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 Series

Silicon Planar Zener Diode for Stabilized Power Supply

REJ03G0184-0500
Rev.5.00
Oct 29, 2007

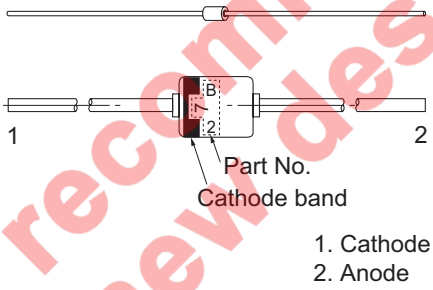
Features

- Low leakage, low zener impedance and maximum power dissipation of 400 mW are ideally suited for stabilized power supply, etc.
- Wide spectrum from 1.6 V through 38 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 Series	Lake blue	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	A1	1.6	1.8	5	25	0.5	100	5
	A2	1.7	1.9					
	A3	1.8	2.0					
	B1	1.9	2.1	5	5	0.5	100	5
	B2	2.0	2.2					
	B3	2.1	2.3					
	C1	2.2	2.4					
	C2	2.3	2.5					
	C3	2.4	2.6					
HZS3	A1	2.5	2.7	5	5	0.5	100	5
	A2	2.6	2.8					
	A3	2.7	2.9					
	B1	2.8	3.0					
	B2	2.9	3.1					
	B3	3.0	3.2					
	C1	3.1	3.3					
	C2	3.2	3.4					
	C3	3.3	3.5					
HZS4	A1	3.4	3.6	5	5	1.0	100	5
	A2	3.5	3.7					
	A3	3.6	3.8					
	B1	3.7	3.9					
	B2	3.8	4.0					
	B3	3.9	4.1					
	C1	4.0	4.2					
	C2	4.1	4.3					
	C3	4.2	4.4					
HZS5	A1	4.3	4.5	5	5	1.5	100	5
	A2	4.4	4.6					
	A3	4.5	4.7					
	B1	4.6	4.8					
	B2	4.7	4.9					
	B3	4.8	5.0					

Note: 1. Tested with DC.

(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)
HZS5	C1	4.9	5.1	5	5	1.5	100	5
	C2	5.0	5.2					
	C3	5.1	5.3					
HZS6	A1	5.2	5.5	5	5	2.0	40	5
	A2	5.3	5.6					
	A3	5.4	5.7					
	B1	5.5	5.8					
	B2	5.6	5.9					
	B3	5.7	6.0					
	C1	5.8	6.1					
	C2	6.0	6.3					
	C3	6.1	6.4					
HZS7	A1	6.3	6.6	5	1	3.5	15	5
	A2	6.4	6.7					
	A3	6.6	6.9					
	B1	6.7	7.0					
	B2	6.9	7.2					
	B3	7.0	7.3					
	C1	7.2	7.6					
	C2	7.3	7.7					
	C3	7.5	7.9					
HZS9	A1	7.7	8.1	5	1	5.0	20	5
	A2	7.9	8.3					
	A3	8.1	8.5					
	B1	8.3	8.7					
	B2	8.5	8.9					
	B3	8.7	9.1					
	C1	8.9	9.3					
	C2	9.1	9.5					
	C3	9.3	9.7					
HZS11	A1	9.5	9.9	5	1	7.5	25	5
	A2	9.7	10.1					
	A3	9.9	10.3					
	B1	10.2	10.6					
	B2	10.4	10.8					
	B3	10.7	11.1					
	C1	10.9	11.3					
	C2	11.1	11.6					
	C3	11.4	11.9					
HZS12	A1	11.6	12.1	5	1	9.5	35	5
	A2	11.9	12.4					
	A3	12.2	12.7					
	B1	12.4	12.9					
	B2	12.6	13.1					
	B3	12.9	13.4					

Note: 1. Tested with DC.

(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)
HZS12	C1	13.2	13.7	5	1	9.5	35	5
	C2	13.5	14.0					
	C3	13.8	14.3					
HZS15	-1	14.1	14.7	5	1	11.0	40	5
	-2	14.5	15.1					
	-3	14.9	15.5					
HZS16	-1	15.3	15.9	5	1	12.0	45	5
	-2	15.7	16.5					
	-3	16.3	17.1					
HZS18	-1	16.9	17.7	5	1	13.0	55	5
	-2	17.5	18.3					
	-3	18.1	19.0					
HZS20	-1	18.8	19.7	2	1	15.0	60	2
	-2	19.5	20.4					
	-3	20.2	21.1					
HZS22	-1	20.9	21.9	2	1	17.0	65	2
	-2	21.6	22.6					
	-3	22.3	23.3					
HZS24	-1	22.9	24.0	2	1	19.0	70	2
	-2	23.6	24.7					
	-3	24.3	25.5					
HZS27	-1	25.2	26.6	2	1	21.0	80	2
	-2	26.2	27.6					
	-3	27.2	28.6					
HZS30	-1	28.2	29.6	2	1	23.0	100	2
	-2	29.2	30.6					
	-3	30.2	31.6					
HZS33	-1	31.2	32.6	2	1	25.0	120	2
	-2	32.2	33.6					
	-3	33.2	34.6					
HZS36	-1	34.2	35.7	2	1	27.0	140	2
	-2	35.3	36.8					
	-3	36.4	38.0					

Notes: 1. Tested with DC.
2. Type No. is as follows; HZS2B1, HZS2B2, HZS36-3.

Main Characteristic

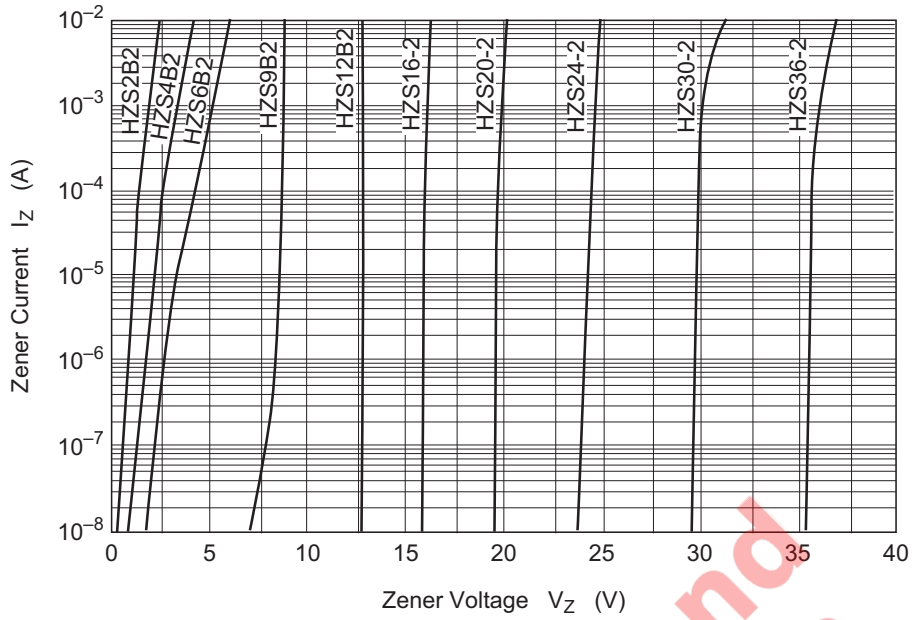


Fig.1 Zener current vs. Zener voltage

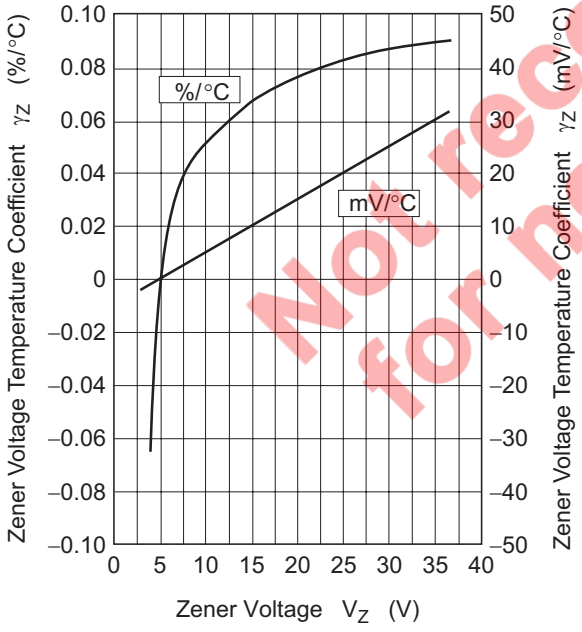


Fig.2 Temperature Coefficient vs. Zener voltage

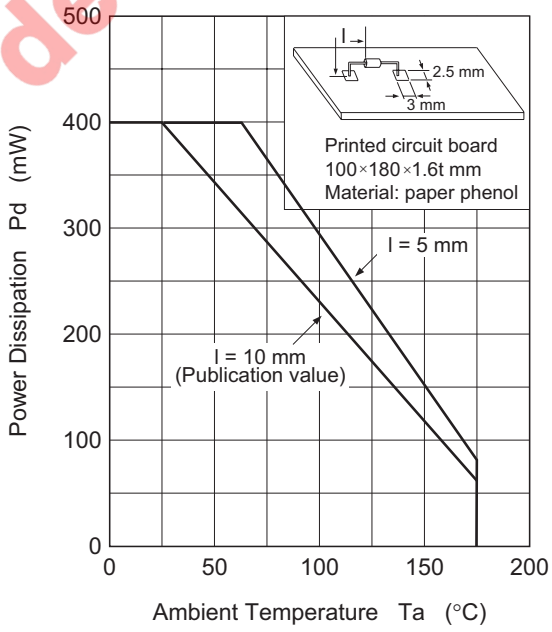
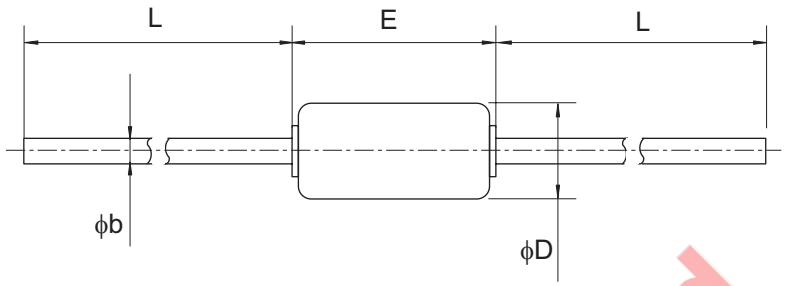


Fig.3 Power Dissipation vs. Ambient Temperature

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	-	-

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