

# Low Voltage Avalanche Zener Diodes

1N5518 -  
1N5546  
1N6082 -  
1N6091

## HIGH PERFORMANCE: LOW NOISE, LOW LEAKAGE

Type Number (Note 1)	Nominal Zener Voltage Vz @ Iz1 (volts)	Test Current Iz1 (mA)	Max Zener Impedance (Note 2) Zzt @ Iz1 (ohms)	Max Reverse Leakage Current		Max Noise Density at (Note 4) Iz = 250 $\mu$ A (ND $\mu$ V/ $\sqrt$ Hz)	Max Regulation Factor (Note 5)		Max Regulator Current IzM (mAdc)	Reverse Surge Current Ir (Note 6) (mA)	Max Temp. Coefficient (25 to 125 $^{\circ}$ C) (%/ $^{\circ}$ C)
				Ir ( $\mu$ Adc)	Vr (Volts)		$\Delta$ Vz (Volts)	IzL (mAdc)			
$\Delta$ 1N5518	3.3	20	26	5.0	0.9	0.5	0.90	2.0	115	1800	-.07
$\Delta$ 1N5519	3.6	20	24	3.0	0.9	0.5	0.90	2.0	105	1650	-.065
$\Delta$ 1N5520	3.9	20	22	1.0	0.9	0.5	0.85	2.0	98	1500	-.060
$\Delta$ 1N5521	4.3	20	18	3.0	1.0	0.5	0.75	2.0	88	1400	-.055 +.020
$\Delta$ 1N5522	4.7	10	22	2.0	1.5	0.5	0.60	1.0	81	1270	-.043 +.025
$\Delta$ 1N5523	5.1	5	26	2.0	2.0	0.5	0.65	0.25	75	1170	-.030 +.030
$\Delta$ 1N5524	5.6	3	30	2.0	3.0	1.0	0.30	0.25	68	1080	-.030 +.045
$\Delta$ 1N5525	6.2	1	30	1.0	4.5	1.0	0.20	0.01	61	965	.050
$\Delta$ 1N5526	6.8	1	30	1.0	5.5	1.0	0.10	0.01	56	870	.052
$\Delta$ 1N5527	7.5	1	35	0.5	6.0	2.0	0.05	0.01	51	810	.058
$\Delta$ 1N5528	8.2	1	40	0.5	6.5	4.0	0.05	0.01	46	740	.062
$\Delta$ 1N5529	9.1	1	45	0.1	7.0	4.0	0.05	0.01	42	650	.068
$\Delta$ 1N5530	10.0	1	60	0.05	8.0	4.0	0.10	0.01	38	600	.075
$\Delta$ 1N5531	11.0	1	80	0.05	9.0	5.0	0.20	0.01	35	540	.075
$\Delta$ 1N5532	12.0	1	90	0.05	9.5	10	0.20	0.01	32	500	.080
$\Delta$ 1N5533	13.0	1	90	0.01	10.5	15	0.20	0.01	29	470	.080
$\Delta$ 1N5534	14.0	1	100	0.01	11.5	20	0.20	0.01	27	850	.082
$\Delta$ 1N5535	15.0	1	100	0.01	12.5	20	0.20	0.01	25	800	.082
$\Delta$ 1N5536	16.0	1	100	0.01	13.0	20	0.20	0.01	24	750	.083
$\Delta$ 1N5537	17.0	1	100	0.01	14.0	20	0.20	0.01	22	700	.085
$\Delta$ 1N5538	18.0	1	100	0.01	15.0	20	0.20	0.01	21	665	.085
$\Delta$ 1N5539	19.0	1	100	0.01	16.0	20	0.20	0.01	20	630	.086
$\Delta$ 1N5540	20.0	1	100	0.01	17.0	20	0.20	0.01	19	600	.086
$\Delta$ 1N5541	22.0	1	100	0.01	18.0	20	0.25	0.01	17	541	.087
$\Delta$ 1N5542	24.0	1	100	0.01	20.0	20	0.30	0.01	16	511	.088
$\Delta$ 1N5543	25.0	1	100	0.01	21.0	20	0.35	0.01	15	481	.090
$\Delta$ 1N5544	28.0	1	100	0.01	23.0	20	0.40	0.01	14	431	.091
$\Delta$ 1N5545	30.0	1	100	0.01	24.0	20	0.45	0.01	13	400	.091
$\square$ 1N5546	33.0	1	100	0.01	28.0	20	0.50	0.01	12	360	.092
1N6082	4.3	20	18	2.0	1.5	1.0	0.75	2.0	81	990	-.055 +.020
1N6083	4.7	10	10	2.0	2.0	1.0	0.50	1.0	77	980	-.043 +.025
1N6084	5.1	5	10	2.0	3.0	1.0	0.30	0.25	72	960	-.030 +.030
1N6085	5.6	1	40	2.0	4.5	1.0	0.10	0.05	65	950	.040
1N6086	6.2	1	45	0.5	5.6	1.0	0.10	0.01	59	910	.050
1N6087	6.8	1	50	0.05	6.2	1.0	0.10	0.01	53	870	.060
1N6088	7.5	1	50	0.01	6.8	1.0	0.10	0.01	47	810	.064
1N6089	8.2	1	60	0.01	7.5	1.0	0.10	0.01	41	740	.067
1N6090	9.1	1	60	0.01	8.2	2.0	0.10	0.01	37	650	.070
1N6091	10.0	1	60	0.01	9.1	2.0	0.10	0.01	35	540	.075

*These low voltage avalanche zener diodes are specifically designed for low current, low noise applications. The very sharp knees, low leakages, and low impedances at low currents make them ideal for voltage regulation. They are planar devices, hermetically sealed in the popular DO-7 glass package to insure reliability. Also available in die form.*

### NOTES:

1. Suffix denotes Vz tolerance: none for  $\pm 20\%$ , A for  $\pm 10\%$ , B for  $\pm 5\%$ , C for  $\pm 2\%$ , D for  $\pm 1\%$ .
2. Measured with 10%, 60 Hz AC superimposed on Iz1.
3. Measured at Vr as shown in the table.
4. Measured from 1000 to 3000 Hz.
5. Difference between Vz at Iz1 and IzL.
6. Peak current superimposed on Iz1; device will withstand a total of five surges at one minute intervals, each surge being a  $1/2$  square wave pulse of 8.0 msec duration or an equivalent  $1/2$  sine wave with the same effective rms current.

### NOTES:

All types  $\pm 5\%$  tolerance.

$\Delta$  Denotes military approval.

$\square$  Denotes military approval in process.