

1N5000 series

シリコンエピタキシャルプレーナ形 500mW 定電圧ダイオード

Silicon Epitaxial Planar 500mW Zener Diodes

● 特長

- 1) ガラス封止である (JEDEC : DO-35)。
- 2) 高信頼である。

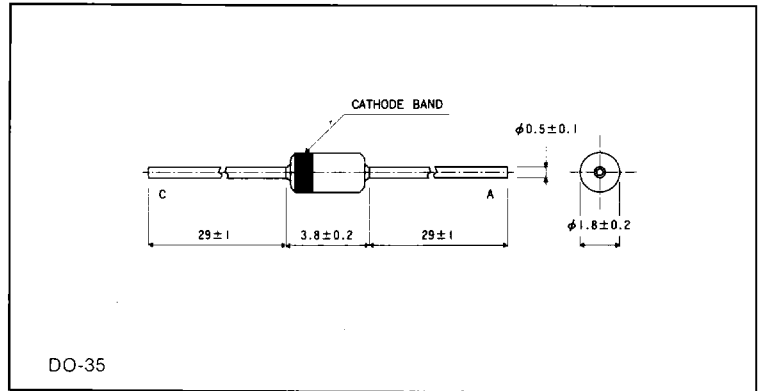
● Features

- 1) Glass sealed type (JEDEC : DO-35).
- 2) High reliability.

● 用途

定電圧制御用

● 外形寸法図/Dimensions (Unit : mm)



● Applications

Voltage regulator.

● 絶対最大定格/Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|-----------|--------|----------|------|
| 許容損失 | P | 500 | mW |
| 接合部温度 | Tj | 175 | °C |
| 保存温度範囲 | Tstg | -65~+175 | °C |

● 電気的特性/Electrical Characteristics (Ta=25°C)

| Type | Suffix | ツェナー電圧 | | 動作抵抗 | | 立上り動作抵抗 | | 逆方向電流 | | 温度係数 θ Vz (%/°C) | |
|--------|--------|--------|------|-----------|------------|------------|------------|------------|-----------|------------------------|---------|
| | | Vz (V) | | Zz (Ω) | Iz (mA) | Zzk (Ω) | Iz (mA) | IR (μA) | VR (V) | | |
| | | Min. | Max. | Max. | | Max. | | Max. | | | |
| 1N5230 | Non | 3.76 | 5.64 | 20 | 19 | 20 | 1900 | 0.25 | 50 | 1.9 | ± 0.030 |
| | A | 4.23 | 5.17 | | | | | | 5.0 | 1.9 | |
| | B | 4.47 | 4.94 | | | | | | 5.0 | 2.0 | |
| 1N5231 | Non | 4.08 | 6.12 | 20 | 17 | 20 | 1600 | 0.25 | 50 | 1.9 | ± 0.030 |
| | A | 4.59 | 5.61 | | | | | | 5.0 | 1.9 | |
| | B | 4.85 | 5.36 | | | | | | 5.0 | 2.0 | |
| 1N5232 | Non | 4.48 | 6.72 | 20 | 11 | 20 | 1600 | 0.25 | 50 | 2.9 | + 0.038 |
| | A | 5.04 | 6.16 | | | | | | 5.0 | 2.9 | |
| | B | 5.32 | 5.88 | | | | | | 5.0 | 3.0 | |
| 1N5233 | Non | 4.80 | 7.20 | 20 | 7.0 | 20 | 1600 | 0.25 | 50 | 3.3 | + 0.038 |
| | A | 5.40 | 6.60 | | | | | | 5.0 | 3.3 | |
| | B | 5.70 | 6.30 | | | | | | 5.0 | 3.5 | |

| Type | Suffix | ツェナー電圧 | | | 動作抵抗 | | 立上り動作抵抗 | | 逆方向電流 | | 温度係数 θV_z (%/°C) |
|--------|--------|-----------|-------|---------------|-----------------------|---------------|--------------------------|---------------|---------------------|--------------|--------------------------------|
| | | V_z (V) | | I_z (mA) | Z_z (Ω) | I_z (mA) | Z_{zk} (Ω) | I_z (mA) | I_R (μ A) | V_R (V) | |
| | | Min. | Max. | | Max. | | Max. | | Max. | | |
| 1N5234 | Non | 4.96 | 7.44 | 20 | 7.0 | 20 | 1000 | 0.25 | 50 | 3.8 | + 0.045 |
| | A | 5.58 | 6.82 | | | | | | 5.0 | 3.8 | |
| | B | 5.89 | 6.51 | | | | | | 5.0 | 4.0 | |
| 1N5235 | Non | 5.44 | 8.16 | 20 | 5.0 | 20 | 750 | 0.25 | 30 | 4.8 | + 0.050 |
| | A | 6.12 | 7.48 | | | | | | 3.0 | 4.8 | |
| | B | 6.46 | 7.14 | | | | | | 3.0 | 5.0 | |
| 1N5236 | Non | 6.00 | 9.00 | 20 | 6.0 | 20 | 500 | 0.25 | 30 | 5.7 | + 0.058 |
| | A | 6.75 | 8.25 | | | | | | 3.0 | 5.7 | |
| | B | 7.13 | 7.88 | | | | | | 3.0 | 6.0 | |
| 1N5237 | Non | 6.56 | 9.84 | 20 | 8.0 | 20 | 500 | 0.25 | 30 | 6.2 | + 0.062 |
| | A | 7.38 | 9.02 | | | | | | 3.0 | 6.2 | |
| | B | 7.79 | 8.61 | | | | | | 3.0 | 6.5 | |
| 1N5238 | Non | 6.96 | 10.44 | 20 | 8.0 | 20 | 600 | 0.25 | 30 | 6.2 | + 0.065 |
| | A | 7.83 | 9.57 | | | | | | 3.0 | 6.2 | |
| | B | 8.27 | 9.14 | | | | | | 3.0 | 6.5 | |
| 1N5239 | Non | 7.28 | 10.92 | 20 | 10 | 20 | 600 | 0.25 | 30 | 6.7 | + 0.068 |
| | A | 8.19 | 10.01 | | | | | | 3.0 | 6.7 | |
| | B | 8.65 | 9.56 | | | | | | 3.0 | 7.0 | |
| 1N5240 | Non | 8.00 | 12.00 | 20 | 17 | 20 | 600 | 0.25 | 30 | 7.6 | + 0.075 |
| | A | 9.00 | 11.00 | | | | | | 3.0 | 7.6 | |
| | B | 9.50 | 10.50 | | | | | | 3.0 | 8.0 | |
| 1N5241 | Non | 8.80 | 13.20 | 20 | 22 | 20 | 600 | 0.25 | 30 | 8.0 | + 0.076 |
| | A | 9.90 | 12.10 | | | | | | 2.0 | 8.0 | |
| | B | 10.45 | 11.55 | | | | | | 2.0 | 8.4 | |
| 1N5242 | Non | 9.60 | 14.40 | 20 | 30 | 20 | 600 | 0.25 | 10 | 8.7 | + 0.077 |
| | A | 10.80 | 13.20 | | | | | | 1.0 | 8.7 | |
| | B | 11.40 | 12.60 | | | | | | 1.0 | 9.1 | |
| 1N5243 | Non | 10.40 | 15.60 | 9.5 | 13 | 9.5 | 600 | 0.25 | 10 | 9.4 | + 0.079 |
| | A | 11.70 | 14.30 | | | | | | 0.5 | 9.4 | |
| | B | 12.35 | 13.65 | | | | | | 0.5 | 9.9 | |
| 1N5244 | Non | 11.20 | 16.80 | 9.0 | 15 | 9.0 | 600 | 0.25 | 10 | 9.5 | + 0.082 |
| | A | 12.60 | 15.40 | | | | | | 0.1 | 9.5 | |
| | B | 13.30 | 14.70 | | | | | | 0.1 | 10.0 | |
| 1N5245 | Non | 12.00 | 18.00 | 8.5 | 16 | 8.5 | 600 | 0.25 | 10 | 10.5 | + 0.082 |
| | A | 13.50 | 16.50 | | | | | | 0.1 | 10.5 | |
| | B | 14.25 | 15.75 | | | | | | 0.1 | 11.0 | |
| 1N5246 | Non | 12.80 | 19.20 | 7.8 | 17 | 7.8 | 600 | 0.25 | 10 | 11.4 | + 0.083 |
| | A | 14.40 | 17.60 | | | | | | 0.1 | 11.4 | |
| | B | 15.20 | 16.80 | | | | | | 0.1 | 12.0 | |

定電圧ダイオード

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| Type | Suffix | ツェナー電圧 | | 動作抵抗 | | 立上り動作抵抗 | | 逆方向電流 | | 温度係数 θ_{Vz} (%/°C) |
|--------|--------|-----------|-------|-----------------------|---------------|--------------------------|---------------|---------------------|--------------|---------------------------------|
| | | V_z (V) | | Z_z (Ω) | I_z (mA) | Z_{zk} (Ω) | I_z (mA) | I_R (μ A) | V_R (V) | |
| | | Min. | Max. | Max. | Max. | Max. | Max. | Max. | | |
| 1N5247 | Non | 13.60 | 20.40 | | | | | 10 | 12.4 | + 0.084 |
| | A | 15.30 | 18.70 | 7.4 | 19 | 7.4 | 600 | 0.25 | 0.1 | |
| | B | 16.15 | 17.85 | | | | | | 0.1 | |
| 1N5248 | Non | 14.40 | 21.60 | | | | | 10 | 13.3 | + 0.085 |
| | A | 16.20 | 19.80 | 7.0 | 21 | 7.0 | 600 | 0.25 | 0.1 | |
| | B | 17.10 | 18.90 | | | | | | 0.1 | |
| 1N5249 | Non | 15.20 | 22.80 | | | | | 10 | 13.3 | + 0.086 |
| | A | 17.10 | 20.90 | 6.6 | 23 | 6.6 | 600 | 0.25 | 0.1 | |
| | B | 18.05 | 19.95 | | | | | | 0.1 | |
| 1N5250 | Non | 16.00 | 24.00 | | | | | 10 | 14.3 | + 0.086 |
| | A | 18.00 | 22.00 | 6.2 | 25 | 6.2 | 600 | 0.25 | 0.1 | |
| | B | 19.00 | 21.00 | | | | | | 0.1 | |
| 1N5251 | Non | 17.60 | 26.40 | | | | | 10 | 16.2 | + 0.087 |
| | A | 19.80 | 24.20 | 5.6 | 29 | 5.6 | 600 | 0.25 | 0.1 | |
| | B | 20.90 | 23.10 | | | | | | 0.1 | |
| 1N5252 | Non | 19.20 | 28.80 | | | | | 10 | 17.1 | + 0.088 |
| | A | 21.60 | 26.40 | 5.2 | 33 | 5.2 | 600 | 0.25 | 0.1 | |
| | B | 22.80 | 25.20 | | | | | | 0.1 | |

- (1) ツェナー電圧 (V_z) は定常状態で測定します。
- (2) 動作抵抗 (Z_z, Z_{zk}) は規定電流 (I_z) に微小交流電流を重畳して測定します。

● 電気的特性曲線/Electrical Characteristics ($T_a=25^\circ\text{C}$)

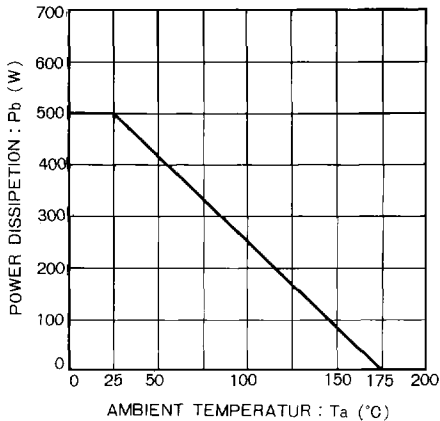


Fig.1 ディレーティングカーブ