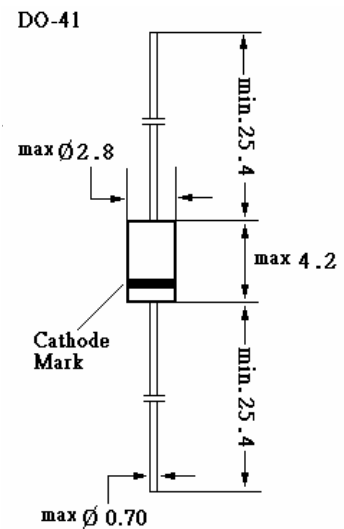


# 1N4727A...1N4764A

## SILICON PLANAR POWER ZENER DIODES

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



Dimensions in mm

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

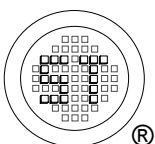
| Parameter   | Symbol    | Value           | Unit             |
|---|-----------|-----------------|------------------|
| Power Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$ | $P_{tot}$ | 1 <sup>1)</sup> | W                |
| Junction Temperature                                      | $T_j$     | 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 8mm from case are kept at ambient temperature.

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

| Parameter                                  | Symbol    | Min. | Max.              | Unit |
|--|-----------|------|-------------------|------|
| Thermal Resistance Junction to Ambient Air | $R_{thA}$ | -    | 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 8mm from case are kept at ambient temperature.



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



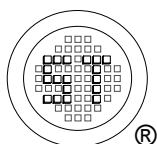
ISO/TS 16949 : 2002 Certificate No. 05103  
 ISO 14001:2004 Certificate No. 7116  
 ISO 9001:2000 Certificate No. 0506098

Dated : 20/02/2006

# 1N4727A...1N4764A

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



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



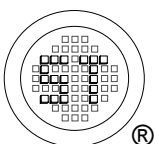
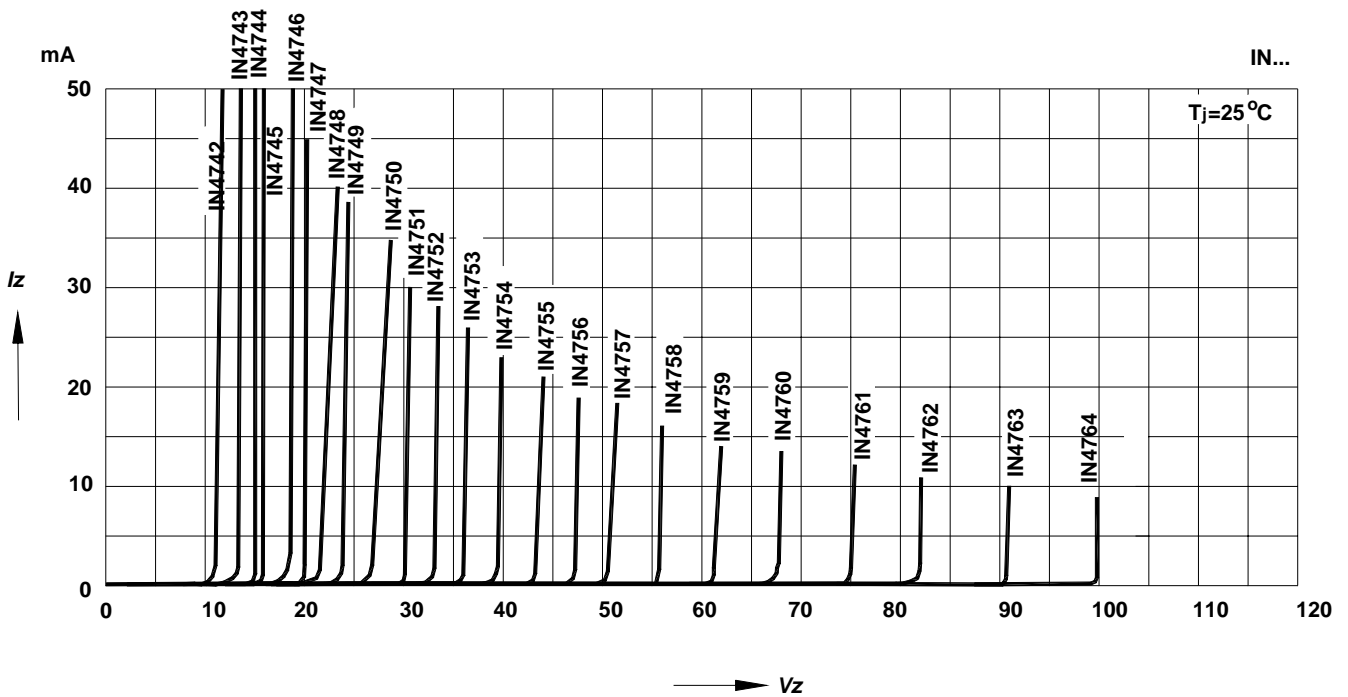
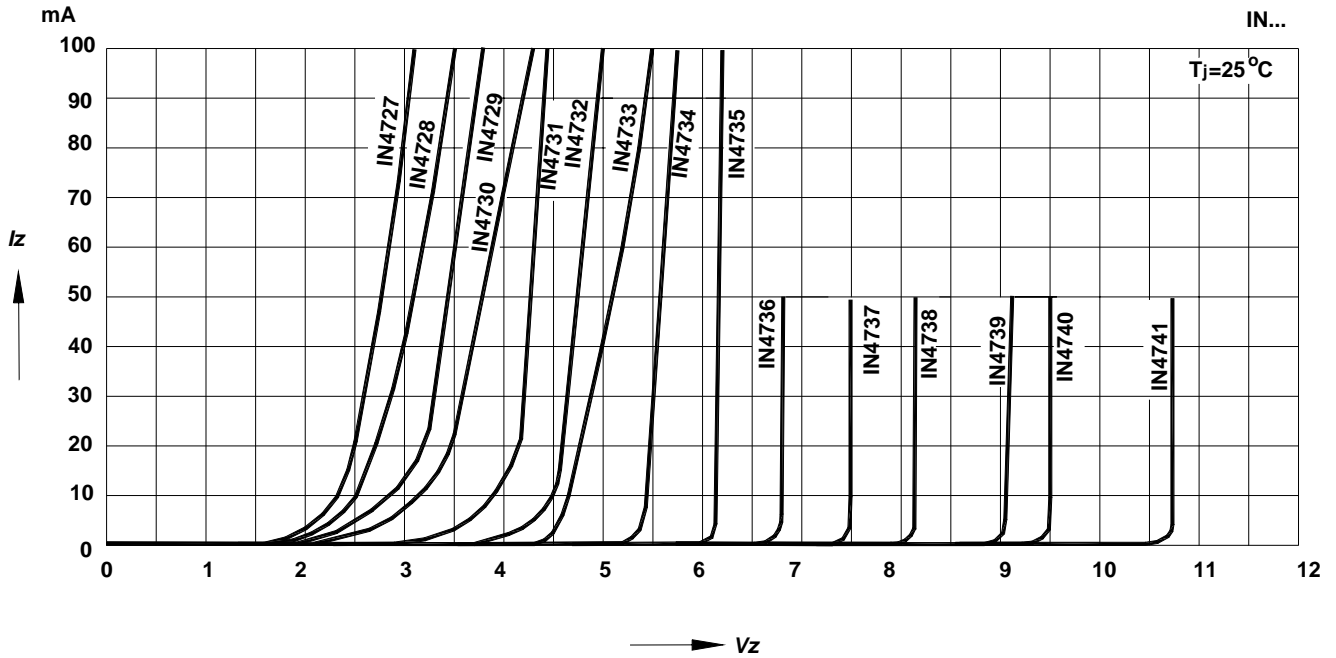
ISO/TS 16949 : 2002 Certificate No. 05103    ISO 14001:2004 Certificate No. 7116    ISO 9001:2000 Certificate No. 0506098

Dated : 20/02/2006

# 1N4727A...1N4764A

## Breakdown characteristics

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



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506098

# 1N4727A...1N4764A

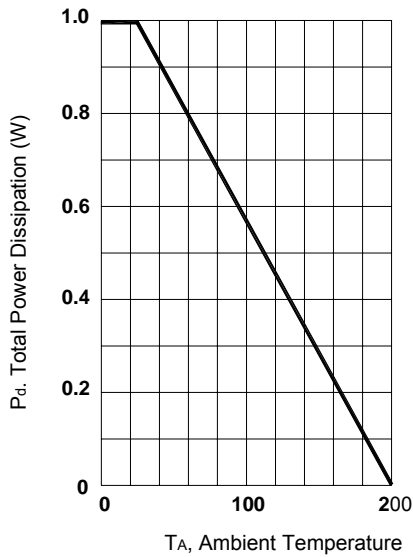


Fig. 1 Power Dissipation vs Ambient Temperature

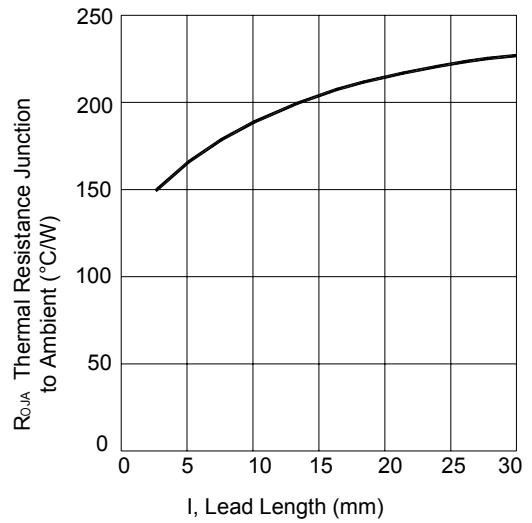


Fig. 2 Typical Thermal Resistance vs. Lead Length

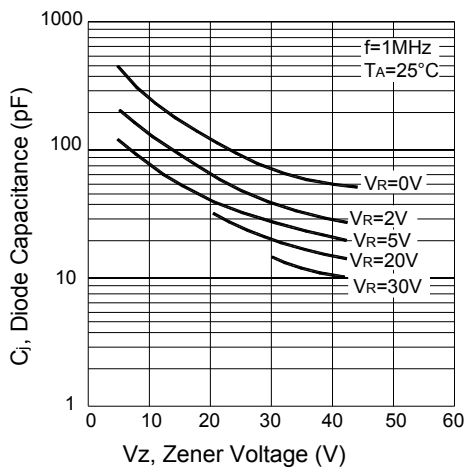


Fig. 3 Junction Capacitance vs Zener Voltage

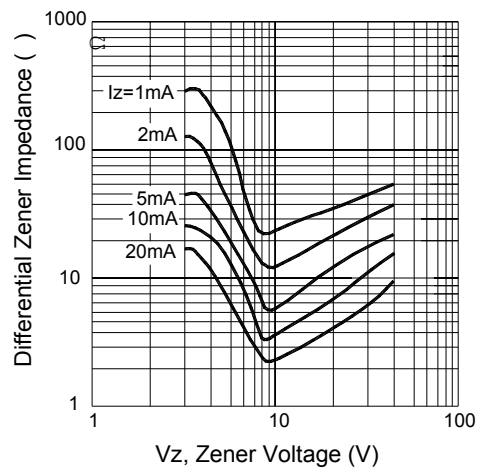
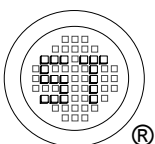


Fig. 4 Typical Zener Impedance vs. Zener Voltage



## SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)

