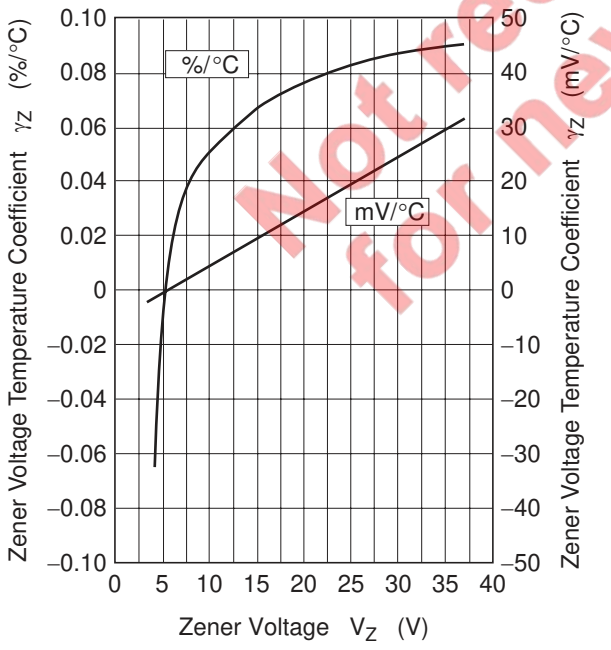


Fig.2 Temperature Coefficient vs. Zener voltage

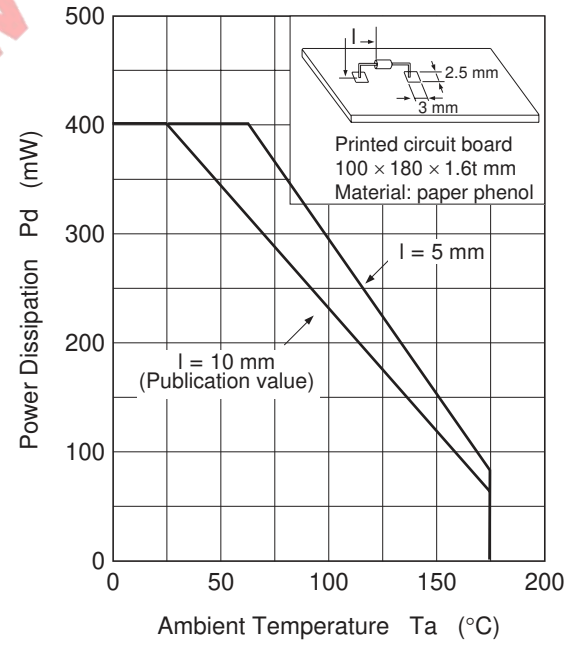
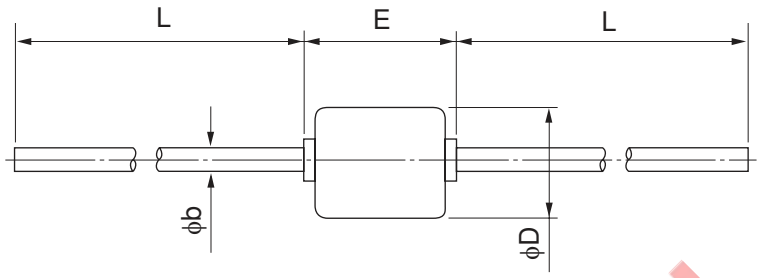


Fig.3 Power Dissipation vs. Ambient Temperature

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
MHD	—	GRZZ0002ZC-A	MHD / MHDV	0.084g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
ϕb	-	0.4	-
ϕD	-	2.0	-
E	-	-	2.4
L	26.0	-	-

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

RENESAS SALES OFFICES

http://www.renesas.com

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Renesas Technology America, Inc.
450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology (Shanghai) Co., Ltd.
Unit 204, 205, AZIACenter, No.1233 Lujiazui Ring Rd, Pudong District, Shanghai, China 200120
Tel: <86> (21) 5877-1818, Fax: <86> (21) 6887-7858/7898

Renesas Technology Hong Kong Ltd.
7th Floor, North Tower, World Finance Centre, Harbour City, Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2377-3473

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 3518-3399

Renesas Technology Singapore Pte. Ltd.
1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.
Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> (2) 796-3115, Fax: <82> (2) 796-2145

Renesas Technology Malaysia Sdn. Bhd
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510

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