



DC COMPONENTS CO., LTD.
INTEGRATED CIRCUIT

DM431
DM431A
DM431B

TECHNICAL SPECIFICATIONS OF ADJUSTABLE SHUNT REGULATOR

Features

- * Programmable output voltage
- * Temperature coefficient is 50ppm/°C typical
- * Temperature compensated for operation over
- * Full temperature range
- * Low output noise voltage
- * Fast turn on response

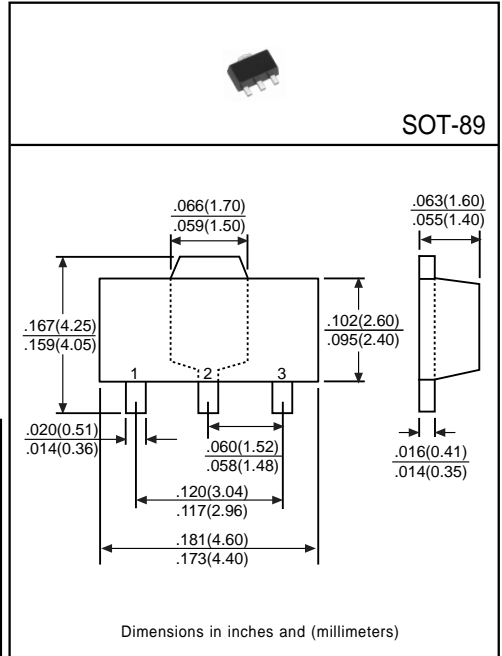
Pinning

- 1 = Reference
- 2 = Anode
- 3 = Cathode

Absolute Maximum Ratings

(Operating temperature range applies, unless otherwise specified)

| Characteristic | Symbol | Rating | Unit |
|-----------------------------------|------------------|--------------|------|
| Cathode to Anode Voltage | V _{KA} | 37 | V |
| Cathode Current Range(Continuous) | I _K | -100 to +150 | mA |
| Reference Input Current Range | I _{ref} | +0.05 to +10 | mA |
| Power Dissipation | P _D | 770 | mW |
| Operating Temperature Range | T _{opr} | 0 to +70 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |



Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Conditions |
|--|--------------------------------------|-------|-------|-------|------|---|
| Reference Input Voltage | DM431 | 2.440 | 2.495 | 2.550 | V | V _{KA} =V _{REF} , I _K =10mA |
| | DM431A | 2.470 | 2.495 | 2.520 | | |
| | DM431B | 2.480 | 2.495 | 2.510 | | |
| Reference Input Voltage Deviation Over Temperature Range | ΔV _{ref} | - | 4.0 | 17 | mV | V _{KA} =V _{REF} , I _K =10mA T _{min} ≤ T _A ≤ T _{max} |
| Ratio of Change in Reference Input Voltage to Change in Cathode to Anode Voltage | ΔV _{ref} / ΔV _{KA} | - | -1.4 | -2.7 | mV/V | I _K =10mA, ΔV _{KA} =10V-V _{REF} |
| | | - | -1.0 | -2.0 | | I _K =10mA, ΔV _{KA} =36V-10V |
| Reference Input Current | I _{ref} | - | 2.0 | 4.0 | μA | I _K =10mA, R ₁ =10kΩ, R ₂ =∞ |
| Reference Input Current Deviation Over Temperature Range | ΔI _{ref} | - | 0.4 | 1.2 | μA | I _K =10mA, R ₁ =10kΩ, R ₂ =∞ T _{min} ≤ T _A ≤ T _{max} |
| Minimum Cathode Current for Regulation | I _{K(min)} | - | 0.4 | 1.0 | mA | V _{KA} =V _{REF} |
| Off-State Cathode Current | I _{K(off)} | - | 0.1 | 1.0 | μA | V _{KA} =36V, V _{REF} =0 |
| Dynamic Impedance | Z _{KA} | - | 0.2 | 0.5 | Ω | V _{KA} =V _{REF} , f ≤ 1.0kHz I _K =1 to 100mA |