

***PAD1 / PAD2 / PAD5 / PAD10 / PAD20 / PAD50***

**FEATURES**

- Low Leakage ..... 1 pA (PAD1)
- High Breakdown Range  
..... -45 V min - 120 V max (PAD1, 2, 5)  
..... -35V min (PAD10, 20, 50, 100)
- Low Capacitance ..... 0.8 pf (PAD1, 2, 5)  
..... 2.0 pf (PAD10, 20, 50, 100)

**APPLICATIONS**

- High Impedance Protection Devices
- Fast Diode Switching
- Clipping Circuits

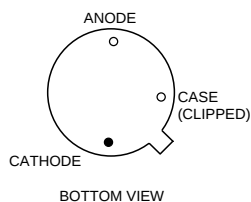
**DESCRIPTION**

Calogic's series of Pico Amp Diodes are an excellent choice for protection devices where ultra low leakage is critical and must be at a minimal measurement. These devices have a wide operating voltage range and are low capacitance for high speed switching requirements. Housed in a hermetic TO-18 package the product line is also available in chip form for hybrid uses.

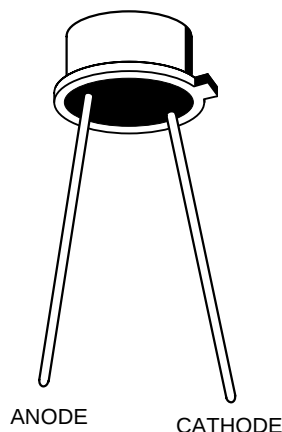
**ORDERING INFORMATION**

| Part      | Package                  | Temperature Range |
|-----------|--------------------------|-------------------|
| PAD1-100  | Hermetic TO-18           | -55°C to +150°C   |
| XPAD1-100 | Sorted Chips in Carriers | -55°C to +150°C   |

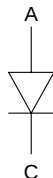
**PIN CONFIGURATION**



5007



**SCHEMATIC DIAGRAM**

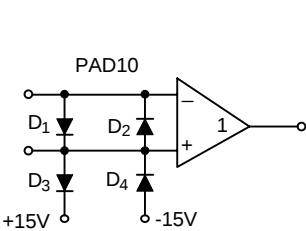


ABSOLUTE MAXIMUM RATINGS (25°C)

Forward Current. . . . . 50 mA  
Total Device Dissipation . . . . . 300 mW  
Storage Temperature Range . . . . . -55°C to 125°C  
Lead Temperature (1/16" from case for 10 seconds) . . . . . 300°C

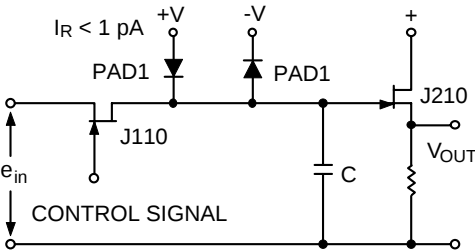
ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| SYMBOL          | CHARACTERISTICS             | MIN | TYP | MAX  | UNIT | TEST CONDITIONS       |
|-----------------|-----------------------------|-----|-----|------|------|-----------------------|
| STATIC          |                             |     |     |      |      |                       |
| I <sub>R</sub>  | Reverse Current             |     |     | -1   | pA   | PAD1                  |
|                 |                             |     |     | -2   |      | PAD2                  |
|                 |                             |     |     | -5   |      | PAD5                  |
|                 |                             |     |     | -10  |      | PAD10                 |
|                 |                             |     |     | -20  |      | PAD20                 |
|                 |                             |     |     | -50  |      | PAD50                 |
|                 |                             |     |     | -100 |      | PAD100                |
| BV <sub>R</sub> | Breakdown Voltage (Reverse) | -45 |     | -120 | V    | PAD1, 2, 5            |
|                 |                             | -35 |     |      |      | PAD10, 20, 50, 100    |
| V <sub>F</sub>  | Forward Voltage Drop        |     | 0.8 | 1.5  |      | I <sub>R</sub> = -1μA |
|                 |                             |     |     |      |      | I <sub>F</sub> = 5 mA |
| DYNAMIC         |                             |     |     |      |      |                       |
| C <sub>R</sub>  | Capacitance                 |     |     | 0.8  | pF   | PAD1, 2, 5            |
|                 |                             |     |     | 2    |      | PAD10, 20, 50, 100    |



APPLICATION

Operational Amplifier Protection. Input Differential Voltage limited to 0.8 V (typ) by PADS D<sub>1</sub> and D<sub>2</sub> Common mode input voltage limited by PADS D<sub>3</sub> and D<sub>4</sub> to ±15 V.



Typical sample and hold circuit with clipping. PAD diodes reduce offset voltages fed capacitively from the FET switch gate.