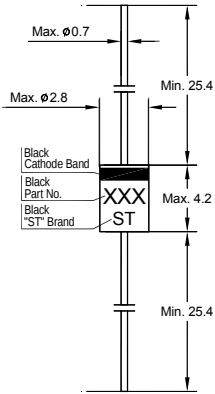


# 1N4727A...1N4764A

## SILICON PLANAR POWER ZENER DIODES

for use in stabilizing and clipping circuits with high power rating.



Glass Case DO-41  
Dimensions in mm

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

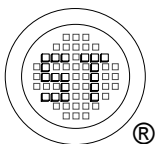
| Parameter                 | Symbol           | Value           | Unit               |
|---------------------------|------------------|-----------------|--------------------|
| Power Dissipation         | $P_{\text{tot}}$ | 1 <sup>1)</sup> | W                  |
| Junction Temperature      | $T_j$            | 200             | $^{\circ}\text{C}$ |
| Storage Temperature Range | $T_s$            | - 65 to + 200   | $^{\circ}\text{C}$ |

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

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

| Parameter                                   | Symbol           | Max.              | Unit |
|---------------------------------------------|------------------|-------------------|------|
| Thermal Resistance Junction to Ambient Air  | $R_{\text{thA}}$ | 170 <sup>1)</sup> | K/W  |
| Forward Voltage<br>at $I_F = 200\text{ mA}$ | $V_F$            | 1.2               | V    |

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



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ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506098

Dated : 12/06/2007

# 1N4727A...1N4764A

| Type    | Zener Voltage Range <sup>3), 5)</sup> |                |                 | Maximum Zener Impedance <sup>1)</sup> |                  |                    | Maximum Reverse Leakage Current |                   | Maximum Surge Current <sup>4)</sup> | Maximum Regulator Current <sup>2)</sup> |
|---------|---------------------------------------|----------------|-----------------|---------------------------------------|------------------|--------------------|---------------------------------|-------------------|-------------------------------------|-----------------------------------------|
|         | V <sub>Znom</sub>                     | V <sub>Z</sub> | I <sub>ZT</sub> | r <sub>ZJT</sub>                      | r <sub>ZJK</sub> | at I <sub>ZK</sub> | I <sub>R</sub>                  | at V <sub>R</sub> | at T <sub>a</sub> = 25 °C           |                                         |
|         | V                                     | V              | mA              | Ω                                     | Ω                | mA                 | μA                              | V                 | I <sub>ZSM</sub> (mA)               |                                         |
| 1N4727A | 3                                     | 2.85...3.15    | 83              | 10                                    | 400              | 1                  | 150                             | 1                 | 1375                                | 275                                     |
| 1N4728A | 3.3                                   | 3.13...3.47    | 76              | 10                                    | 400              | 1                  | 150                             | 1                 | 1375                                | 275                                     |
| 1N4729A | 3.6                                   | 3.42...3.78    | 69              | 10                                    | 400              | 1                  | 100                             | 1                 | 1260                                | 252                                     |
| 1N4730A | 3.9                                   | 3.7...4.1      | 64              | 9                                     | 400              | 1                  | 100                             | 1                 | 1190                                | 234                                     |
| 1N4731A | 4.3                                   | 4.08...4.52    | 58              | 9                                     | 400              | 1                  | 50                              | 1                 | 1070                                | 217                                     |
| 1N4732A | 4.7                                   | 4.46...4.94    | 53              | 8                                     | 500              | 1                  | 10                              | 1                 | 970                                 | 193                                     |
| 1N4733A | 5.1                                   | 4.84...5.36    | 49              | 7                                     | 550              | 1                  | 10                              | 1                 | 890                                 | 178                                     |
| 1N4734A | 5.6                                   | 5.32...5.88    | 45              | 5                                     | 600              | 1                  | 10                              | 2                 | 810                                 | 162                                     |
| 1N4735A | 6.2                                   | 5.89...6.51    | 41              | 2                                     | 700              | 1                  | 10                              | 3                 | 730                                 | 146                                     |
| 1N4736A | 6.8                                   | 6.46...7.14    | 37              | 3.5                                   | 700              | 1                  | 10                              | 4                 | 660                                 | 133                                     |
| 1N4737A | 7.5                                   | 7.12...7.88    | 34              | 4                                     | 700              | 0.5                | 10                              | 5                 | 605                                 | 121                                     |
| 1N4738A | 8.2                                   | 7.79...8.61    | 31              | 4.5                                   | 700              | 0.5                | 10                              | 6                 | 550                                 | 110                                     |
| 1N4739A | 9.1                                   | 8.64...9.56    | 28              | 5                                     | 700              | 0.5                | 10                              | 7                 | 500                                 | 100                                     |
| 1N4740A | 10                                    | 9.5...10.5     | 25              | 7                                     | 700              | 0.25               | 10                              | 7.6               | 454                                 | 91                                      |
| 1N4741A | 11                                    | 10.45...11.55  | 23              | 8                                     | 700              | 0.25               | 5                               | 8.4               | 414                                 | 83                                      |
| 1N4742A | 12                                    | 11.4...12.6    | 21              | 9                                     | 700              | 0.25               | 5                               | 9.1               | 380                                 | 76                                      |
| 1N4743A | 13                                    | 12.35...13.65  | 19              | 10                                    | 700              | 0.25               | 5                               | 9.9               | 344                                 | 69                                      |
| 1N4744A | 15                                    | 14.25...15.75  | 17              | 14                                    | 700              | 0.25               | 5                               | 11.4              | 304                                 | 61                                      |
| 1N4745A | 16                                    | 15.2...16.8    | 15.5            | 16                                    | 700              | 0.25               | 5                               | 12.2              | 285                                 | 57                                      |
| 1N4746A | 18                                    | 17.1...18.9    | 14              | 20                                    | 750              | 0.25               | 5                               | 13.7              | 250                                 | 50                                      |
| 1N4747A | 20                                    | 19...21        | 12.5            | 22                                    | 750              | 0.25               | 5                               | 15.2              | 225                                 | 45                                      |
| 1N4748A | 22                                    | 20.9...23.1    | 11.5            | 23                                    | 750              | 0.25               | 5                               | 16.7              | 205                                 | 41                                      |
| 1N4749A | 24                                    | 22.8...25.2    | 10.5            | 25                                    | 750              | 0.25               | 5                               | 18.2              | 190                                 | 38                                      |
| 1N4750A | 27                                    | 25.65...28.35  | 9.5             | 35                                    | 750              | 0.25               | 5                               | 20.6              | 170                                 | 34                                      |
| 1N4751A | 30                                    | 28.5...31.5    | 8.5             | 40                                    | 1000             | 0.25               | 5                               | 22.8              | 150                                 | 30                                      |
| 1N4752A | 33                                    | 31.35...34.65  | 7.5             | 45                                    | 1000             | 0.25               | 5                               | 25.1              | 135                                 | 27                                      |
| 1N4753A | 36                                    | 34.2...37.8    | 7               | 50                                    | 1000             | 0.25               | 5                               | 27.4              | 125                                 | 25                                      |
| 1N4754A | 39                                    | 37.05...40.95  | 6.5             | 60                                    | 1000             | 0.25               | 5                               | 29.7              | 115                                 | 23                                      |
| 1N4755A | 43                                    | 40.85...45.15  | 6               | 70                                    | 1500             | 0.25               | 5                               | 32.7              | 110                                 | 22                                      |
| 1N4756A | 47                                    | 44.65...49.35  | 5.5             | 80                                    | 1500             | 0.25               | 5                               | 35.8              | 95                                  | 19                                      |
| 1N4757A | 51                                    | 48.45...53.55  | 5               | 95                                    | 1500             | 0.25               | 5                               | 38.8              | 90                                  | 18                                      |
| 1N4758A | 56                                    | 53.2...58.8    | 4.5             | 110                                   | 2000             | 0.25               | 5                               | 42.6              | 80                                  | 16                                      |
| 1N4759A | 62                                    | 58.9...65.1    | 4               | 125                                   | 2000             | 0.25               | 5                               | 47.1              | 70                                  | 14                                      |
| 1N4760A | 68                                    | 64.6...71.4    | 3.7             | 150                                   | 2000             | 0.25               | 5                               | 51.7              | 65                                  | 13                                      |
| 1N4761A | 75                                    | 71.25...78.75  | 3.3             | 175                                   | 2000             | 0.25               | 5                               | 56                | 60                                  | 12                                      |
| 1N4762A | 82                                    | 77.9...86.1    | 3               | 200                                   | 3000             | 0.25               | 5                               | 62.2              | 55                                  | 11                                      |
| 1N4763A | 91                                    | 86.45...95.55  | 2.8             | 250                                   | 3000             | 0.25               | 5                               | 69.2              | 50                                  | 10                                      |
| 1N4764A | 100                                   | 95...105       | 2.5             | 350                                   | 3000             | 0.25               | 5                               | 76                | 45                                  | 9                                       |

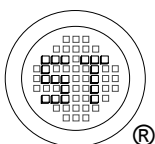
<sup>1)</sup> The Zener Impedance is derived from the 60 Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener Current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. Zener Impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

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

<sup>3)</sup> Measured under thermal equilibrium and DC test conditions.

<sup>4)</sup> The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current I<sub>ZT</sub>.

<sup>5)</sup> Tested with pulses tp = 20 ms.



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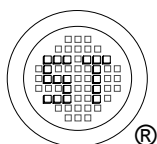
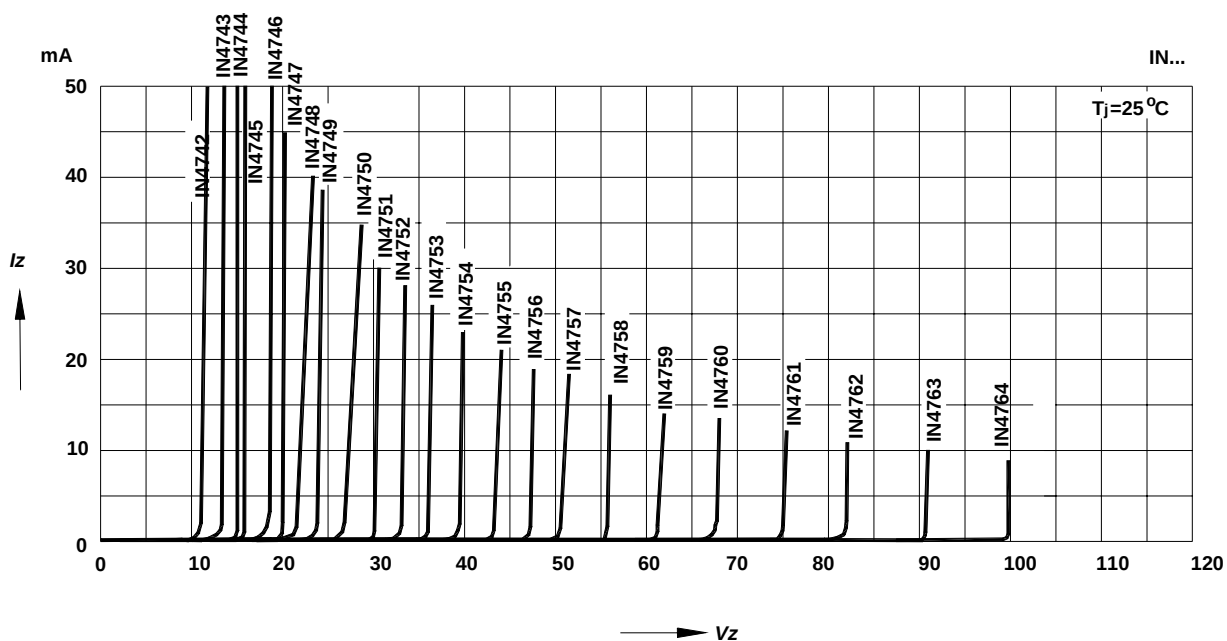
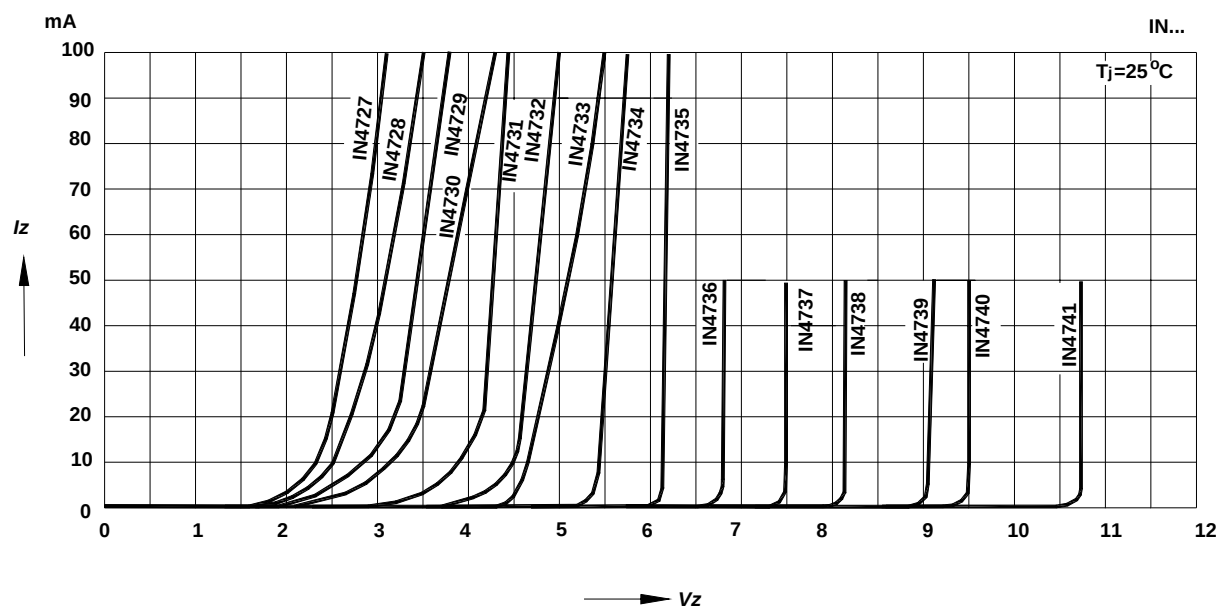


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## Breakdown characteristics

$T_j = \text{constant (pulsed)}$



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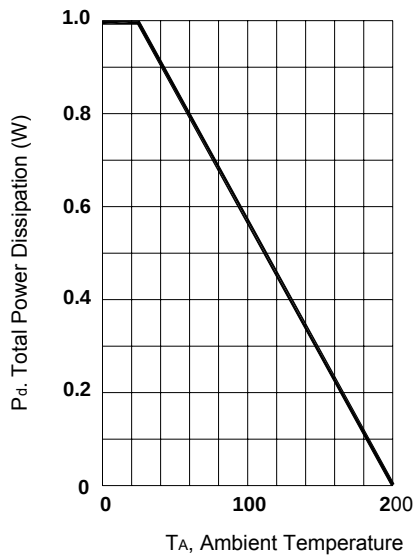


Fig. 1 Power Dissipation vs Ambient Temperature

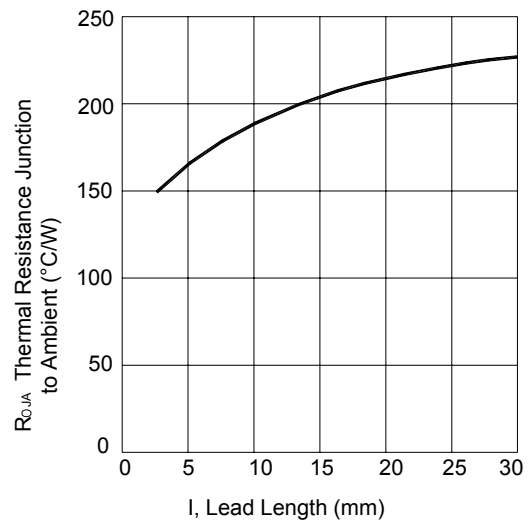


Fig. 2 Typical Thermal Resistance vs. Lead Length

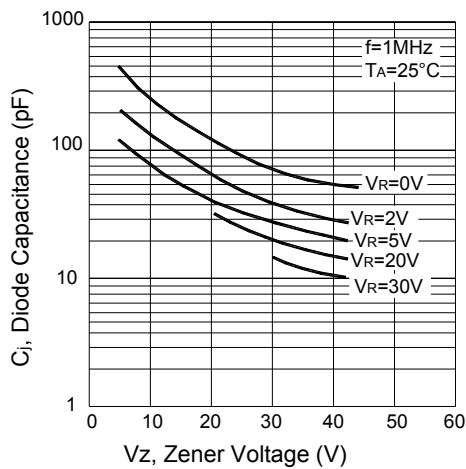


Fig. 3 Junction Capacitance vs Zener Voltage

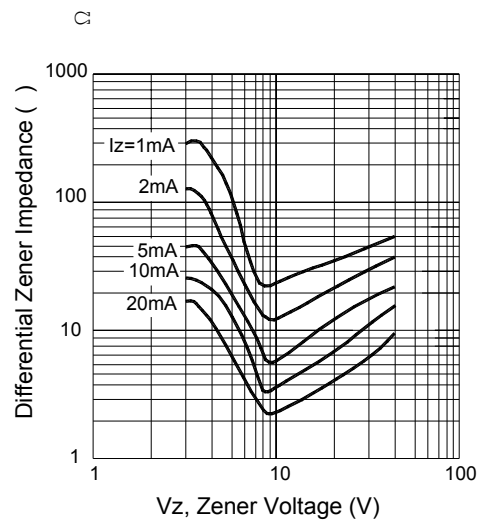
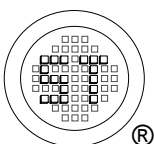
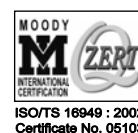


Fig. 4 Typical Zener Impedance vs. Zener Voltage



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