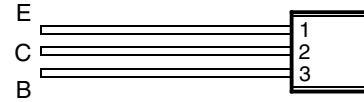




- 20 W Pulsed Power Dissipation
- 100 V Capability
- 2 A Continuous Collector Current
- 4 A Peak Collector Current

LP PACKAGE  
(TOP VIEW)



MDTRAB

**absolute maximum ratings at 25°C case temperature (unless otherwise noted)**

RATING		SYMBOL	VALUE	UNIT
Collector-base voltage ( $I_E = 0$ )	TIPP110	$V_{CBO}$	60	V
	TIPP111		80	
	TIPP112		100	
Collector-emitter voltage ( $I_B = 0$ )	TIPP110	$V_{CEO}$	60	V
	TIPP111		80	
	TIPP112		100	
Emitter-base voltage		$V_{EBO}$	5	V
Continuous collector current		$I_C$	2	A
Peak collector current (see Note 1)		$I_{CM}$	4	A
Continuous base current		$I_B$	50	mA
Continuous device dissipation at (or below) 25°C case temperature (see Note 2)		$P_{tot}$	0.8	W
Pulsed power dissipation (see Note 3)		$P_T$	20	W
Operating junction temperature range		$T_j$	-55 to +150	°C
Storage temperature range		$T_{stg}$	-55 to +150	°C
Lead temperature 3.2 mm from case for 10 seconds		$T_L$	260	°C

NOTES: 1. This value applies for  $t_p \leq 0.3$  ms, duty cycle  $\leq 10\%$ .  
2. Derate linearly to 150°C case temperature at the rate of 0.32 W/°C.  
3.  $V_{CE} = 20$  V,  $I_C = 1$  A,  $P_W = 10$  ms, duty cycle  $\leq 2\%$ .

**PRODUCT INFORMATION**

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Specifications are subject to change without notice.

**electrical characteristics at 25°C case temperature**

PARAMETER	TEST CONDITIONS			MIN	TYP	MAX	UNIT
$V_{(BR)CEO}$ Collector-emitter breakdown voltage	$I_C = 10 \text{ mA}$ (see Note 4)	$I_B = 0$	TIPP110 TIPP111 TIPP112	60 80 100			V
$I_{CEO}$ Collector-emitter cut-off current	$V_{CE} = 30 \text{ V}$ $V_{CE} = 40 \text{ V}$ $V_{CE} = 50 \text{ V}$	$V_{BE} = 0$ $V_{BE} = 0$ $V_{BE} = 0$	TIPP110 TIPP111 TIPP112			2 2 2	mA
$I_{CBO}$ Collector-base cut-off current	$V_{CE} = 60 \text{ V}$ $V_{CE} = 80 \text{ V}$ $V_{CE} = 100 \text{ V}$	$I_B = 0$ $I_B = 0$ $I_B = 0$	TIPP110 TIPP111 TIPP112			1 1 1	mA
$I_{EBO}$ Emitter cut-off current	$V_{EB} = 5 \text{ V}$	$I_C = 0$				2	mA
$h_{FE}$ Forward current transfer ratio	$V_{CE} = 4 \text{ V}$ $V_{CE} = 4 \text{ V}$	$I_C = 1 \text{ A}$ $I_C = 2 \text{ A}$	(see Notes 4 and 5)	1000 500			
$V_{CE(sat)}$ Collector-emitter saturation voltage	$I_B = 8 \text{ mA}$	$I_C = 2 \text{ A}$	(see Notes 4 and 5)			2.5	V
$V_{BE}$ Base-emitter voltage	$V_{CE} = 4 \text{ V}$	$I_C = 2 \text{ A}$	(see Notes 4 and 5)			2.8	V
$V_{EC}$ Parallel diode forward voltage	$I_E = 4 \text{ A}$	$I_B = 0$	(see Notes 4 and 5)			3.5	V

- NOTES: 4. These parameters must be measured using pulse techniques,  $t_p = 300 \mu\text{s}$ , duty cycle  $\leq 2\%$ .  
5. These parameters must be measured using voltage-sensing contacts, separate from the current carrying contacts and located within 3.2 mm from device body.

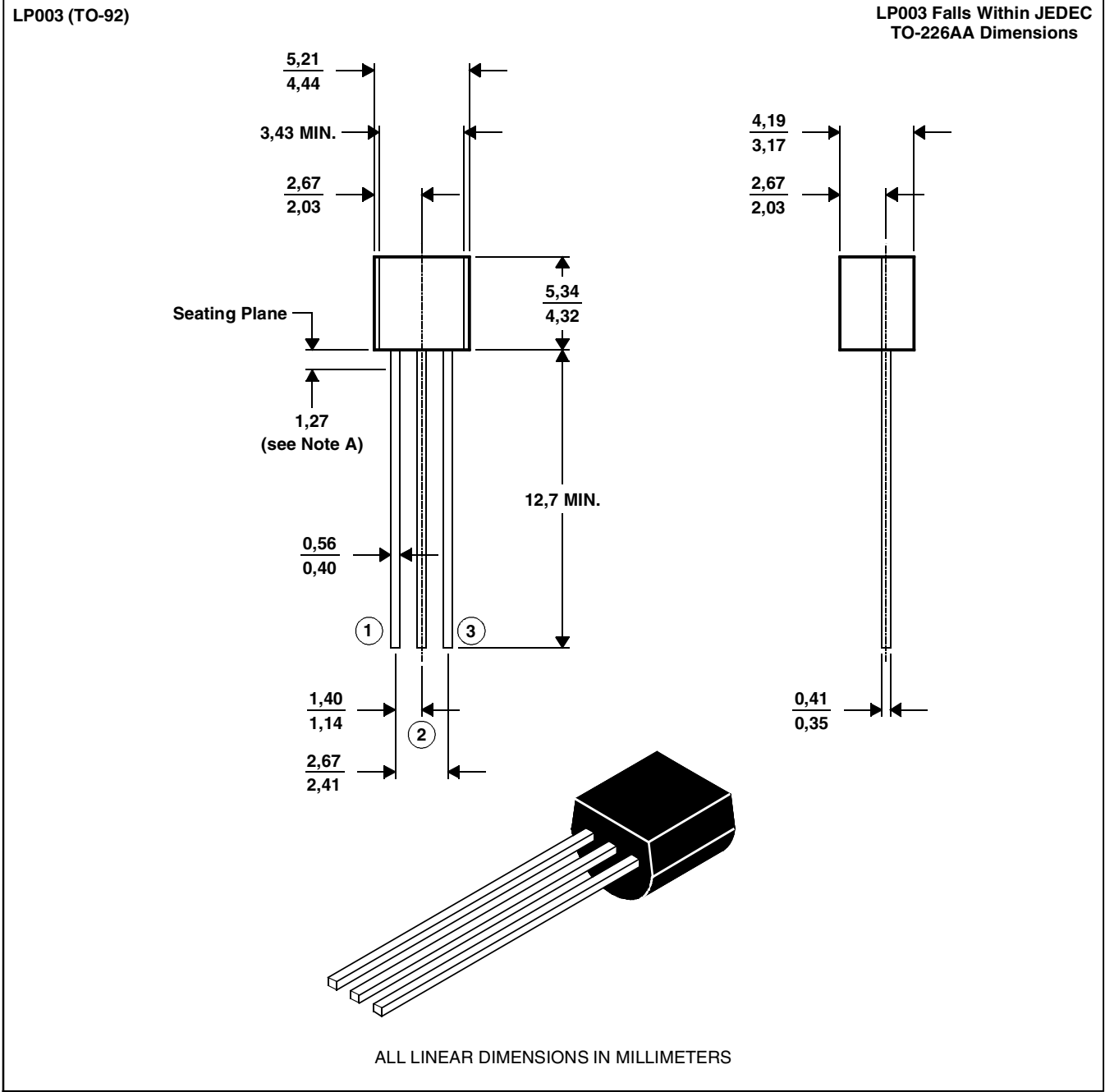


MECHANICAL DATA

LP003 (TO-92)

3-pin cylindrical plastic package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.



NOTE A: Lead dimensions are not controlled in this area.

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## MECHANICAL DATA

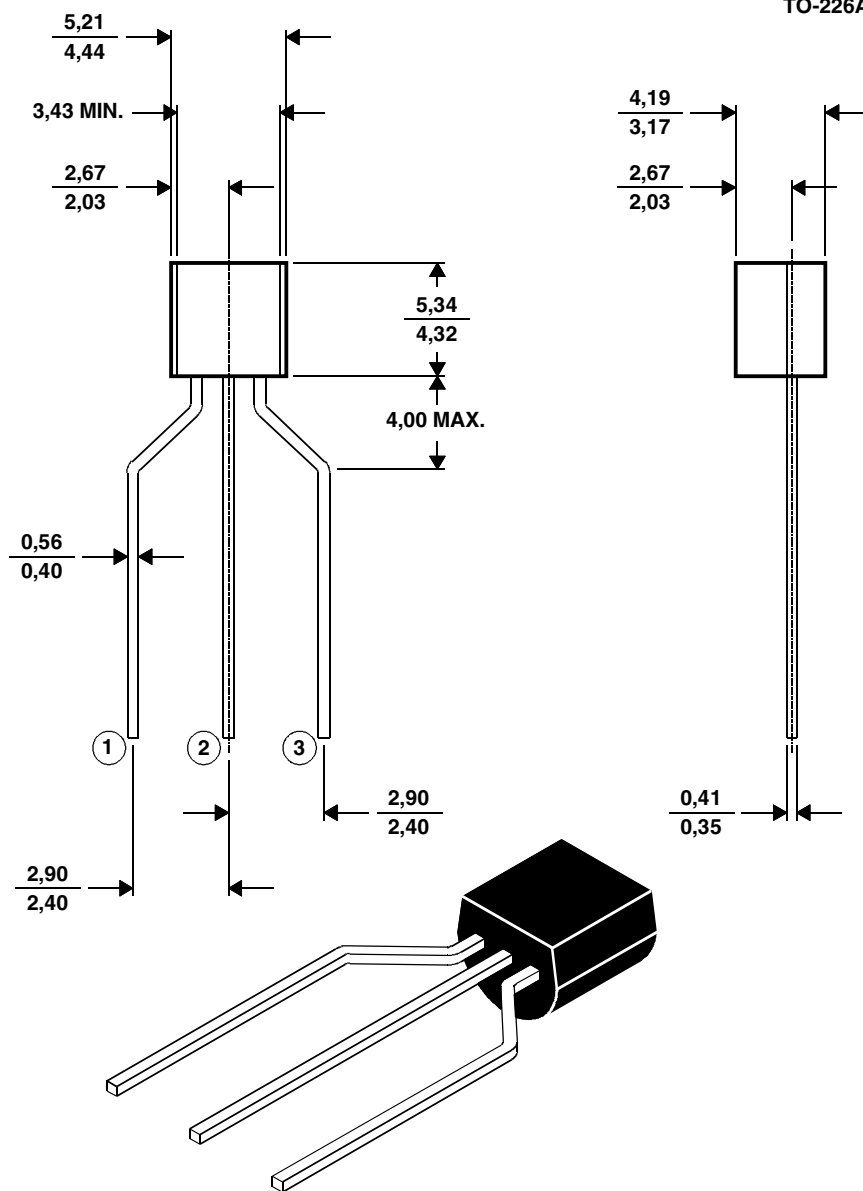
### LP003 (TO-92)

#### 3-pin cylindrical plastic package

This single-in-line package consists of a circuit mounted on a lead frame and encapsulated within a plastic compound. The compound will withstand soldering temperature with no deformation, and circuit performance characteristics will remain stable when operated in high humidity conditions. Leads require no additional cleaning or processing when used in soldered assembly.

LP003 (TO-92) - Formed Leads Version

LP003 Falls Within JEDEC  
TO-226AA Dimensions



ALL LINEAR DIMENSIONS IN MILLIMETERS

MDXXAR

## PRODUCT INFORMATION

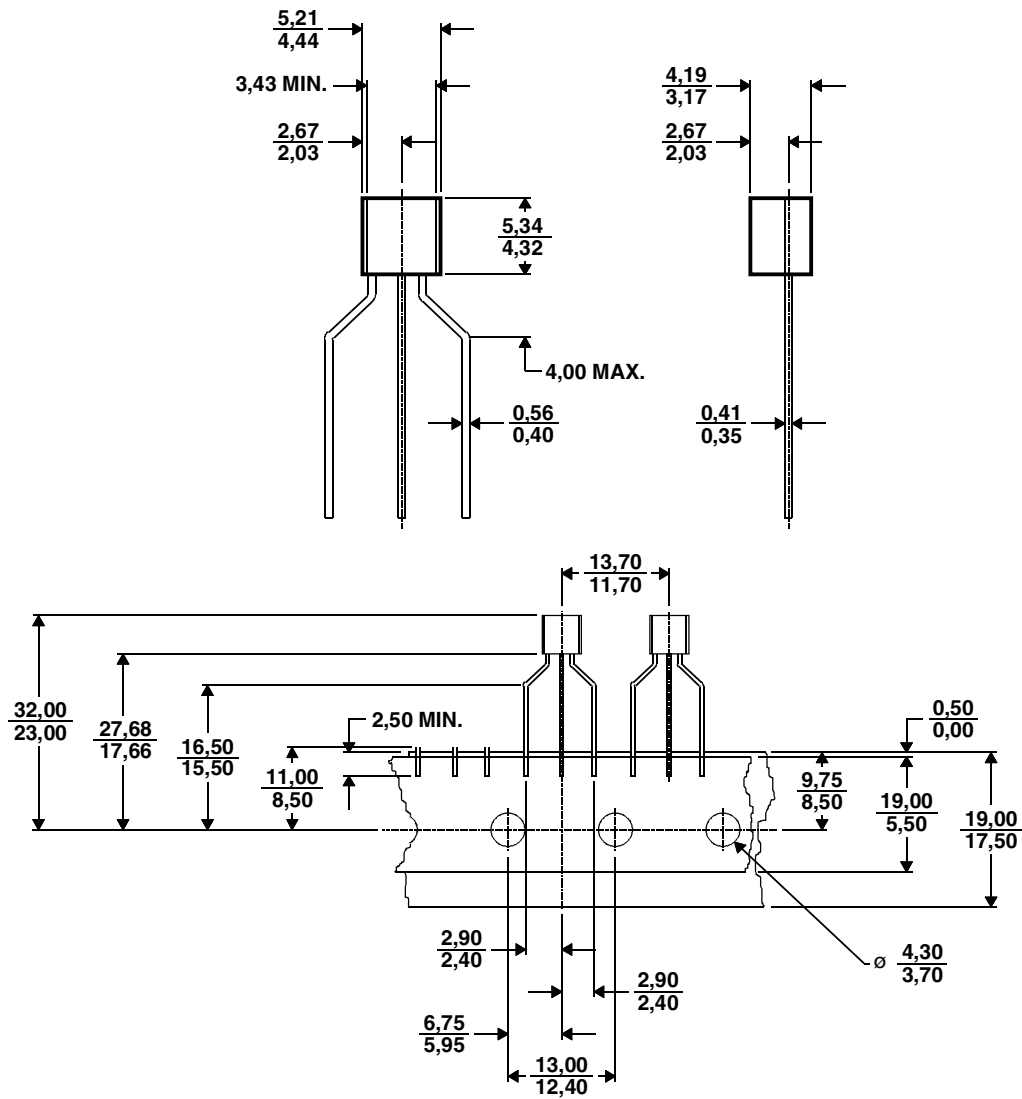
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**MECHANICAL DATA**

**LPR**

**tape dimensions**

LP Package (TO-92) Tape (Formed Lead Version)



ALL LINEAR DIMENSIONS IN MILLIMETERS

MDXXAS

**PRODUCT INFORMATION**

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