

# KNOX SEMICONDUCTOR, INC.

## LOW LEVEL ZENER DIODES ULTRA-LOW CURRENT: 50 $\mu$ A - LOW LEAKAGE 1N4678 - 1N4714

| TYPE NUMBER | NOM ZENER VOLTAGE<br>$V_z$ @ 50 $\mu$ A<br>(VOLTS) | MAX REVERSE LEAKAGE CURRENT<br>$I_r$ @ $V_r$<br>( $\mu$ Adc) (Vdc) |      | MAX REGULATION FACTOR 100 $\mu$ Adc TO 10 $\mu$ Adc<br>$\Delta V_z$ (VOLTS) | MAX REGULATOR CURRENT $I_{zm}$<br>(mAdc) |
|-------------|--|--|------|---|--|
| 1N4678      | 1.8  | 7.5  | 1.0  | 0.70  | 120.0                                    |
| 1N4679      | 2.0  | 5.0  | 1.0  | 0.70  | 110.0                                    |
| 1N4680      | 2.2  | 4.0  | 1.0  | 0.75  | 100.0                                    |
| 1N4681      | 2.4  | 2.0  | 1.0  | 0.80  | 95.0                                     |
| 1N4682      | 2.7  | 1.0  | 1.0  | 0.85  | 90.0                                     |
| 1N4683      | 3.0  | 0.8  | 1.0  | 0.90  | 85.0                                     |
| 1N4684      | 3.3  | 7.5  | 1.5  | 0.95  | 80.0                                     |
| 1N4685      | 3.6  | 7.5  | 2.0  | 0.95  | 75.0                                     |
| 1N4686      | 3.9  | 5.0  | 2.0  | 0.97  | 70.0                                     |
| 1N4687      | 4.3  | 4.0  | 2.0  | 0.99  | 65.0                                     |
| 1N4688      | 4.7  | 10.0   | 3.0  | 0.99  | 60.0                                     |
| 1N4689      | 5.1  | 10.0   | 3.0  | 0.97  | 55.0                                     |
| 1N4690      | 5.6  | 10.0   | 4.0  | 0.96  | 50.0                                     |
| 1N4691      | 6.2  | 10.0   | 5.0  | 0.95  | 45.0                                     |
| 1N4692      | 6.8  | 10.0   | 5.1  | 0.90  | 35.0                                     |
| 1N4693      | 7.5  | 10.0   | 5.7  | 0.75  | 31.8                                     |
| 1N4694      | 8.2  | 1.0  | 6.2  | 0.50  | 29.0                                     |
| 1N4695      | 8.7  | 1.0  | 6.6  | 0.10  | 27.4                                     |
| 1N4696      | 9.1  | 1.0  | 6.9  | 0.08  | 26.2                                     |
| 1N4697      | 10.0   | 1.0  | 7.6  | 0.10  | 24.8                                     |
| 1N4698      | 11.0   | 0.05   | 8.4  | 0.11  | 21.6                                     |
| 1N4699      | 12.0   | 0.05   | 9.1  | 0.12  | 20.4                                     |
| 1N4700      | 13.0   | 0.05   | 9.8  | 0.13  | 19.0                                     |
| 1N4701      | 14.0   | 0.05   | 10.6 | 0.14  | 17.5                                     |
| 1N4702      | 15.0   | 0.05   | 11.4 | 0.15  | 16.3                                     |
| 1N4703      | 16.0   | 0.05   | 12.1 | 0.16  | 15.4                                     |
| 1N4704      | 17.0   | 0.05   | 12.9 | 0.17  | 14.5                                     |
| 1N4705      | 18.0   | 0.05   | 13.6 | 0.18  | 13.2                                     |
| 1N4706      | 19.0   | 0.05   | 14.4 | 0.19  | 12.5                                     |
| 1N4707      | 20.0   | 0.01   | 15.2 | 0.20  | 11.9                                     |
| 1N4708      | 22.0   | 0.01   | 16.7 | 0.22  | 10.8                                     |
| 1N4709      | 24.0   | 0.01   | 18.2 | 0.24  | 9.9                                      |
| 1N4710      | 25.0   | 0.01   | 19.0 | 0.25  | 9.5                                      |
| 1N4711      | 27.0   | 0.01   | 20.4 | 0.27  | 8.8                                      |
| 1N4712      | 28.0   | 0.01   | 21.2 | 0.28  | 8.5                                      |
| 1N4713      | 30.0   | 0.01   | 22.8 | 0.30  | 7.9                                      |
| 1N4714      | 33.0   | 0.01   | 25.0 | 0.33  | 7.2                                      |

Vz tolerance:  $\pm$  5%.  
Package Style DO-7