

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

1N4678 THRU 1N4717

500 mW LOW LEVEL ZENER DIODE  
1.8 VOLTS TO 43 VOLTS  
5% TOLERANCE

DO-35 CASE

## DESCRIPTION

The Central Semiconductor 1n4678 Series types are Silicon Zener Diodes designed for applications requiring an extremely low operating current (50 $\mu$ A), and low leakage.

## ABSOLUTE MAXIMUM RATINGS

Power Dissipation (@  $T_L \leq 75^\circ\text{C}$ )  
Operating and Storage Temperature  
Tolerance (No Suffix)  
Tolerance "C Suffix"  
Tolerance "D Suffix"

## SYMBOL

$P_D$   
 $T_J, T_{STG}$

500  
-65 TO +200  
 $\pm 5$   
 $\pm 2$   
 $\pm 1$

## UNIT

mW  
 $^\circ\text{C}$   
%  
%  
%

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ ), $V_F = 1.5\text{V MAX @ } I_F = 100\text{mA}$ FOR ALL TYPES

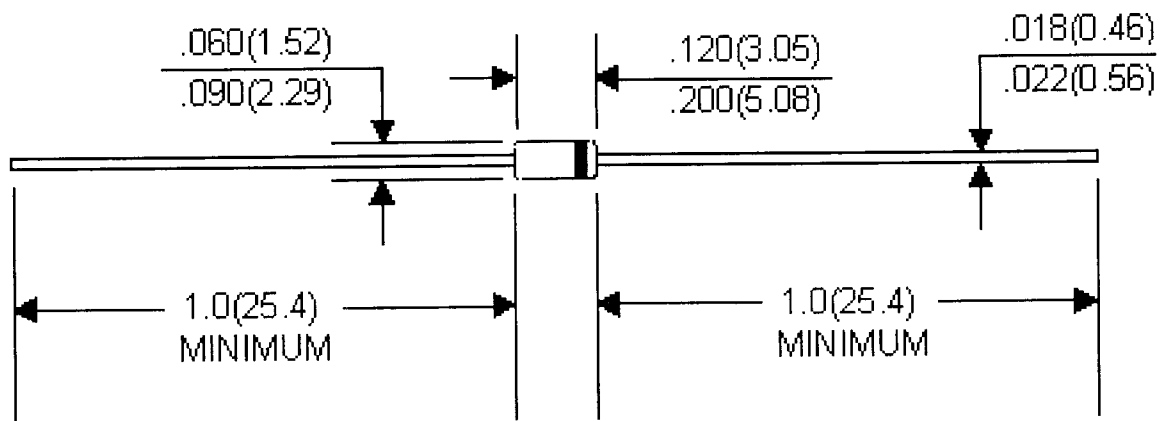
TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM VOLTAGE CHANGE *	MAXIMUM REGULATOR CURRENT
	NOM	MIN	MAX	$I_{ZT}$	$I_R$ @	$V_R$	$\Delta V_Z$	$I_{ZM}$
	VOLTS	VOLTS	VOLTS	$\mu\text{A}$	$\mu\text{A}$	VOLTS	VOLTS	mA
1N4678	1.8	1.710	1.890	50	7.5	1.0	0.70	120.0
1N4679	2.0	1.900	2.100	50	5.0	1.0	0.70	110.0
1N4680	2.2	2.090	2.310	50	4.0	1.0	0.75	100.0
1N4681	2.4	2.280	2.520	50	2.0	1.0	0.80	95.0
1N4682	2.7	2.565	2.835	50	1.0	1.0	0.85	90.0
1N4683	3.0	2.850	3.150	50	0.8	1.0	0.90	85.0
1N4684	3.3	3.135	3.465	50	7.5	1.5	0.95	80.0
1N4685	3.6	3.420	3.780	50	7.5	2.0	0.95	75.0
1N4686	3.9	3.705	4.095	50	5.0	2.0	0.97	70.0
1N4687	4.3	4.085	4.515	50	4.0	2.0	0.99	65.0
1N4688	4.7	4.465	4.935	50	10	3.0	0.99	60.0
1N4689	5.1	4.845	5.355	50	10	3.0	0.97	55.0
1N4690	5.6	5.320	5.880	50	10	4.0	0.96	50.0
1N4691	6.2	5.890	6.510	50	10	5.0	0.95	45.0
1N4692	6.8	6.460	7.140	50	10	5.1	0.90	35.0
1N4693	7.5	7.125	7.875	50	10	5.7	0.75	31.8
1N4694	8.2	7.790	8.610	50	1.0	6.2	0.50	29.0
1N4695	8.7	8.265	9.135	50	1.0	6.6	0.10	27.6
1N4696	9.1	8.645	9.555	50	1.0	6.9	0.08	26.2
1N4697	10	9.500	10.50	50	1.0	7.6	0.10	24.8

\*  $\Delta V_Z = V_Z @ 100\mu\text{A}$  Minus  $V_Z @ 10\mu\text{A}$

TYPE	ZENER VOLTAGE $V_Z @ I_{ZT}$			TEST CURRENT	MAXIMUM REVERSE LEAKAGE CURRENT		MAXIMUM VOLTAGE CHANGE *	MAXIMUM REGULATOR CURRENT
	NOM	MIN	MAX	$I_{ZT}$	$I_R$	@ $V_R$	$\Delta V_Z$	$I_{ZM}$
	VOLTS	VOLTS	VOLTS	$\mu A$	$\mu A$	VOLTS	VOLTS	mA
1N4698	11	10.45	11.55	50	0.05	8.4	0.11	21.6
1N4699	12	11.40	12.60	50	0.05	9.1	0.12	20.4
1N4700	13	12.35	13.65	50	0.05	9.8	0.13	19.0
1N4701	14	13.30	14.70	50	0.05	10.6	0.14	17.5
1N4702	15	14.25	15.75	50	0.05	11.4	0.15	16.3
1N4703	16	15.20	16.80	50	0.05	12.1	0.16	15.4
1N4704	17	16.15	17.85	50	0.05	12.9	0.17	14.5
1N4705	18	17.10	18.90	50	0.05	13.6	0.18	13.2
1N4706	19	18.05	19.95	50	0.05	14.4	0.19	12.5
1N4707	20	19.00	21.00	50	0.01	15.2	0.20	11.9
1N4708	22	20.90	23.10	50	0.01	16.7	0.22	10.8
1N4709	24	22.80	25.20	50	0.01	18.2	0.24	9.9
1N4710	25	23.75	26.25	50	0.01	19.0	0.25	9.5
1N4711	27	25.65	28.35	50	0.01	20.4	0.27	8.8
1N4712	28	26.60	29.40	50	0.01	21.2	0.28	8.5
1N4713	30	28.50	31.50	50	0.01	22.8	0.30	7.9
1N4714	33	31.35	34.65	50	0.01	25.0	0.33	7.2
1N4715	36	34.20	37.80	50	0.01	27.3	0.36	6.6
1N4716	39	37.05	40.95	50	0.01	29.6	0.39	6.1
1N4717	43	40.85	45.15	50	0.01	32.6	0.43	5.5

\*  $\Delta V_Z = V_Z @ 100\mu A$  Minus  $V_Z @ 10\mu A$

### DO-35 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

**Central**<sup>™</sup>  
Semiconductor Corp.