

DRAFT

Features

- Maximum Initial Tolerance: 0.2%
- *Guaranteed* Temperature Stability
- Maximum 0.6Ω Dynamic Impedance
- Wide Operating Current Range
- Directly Interchangeable with FT136 for Improved Performance
- No Adjustments Needed for Minimum Temperature Coefficient
- Available in 8-Lead SO and MSOP Packages and 3-Lead TO-92 Package

Applications

- Reference for 5V Systems
- 8-Bit A/D and D/A Reference
- Digital Voltmeters
- Current Loop Measurement and Control Systems
- Power Supply Monitor

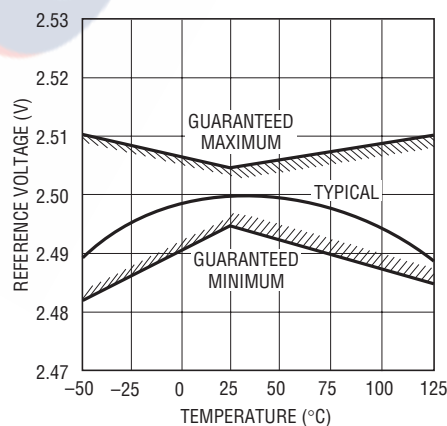
Description

The FT1009 is a precision trimmed 2.5V shunt regulator diode featuring a maximum initial tolerance of only $\pm 5\text{mV}$. The low dynamic impedance and wide operating current range enhances its versatility. The 0.2% reference tolerance is achieved by on-chip trimming which not only minimises the initial voltage tolerance but also minimises the temperature drift.

Even though no adjustments are needed with the FT1009, a third terminal allows the reference voltage to be adjusted $\pm 5\%$ to calibrate out system errors. In many applications, the FT1009 can be used as a pin-to-pin replacement of the FT136 and the external trim network eliminated.

For a lower drift 2.5V reference, see the FT1019 data sheet.

Output Voltage



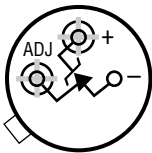
Absolute Maximum Ratings

Reverse Current 20mA
 Forward Current 10mA
 Storage Temperature Range -65°C to 150°C
 Lead Temperature (Soldering, 10 sec)..... 300°C

Operating Temperature Range
 FT1009/FT1009C 0°C to 70°C
 FT1009I -40°C to 85°C
 FT1009M -55°C to 125°C

Package/Order Information

BOTTOM VIEW



H PACKAGE
 3-LEAD TO-46 METAL CAN

$T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 440^{\circ}C/W$, $\theta_{JC} = 80^{\circ}C/W$

ORDER PART NUMBER

FT1009MH
 FT1009CH

TOP VIEW



MS8 PACKAGE
 8-LEAD PLASTIC MSOP

$T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 250^{\circ}C/W$

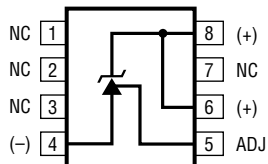
ORDER PART NUMBER

FT1009CMS8

MS8 PART MARKING

FTQZ

TOP VIEW



S8 PACKAGE
 8-LEAD PLASTIC SO

$T_{JMAX} = 150^{\circ}C$, $\theta_{JA} = 190^{\circ}C/W$

ORDER PART NUMBER

FT1009S8
 FT1009IS8

S8 PART MARKING

1009
 1009I

ORDER PART NUMBER

FT1009CZ
 FT1009IZ

Available Information

| TEMPERATURE | ACCURACY (%) | TEMPERATURE COEFFICIENT (ppm/°C) | PACKAGE STYLE | | | |
|----------------|--------------|----------------------------------|--------------------|--------------|------------|-----------|
| | | | TO-46 (H) OBSOLETE | MSOP-8 (MS8) | SO-8 (S8) | TO-92 (Z) |
| 0°C to 70°C | 0.20 | 25 | FT1009CH | FT1009CMS8 | FT1009S8 | FT1009CZ |
| | 0.40 | 25 | | | | |
| -40°C to 85°C | 0.20 | 35 | | | FT10098IS8 | FT1009IZ |
| | 0.40 | 35 | | | | |
| -55°C to 125°C | 0.20 | 35 | FT1009MH | | | |



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