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## 3 $\frac{3}{4}$ Digit DMM Circuit

## MAX133/134

### General Description

The MAX133 and MAX134 are integrating A/D converters for 3 $\frac{3}{4}$  digit multimeters and data acquisition systems such as data loggers and weigh scales. The A/D's internal resolution is  $\pm 40,000$  counts. An extra digit is supplied as a guard digit to allow autzero or tare of a 4000 count displayed reading to 1/10 of a displayed count. The conversion time is 50ms.

The MAX133 and MAX134 differ only in their microprocessor interface. The MAX133 has a 4 bit multiplexed address/data bus while the MAX134 has 3 separate address lines and a 4 bit bidirectional data bus. Both devices can be used with 4, 8, and 16 bit microprocessors.

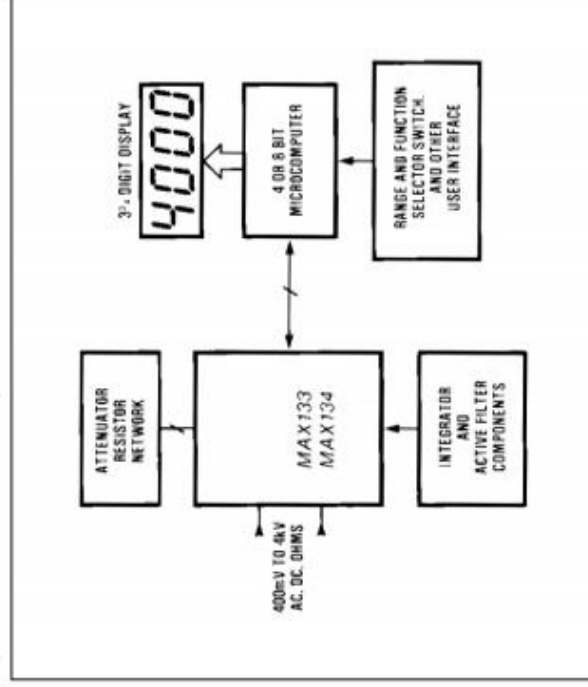
When controlled by a microprocessor, the MAX133 and MAX134 can perform auto-ranging measurements from  $\pm 400.0\text{mV}$  to  $\pm 4000\text{V}$  full scale. External attenuator resistors are required, but range switching is performed by the A/D.

The power supply is typically a 9V battery or  $\pm 5\text{V}$ . Operating current is typically  $100\mu\text{A}$  while standby current is only  $25\mu\text{A}$ .

### Applications

- Digital Panel Meters
- Weigh Scales
- Data Loggers
- Data Acquisition Systems

### Typical Operating Circuit



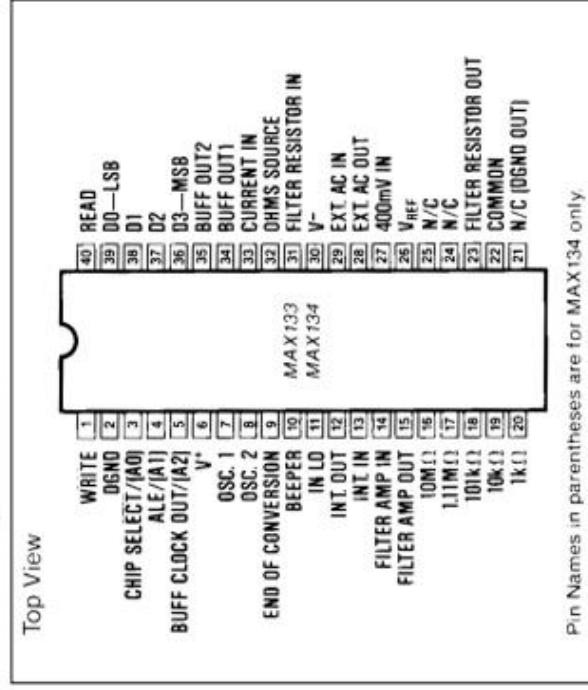
### Features

- ◆ 40,000 Count Resolution
- ◆ 0.025% Accuracy
- ◆ 20 Conversions per Second
- ◆ Microprocessor Interface
- ◆ 100 $\mu\text{A}$  Operating Supply Current
- ◆ Low External Component Count
- ◆ 5 $\mu\text{V}$  Resolution
- ◆ Demonstration Kit Available MAX134/DEMO

### Ordering Information

PART	TEMP. RANGE	PACKAGE
MAX133CPL+	0°C to +70°C	40 Lead Plastic DIP
MAX133CQH+D	0°C to +70°C	44 Lead Plastic Chip Carrier
MAX133CID	0°C to +70°C	Dice
MAX133EPL+	-40°C to +85°C	40 Lead Plastic DIP
MAX133CMH+D	0°C to +70°C	44 MQFP
MAX133CMH+TD	0°C to +70°C	44 MQFP
MAX134CPL+	0°C to +70°C	40 Lead Plastic DIP
MAX134CQH+D	0°C to +70°C	44 Lead Plastic Chip Carrier
MAX134CID	0°C to +70°C	Dice
MAX134EPL+	-40°C to +85°C	40 Lead Plastic DIP
MAX134CMH+D	0°C to +70°C	44 MQFP
MAX134CMH+TD	0°C to +70°C	44 MQFP

### Pin Configuration



19-0575; Rev 1; 3/20