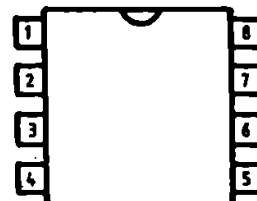






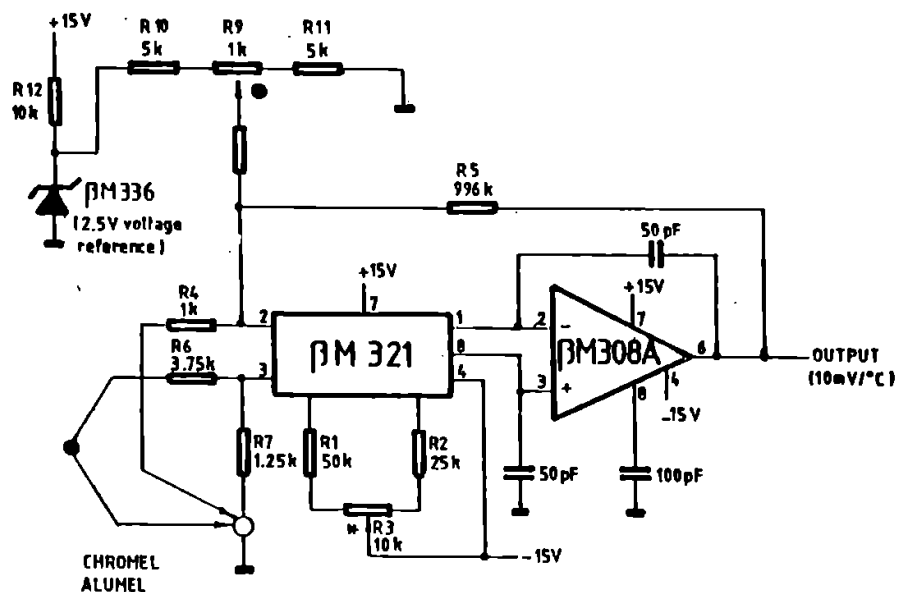
β M 121N ; β M 221N ; β M 321N (cont.)

1. Output 2
2. Input 1
3. Input 2
4. V-
5. R SET/Balance
6. R SET/Balance
7. V+
8. Output 1



PACKAGE MP-48 / TOP VIEW

Typical application



THERMOCOUPLE AMPLIFIER WITH
COLD JUNCTION COMPENSATION



β M 121N ; β M 221N ; β M 321N (cont.)

Calibration procedure :

* Set for T_{amb} [$^{\circ}K$] $\times 10$ mV/ $^{\circ}K$ at output with voltage reference (β M 336) shorted (for example, at 25 $^{\circ}C$ ambient temperature, output should equal 2.98 V).

Adjust for output reading in $^{\circ}C$.

Remarks :

1. This is a minimum part count application in which β M 321 performs both signal amplification and cold junction compensation. This is possible due to the theoretical relationship between the offset voltage and drift. When the offset is not nulled to zero. The drift of the amplifier is then used to compensate the thermocouple for ambient variations.

2. The β M 336 provides a temperature stable voltage reference for offsetting the output to read directly in degrees centigrade. It can be replaced by any voltage reference device provided that appropriate changes are made in the resistor voltage divider string R9, R10, R11.

3. Calibration is independent of thermocouple type; however, circuit values are for chromel alumel. R6 and R7 must be changed for different thermocouples.