

β MTX series
 β MTY series
ULTRALOW OFFSET VOLTAGE PRECISION PREAMPLIFIERS

The β MTX/ β MTY series :

β MTX 121AN, β MTX 121N, β MTX 321AN, β MTX 321N, β MTX 321CN;
 β MTY 121AN, β MTY 121N, β MTY 321AN, β MTY 321N, β MTY 321CN;

are improved, easy-to-use versions of the popular LM 121 precision preamplifier (refer to the β M 121N data sheet). These devices feature fixed input stage operating current and internally trimmed offset voltage. The difference over the standard series is that the need for external components (two resistors and a potentiometer of low TC) is eliminated since :

1. current setting resistors are integrated on the chip;
2. offset voltage is adjusted on the chip, at the wafer test, down to typically +/- 15 μ V, using the well proved zener-zap trimming technique.

The β MTX series is primarily intended for low noise with low source resistance, while the β MTY series is intended for low input bias current with high source resistance applications.

The devices are manufactured with a low noise bipolar process including ion-implanted super-beta transistors so input bias current related errors are more than an order of magnitude lower than conventional bipolar amplifiers at the same operating current of the input stage. The β MTX / β MTY series provides high performance for low noise, high-accuracy amplification of very low-level signals in transducer applications.

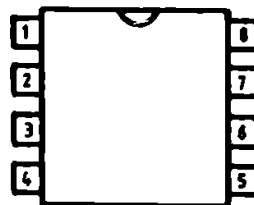
Features

- Operating temperature	121AN, 121N ...	-55 ...	+125 $^{\circ}$ C
	321AN, 321N, 321CN ...	0 ...	+ 70 $^{\circ}$ C
- Input offset voltage	121AN, 321AN ..	max.	75 μ V
	121N , 321N ...	max.	150 μ V
	321CN ..	max.	250 μ V
- Input offset voltage drift ..	β MTX 121AN,321AN	max.	1 μ V/ $^{\circ}$ C
- Input bias current	β MTY 121AN ...	max.	10 nA
	β MTX 121AN ...	max.	75 nA
- Common-mode rejection ratio		min.	120 dB
- Supply voltage rejection ratio		min.	120 dB
- Input noise voltage	β MTX series ..	typ.	7 nV/ $\sqrt{\text{Hz}}$
- Supply current		typ.	400 μ A



BMTX / β MTY series (cont.)

- 1. Output 2
- 2. Input 1
- 3. Input 2
- 4. V^-
- 5. Balance
- 6. Balance
- 7. V^+
- 8. Output 1

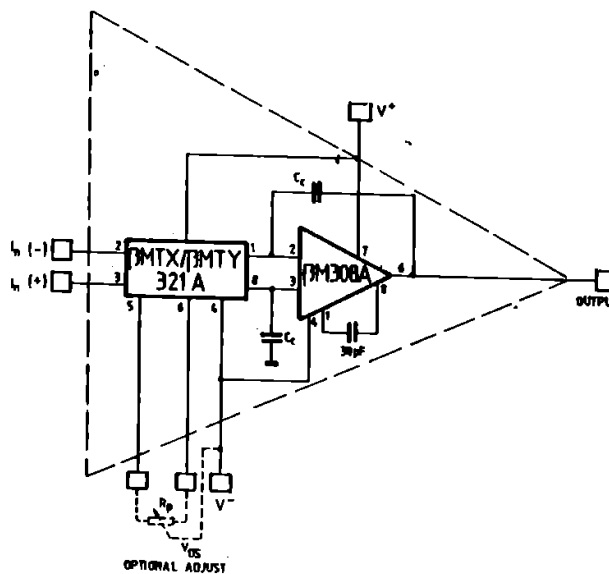


PACKAGE MP-48 / TOP VIEW

Typical application

- Recommended R_p values:**
- 10 kohms for β MTX 321
 - 25 kohms for β MTY 321
- Frequency compensations:**
- C_c (pF) = $680 / ACL$
(for β MTX 121)
 - C_c (pF) = $100 / ACL$
(for β MTY 121)

ACL = Closed loop gain



**HIGH PRECISION ULTRA-LOW
DRIFT OPERATIONAL AMPLIFIER**