

## ZENER DIODES

POWER DISSIPATION: 1.0 W

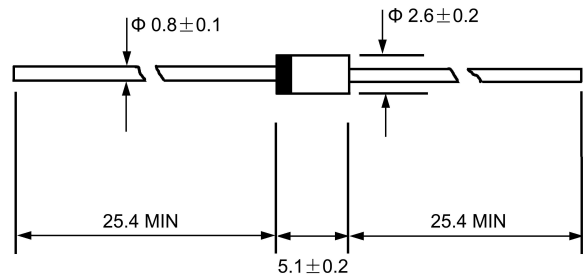
### FEATURES

- ◇ Silicon planar power zener diodes
- ◇ For use in stabilizing and clipping circuits with high power rating.
- ◇ Standard zener voltage tolerance is  $\pm 10\%$ . Add suffix "A" for  $\pm 5\%$  tolerance. Other zener voltage and tolerances are available upon request.

### MECHANICAL DATA

- ◇ Case: JEDEC DO--41, molded plastic
- ◇ Terminals: Solderable per MIL-STD-202, method 208
- ◇ Polarity: Cathode band
- ◇ Marking: Type number
- ◇ Weight: 0.012 ounces, 0.34 grams

### DO - 41



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Zener current (see Table "Characteristics")			
Power dissipation at $T_{amb}=25^{\circ}\text{C}$	$P_{tot}$	1.0 <sup>1)</sup>	W
Junction temperature	$T_J$	-40---+150	°C
Storage temperature range	$T_s$	-40---+150	°C

NOTES: (1) Valid provided that leads at a distance of 10 mm from case are kept at ambient temperature.

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# ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

TYPE	ZENER CHARACTERISTICS					TEMPERATURE COEFFICIENT OF ZENER VOLTAGE $\alpha_T$ (mV / °C)		FORWARD VOLTAGE		REVERSE CURRENT	
	ZENER VOLTAGE $V_Z$ (V)			ZENER IMPEDANCE $r_d$ ( $\Omega$ )	MEASUREMENT CURRENT $I_Z$ (mA)			$V_F$ (V)	MEASUREMENT CURRENT $I_F$ (A)	$I_R$ ( $\mu$ A)	MEASUREMENT VOLTAGE $V_R$ (V)
	MIN.	TYP.	MAX.			MAX.	TYP.				
1Z6.2	5.6	6.2	6.8	60	10	1.5	2	1.2	0.2	10	3
1Z6.8	6.2	6.8	7.4	60	10	3	4	1.2	0.2	10	2
1Z6.8A	6.45	6.8	7.14								
1Z7.5	6.8	7.5	8.3	30	10	4	5	1.2	0.2	10	4.5
1Z7.5A	7.13	7.5	7.87								
1Z8.2	7.4	8.2	9.1	30	10	4	6	1.2	0.2	10	4.9
1Z8.2A	7.79	8.2	86.1								
1Z9.1	8.2	9.1	10.1	30	10	5	8	1.2	0.2	10	5.5
1Z9.1A	8.65	9.1	9.55								
1Z10	9.0	10	11.0	30	10	6	9	1.2	0.2	10	6
1Z10A	9.5	10	10.5								
1Z11	9.9	11	12.1	30	10	7	11	1.2	0.2	10	7
1Z11A	10.5	11	11.5								
1Z12	10.8	12	13.2	30	10	8	13	1.2	0.2	10	8
1Z12A	11.4	12	12.6								
1Z13	11.7	13	14.3	30	10	9	14	1.2	0.2	10	9
1Z13A	12.4	13	13.6								
1Z15	13.5	15	16.5	30	10	11	17	1.2	0.2	10	10
1Z15A	14.3	15	15.8								
1Z16	14.4	16	17.6	30	10	12	19	1.2	0.2	10	11
1Z16A	15.2	16	16.8								
1Z18	16.2	18	19.8	30	10	14	23	1.2	0.2	10	13
1Z18A	17.1	18	18.9								
1Z20	18.0	20	22.0	30	10	16	26	1.2	0.2	10	14
1Z20A	19.0	20	21								
1Z22	19.8	22	24.2	30	10	18	28	1.2	0.2	10	16
1Z22A	20.9	22	23.1								
1Z24	21.6	24	26.4	30	10	20	32	1.2	0.2	10	17
1Z24A	22.8	24	25.2								
1Z27	24.3	27	29.7	30	10	23	36	1.2	0.2	10	19
1Z27A	25.7	27	28.3								
1Z30	27.0	30	33.0	30	10	25	40	1.2	0.2	10	21
1Z30A	28.5	30	31.5								
1Z33	29.7	33	36.3	30	10	26	41	1.2	0.2	10	26.4
1Z36	32.4	36	39.6	30	9	28	45	1.2	0.2	10	28.8
1Z43	38.7	43	47.3	40	7	33	53	1.2	0.2	10	34.4
1Z47	42.3	47	51.7	65	6	38	60	1.2	0.2	10	37.6

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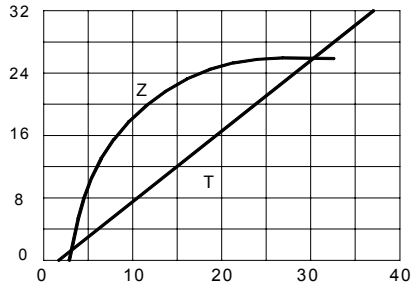
# ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

TYPE	ZENER CHARACTERISTICS					TEMPERATURE COEFFICIENT OF ZENER VOLTAGE $\alpha_T$ (mV / °C)		FORWARD VOLTAGE		REVERSE CURRENT	
	ZENER VOLTAGE $V_Z$ (V)			ZENER IMPEDANCE $r_d$ ( $\Omega$ )	MEASUREMENT CURRENT $I_Z$ (mA)			$V_F$ (V)	MEASUREMENT CURRENT $I_F$ (A)	$I_R$ ( $\mu$ A)	MEASUREMENT VOLTAGE $V_R$ (V)
	MIN.	TYP.	MAX.	MAX.		TYP.	MAX.	MAX.		MAX.	
1Z51	45.9	51	56.1	65	6	43	68	1.2	0.2	10	40.8
1Z68	61.2	68	74.8	120	4	57	90	1.2	0.2	10	54.4
1Z75	67.5	75	82.5	150	4	66	104	1.2	0.2	10	60
1Z82	73.8	82	90.2	170	3	71	113	1.2	0.2	10	65.4
1Z100	90	100	110	300	3	87	138	1.2	0.2	10	80
1Z110	99	110	121	300	3	96	152	1.2	0.2	10	88
1Z150	135	150	165	450	2	136	212	1.2	0.2	10	120
1Z180	162	180	198	500	1.5	161	255	1.2	0.2	10	144
1Z330	297	330	363	5000	1	297	472	1.2	0.2	10	264
1Z330A	313.5	330	346.5								
1Z390	351	390	429	10000	0.5	350	555	1.2	0.2	10	312

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TEMPERATURE COEFFICIENT OF  
ZENER VOLTAGE AT (mV/°C)

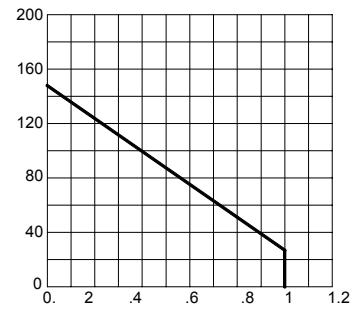
**FIG.1 -- AT  $Y_Z - V_Z$**



ZENER VOLTAGE  $V_Z$  (V)

MAXIMUM ALLOWABLE AMBIENT  
TEMPERATURE  $T_{A MAX}$  (°C)

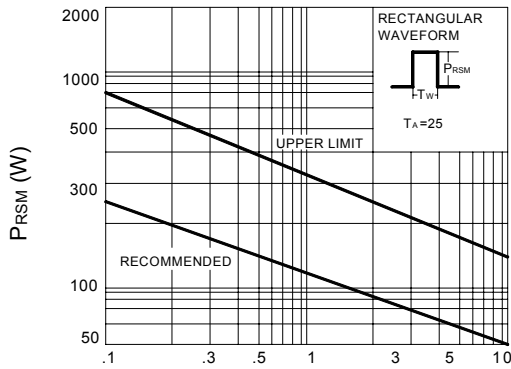
**FIG.2 --  $T_{A MAX} - P$**



POWER DISSIPATION  $P$  (W)

PEAK REVERSE POWER DISSIPATION

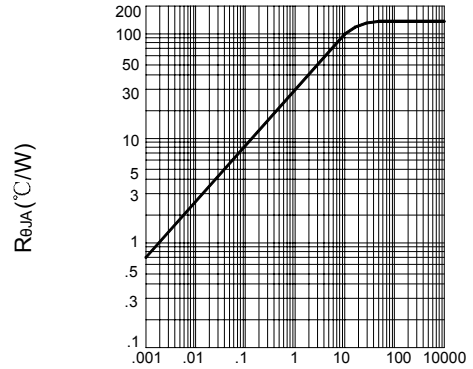
**FIG.3 --  $P_{RSM} - t_w$**



PULSE WIDTH  $t_w$  (ms)

TRANSIENT THERMAL IMPEDANCE

**FIG.4 --  $R_{\theta JA} - T$**



TIME  $T$  (S)