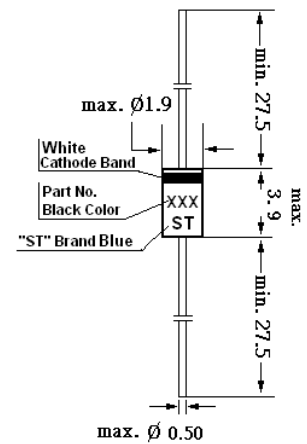


# HS Series

## SILICON PLANAR ZENER DIODES



Glass case JEDEC DO-35

Dimensions in mm

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

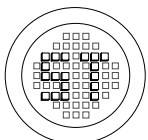
	Symbol	Value	Unit
Zener Current see Table "Characteristics"			
Power Dissipation	$P_{\text{tot}}$	500 <sup>1)</sup>	mW
Junction Temperature	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	$T_s$	-55 to +175	$^\circ\text{C}$

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.

### Characteristics at $T_{\text{amb}} = 25^\circ\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance Junction to Ambient Air	$R_{\text{thA}}$	-	-	0.3 <sup>1)</sup>	K/mW

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



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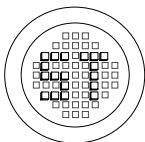
# HS Series

## Characteristics at $T_a = 25^\circ\text{C}$

TYPE	Zener Voltage			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ (uA) Max.	$V_R$ (V)
2.0HS	1.88	2.20	5	100	5	120	0.5
2.0HSA	1.88	2.10					
2.0HSB	2.02	2.20					
2.2HS	2.12	2.41	5	100	5	120	0.7
2.2HSA	2.12	2.30					
2.2HSB	2.22	2.41					
2.4HS	2.33	2.63	5	100	5	120	1
2.4HSA	2.33	2.52					
2.4HSB	2.43	2.63					
2.7HS	2.54	2.91	5	110	5	100	1
2.7HSA	2.54	2.75					
2.7HSB	2.69	2.91					
3.0HS	2.85	3.22	5	120	5	50	1
3.0HSA	2.85	3.07					
3.0HSB	3.01	3.22					
3.3HS	3.16	3.53	5	120	5	20	1
3.3HSA	3.16	3.38					
3.3HSB	3.32	3.53					
3.6HS	3.47	3.83	5	120	5	10	1
3.6HSA	3.47	3.68					
3.6HSB	3.62	3.83					
3.9HS	3.77	4.14	5	120	5	5	1
3.9HSA	3.77	3.98					
3.9HSB	3.92	4.14					
4.3HS	4.05	4.53	5	120	5	5	1
4.3HSA	4.05	4.26					
4.3HSB	4.20	4.40					
4.3HSC	4.34	4.53					
4.7HS	4.47	4.91	5	100	5	5	1
4.7HSA	4.47	4.65					
4.7HSB	4.59	4.77					
4.7HSC	4.71	4.91					
5.1HS	4.85	5.35	5	70	5	5	1.5
5.1HSA	4.85	5.03					
5.1HSB	4.97	5.18					
5.1HSC	5.12	5.35					

1) Tested with pulse  $t_p = 20\text{ms}$

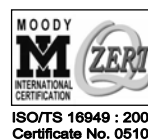
2) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



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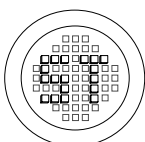
# HS Series

## Characteristics at $T_a = 25^\circ\text{C}$

TYPE	Zener Voltage			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ (uA) Max.	$V_R$ (V)
5.6HS	5.29	5.88	5	40	5	5	2.5
5.6HSA	5.29	5.52					
5.6HSB	5.46	5.70					
5.6HSC	5.64	5.88					
6.2HS	5.81	6.40	5	30	5	5	3
6.2HSA	5.81	6.06					
6.2HSB	5.99	6.24					
6.2HSC	6.16	6.40					
6.8HS	6.32	6.97	5	25	5	2	3.5
6.8HSA	6.32	6.59					
6.8HSB	6.52	6.79					
6.8HSC	6.70	6.97					
7.5HS	6.88	7.64	5	25	5	0.5	4
7.5HSA	6.88	7.19					
7.5HSB	7.11	7.41					
7.5HSC	7.33	7.64					
8.2HS	7.56	8.41	5	20	5	0.5	5
8.2HSA	7.56	7.90					
8.2HSB	7.82	8.15					
8.2HSC	8.07	8.41					
9.1HS	8.33	9.29	5	20	5	0.5	6
9.1HSA	8.33	8.70					
9.1HSB	8.61	8.99					
9.1HSC	8.89	9.29					
10HS	9.19	10.3	5	20	5	0.2	7
10HSA	9.19	9.59					
10HSB	9.48	9.90					
10HSC	9.82	10.3					

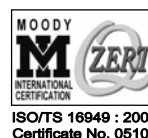
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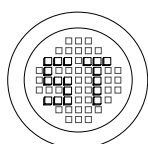
# HS Series

## Characteristics at $T_a = 25^\circ\text{C}$

TYPE	Zener Voltage			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ (uA) Max.	$V_R$ (V)
11HS	10.18	11.26	5	20	5	0.2	8
11HSA	10.18	10.63					
11HSB	10.50	10.95					
11HSC	10.82	11.26					
12HS	11.13	12.30	5	25	5	0.2	9
12HSA	11.13	11.63					
12HSB	11.50	11.92					
12HSC	11.80	12.30					
13HS	12.18	13.62	5	25	5	0.2	10
13HSA	12.18	12.71					
13HSB	12.59	13.16					
13HSC	13.03	13.62					
15HS	13.48	15.02	5	25	5	0.2	11
15HSA	13.48	14.09					
15HSB	13.95	14.56					
15HSC	14.42	15.02					
16HS	14.87	16.50	5	25	5	0.2	12
16HSA	14.87	15.50					
16HSB	15.33	15.96					
16HSC	15.79	16.50					
18HS	16.34	18.30	5	30	5	0.2	13
18HSA	16.34	17.06					
18HSB	16.90	17.67					
18HSC	17.51	18.30					
20HS	18.14	20.45	5	30	5	0.2	15
20HSA	18.14	18.96					
20HSB	18.80	19.68					
20HSC	19.52	20.45					
22HS	20.23	22.61	5	30	5	0.2	17
22HSA	20.23	21.08					
22HSB	20.76	21.65					
22HSC	21.22	22.09					
22HSD	21.68	22.61					
24HS	22.26	24.81	5	35	5	0.2	19
24HSA	22.26	23.12					
24HSB	22.75	23.73					
24HSC	23.29	24.27					
24HSD	23.81	24.81					

1) Tested with pulse  $t_p = 20\text{ms}$

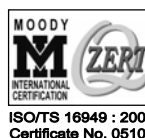
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ISO/TS 16949 : 2002  
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ISO 14001  
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ISO 9001 : 2000  
Certificate No. 559-1996-AL-RSC-PM

Dated : 22/07/2005

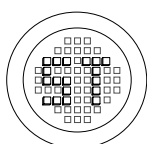
# HS Series

## Characteristics at $T_a = 25^\circ\text{C}$

TYPE	Zener Voltage			Dynamic Resistance		Reverse Leakage Current ( $I_R$ at $V_R$ )	
	Min. (V)	Max. (V)	$I_{ZT}$ (mA)	Ohm at $I_{ZT}$	$I_{ZT}$ (mA)	$I_R$ (uA) Max.	$V_R$ (V)
27HS	24.26	27.64	5	45	5	0.2	21
27HSA	24.26	25.52					
27HSB	24.97	26.26					
27HSC	25.63	26.95					
27HSD	26.29	27.64					
30HS	26.99	30.51	5	55	5	0.2	23
30HSA	26.99	28.39					
30HSB	27.70	29.13					
30HSC	28.36	29.82					
30HSD	29.02	30.51					
33HS	29.68	33.11	5	65	5	0.2	25
33HSA	29.68	31.22					
33HSB	30.32	31.88					
33HSC	30.90	32.50					
33HSD	31.49	33.11					
36HS	32.14	35.77	5	75	5	0.2	27
36HSA	32.14	33.79					
36HSB	32.79	34.49					
39HSC	33.40	35.13					
36HSD	34.01	35.77					
39HS	34.68	38.52	5	85	5	0.2	30
39HSA	34.68	36.47					
39HSB	35.36	37.19					
39HSC	36.00	37.85					
39HSD	36.63	38.52					

1) Tested with pulse  $t_p = 20\text{ms}$

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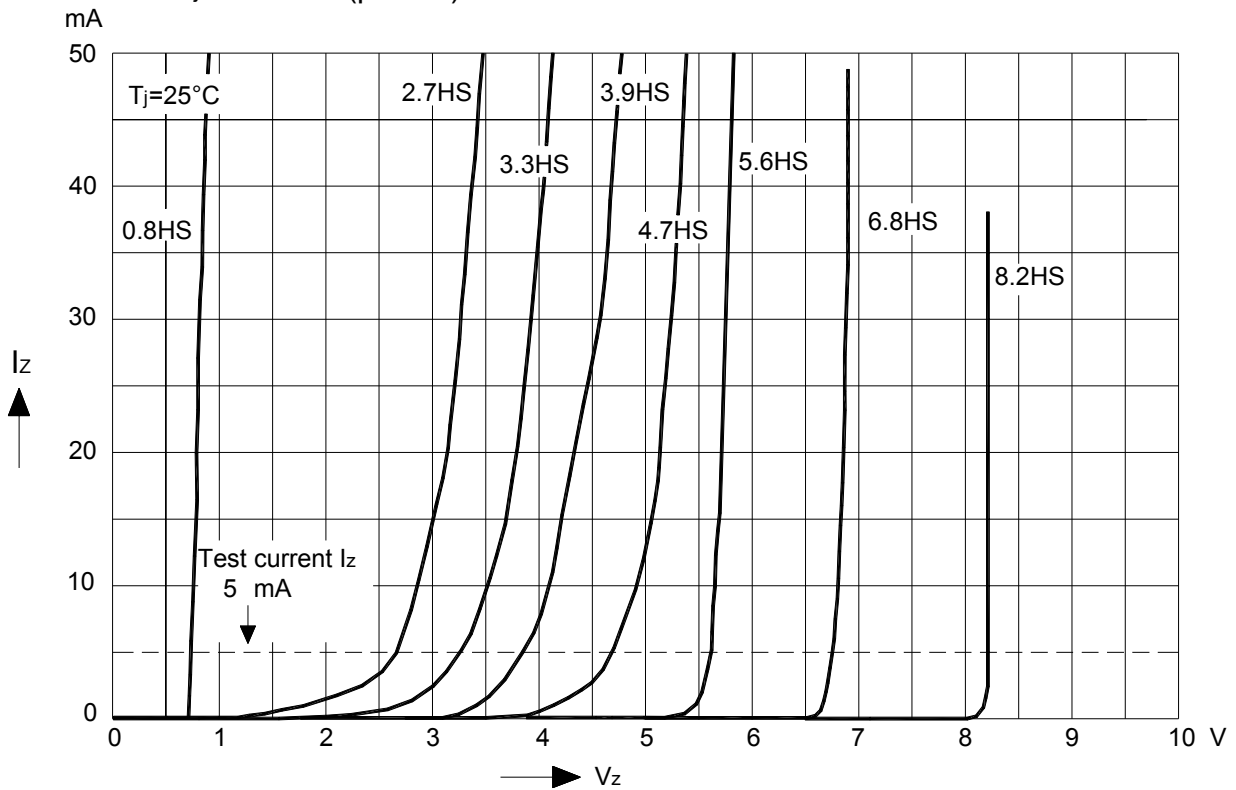
ISO 14001  
Certificate No. 7116



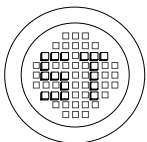
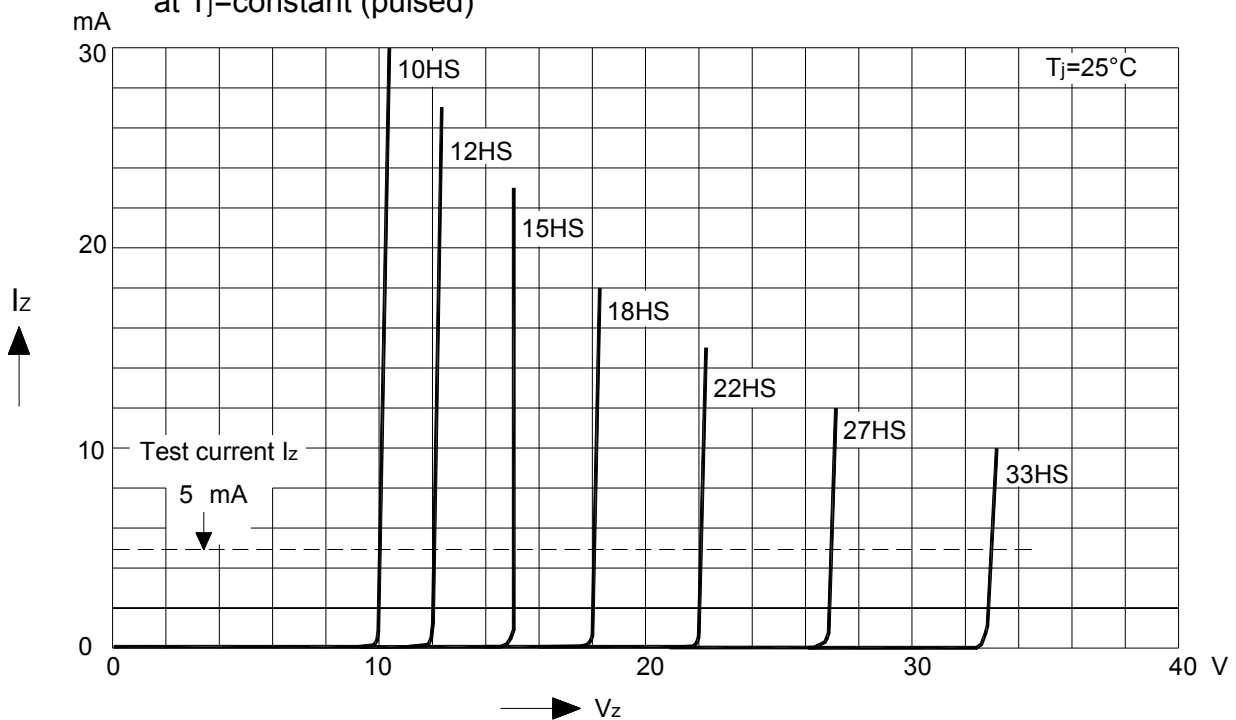
ISO 9001 : 2000  
Certificate No. 559-199-AL-R0C-004

Dated : 22/07/2005

## Breakdown Characteristics at $T_j = \text{constant}$ (pulsed)



## Breakdown Characteristics at $T_j = \text{constant}$ (pulsed)



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