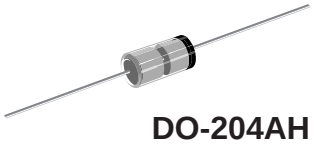
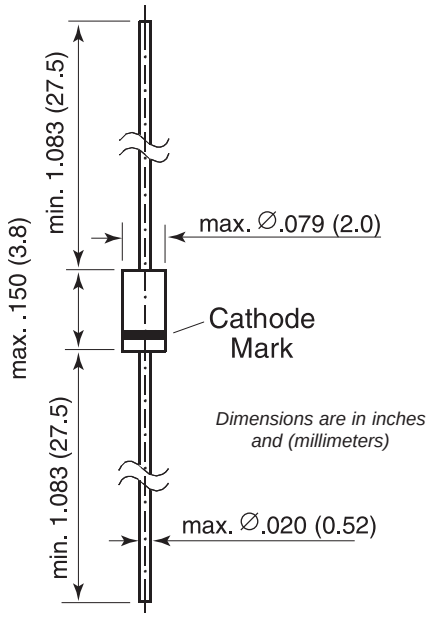
GENERAL SEMICONDUCTOR®

# ZTK6.8 thru ZTK33

## Voltage Stabilizers



**DO-204AH (DO-35 Glass)**




## Features

- Temperature-Compensated Stabilizing Circuits
- Monolithic linear integrated circuits with extremely short thermal run-in time producing a constant temperature-compensated voltage. They are particularly suitable for stabilizing the tuning voltage in radio and TV tuners employing voltage-variable capacitance diodes.

## Mechanical Data

**Case:** DO-35 Glass Case

**Weight:** approx. 0.13 g

**Packaging codes/options:**

D7/10K per 13" reel (52mm tape), 20K/box
D8/10K per Ammo tape, (52mm tape), 20K/box

## Maximum Ratings ($T_A$ = 25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Operating Current (see Table "Characteristics") | | | |
| Junction temperature | $T_J$ | 150 | °C |
| Storage temperature range | $T_S$ | –20 to +150 | °C |

## Electrical and Thermal Characteristics ($T_A$ = 25°C unless otherwise noted)

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Temperature Coefficient of the operating voltage at $I_Z$ = 5 mA ±0.5 in the range of $T_{amb}$ = 20 to 60°C | $\alpha_{vz}$ | –10 | –2 | +5(1) | $10^{-5}$/°C |
| Thermal Run-in-Time | $t_{th}$ | – | –20(2) | – | s |
| Thermal resistance junction to ambient air | $R_{\theta JA}$ | – | – | 400 | °C/W |

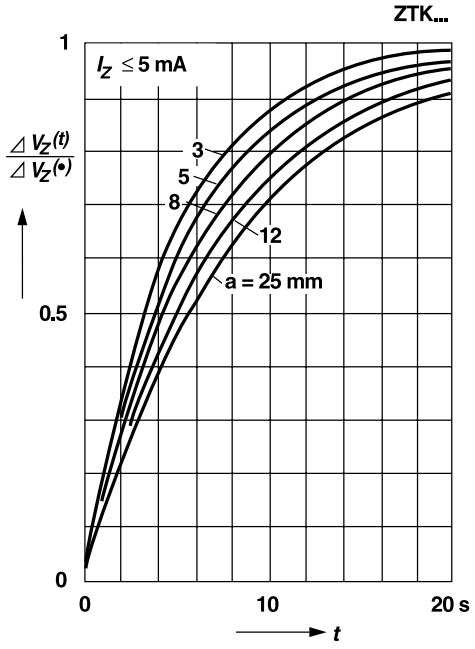
| Type | Operating Voltage at $I_Z$ = 5mA(3) $V_Z$ (V) | Dynamic resistance at $I_Z$ = 5mA $r_{zj}$ (W) | Permissable operating at $T_{amb}$ = 25∞C(4) $I_Z$ max. (mA) |
|---|---|---|---|
| ZTK6.8 | 6.4 ... 7.1 | 10 (<25) | 36 |
| ZTK9 | 8 ... 10 | 10 (<25) | 27 |
| ZTK11 | 10 ... 12 | 10 (<25) | 1 |
| ZTK18 | 16 ... 20 | 11(<25) | 13 |
| ZTK22 | 20 ... 24 | 11(<25) | 1 |
| ZTK27 | 24 ... 30 | 12 (<25) | 8 |
| ZTK33A | 30 ... 32 | 12 (<25) | 7 |
| ZTK33B | 32 ... 34 | 12 (<25) | 7 |
| ZTK33C | 34 ... 36 | 12 (<25) | 7 |

**Notes:** (1) Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case
(2) At the end of this time $\Delta V_Z$ has reached 90% of its final value $\Delta V_{Z\,max}$. $\Delta V_{Z\,max} = V_Z$ (a) – $V_Z$ (0), where $V_Z$ (0) = $V_Z$ in the instant of turn-on and $V_Z$ (a) = $V_Z$ at thermal equilibrium
(3) Tested with pulses $t_p$ = 5ms
(4) Valid provided that leads are kept at ambient temperature at a distance of 8mm from case.

**6/28/01**

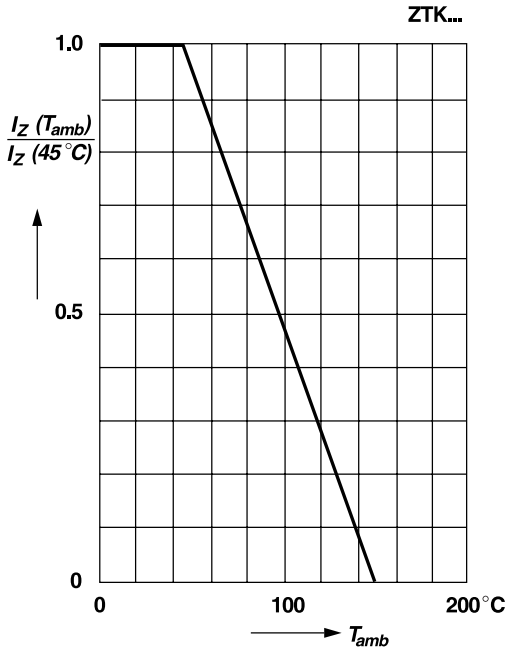
### Ratings and Characteristic Curves $T_A$ = 25°C unless otherwise noted.

**Time dependence of $\Delta V_Z$ after turn-on for different distances between case and point of ambient temperature on the leads**

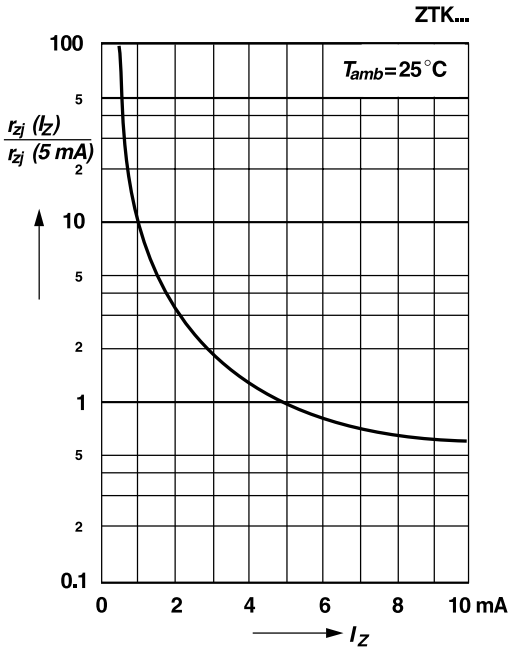



**Permissible operating current versus ambient temperature**

Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case




**Dynamic resistance versus operating current**




**Change of temperature coefficient versus operating current**