

# TICP107 SERIES SILICON CONTROLLED RECTIFIERS

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JANUARY 1999 - REVISED JUNE 2000

- 1 A Continuous On-State Current
- 15 A Surge-Current
- Glass Passivated Wafer
- 400 V to 600 V Off-State Voltage
- $I_{GT}$  50  $\mu$ A min, 200  $\mu$ A max
- $di/dt$  100A/ $\mu$ s
- Package Options

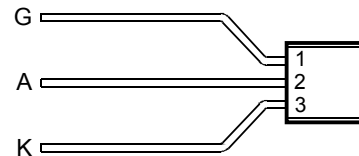
PACKAGE	PACKING	PART # SUFFIX
LP	Bulk	(None)
LP with fomed leads	Tape and Reel	R

LP PACKAGE  
(TOP VIEW)



MDC1AA

LP PACKAGE  
WITH FORMED LEADS  
(TOP VIEW)



MDC1AB

## absolute maximum ratings over operating junction temperature (unless otherwise noted)

RATING		SYMBOL	VALUE	UNIT
Repetitive peak off-state voltage (see Note 1)	TICP107D	$V_{DRM}$	400	V
	TICP107M		600	
Repetitive peak reverse voltage	TICP107D	$V_{RRM}$	400	V
	TICP107M		600	
Continuous on-state current at (or below) 25°C ambient temperature (see Note 2)		$I_{T(RMS)}$	1	A
Surge on-state current at (or below) 25°C ambient temperature (see Note 3)		$I_{TSM}$	15	A
Critical rate of rise of on-state current at 110°C (see Note 4)		$di/dt$	100	A/ $\mu$ s
Peak positive gate current (pulse width $\leq$ 300 $\mu$ s)		$I_{GM}$	0.2	A
Junction temperature range		$T_J$	-40 to +110	°C
Storage temperature range		$T_{stg}$	-40 to +125	°C
Lead temperature 3.2 mm from case for 10 seconds		$T_L$	230	°C

- NOTES: 1. These values apply when the gate-cathode resistance  $R_{GK} = 1$  k $\Omega$ .  
 2. These values apply for continuous dc operation with resistive load.  
 3. This value applies for one 50 Hz half-sine-wave when the device is operating at (or below) the rated value of peak reverse voltage and on-state current. Surge may be repeated after the device has returned to original thermal equilibrium.  
 4. Rate of rise of on-state current after triggering with  $I_G = 10$ mA,  $di_G/dt = 1$ A/ $\mu$ s.

## PRODUCT INFORMATION

Information is current as of publication date. Products conform to specifications in accordance with the terms of Power Innovations standard warranty. Production processing does not necessarily include testing of all parameters.



# TICP107 SERIES

## SILICON CONTROLLED RECTIFIERS

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### electrical characteristics at 25°C ambient temperature (unless otherwise noted)

PARAMETER		TEST CONDITIONS			MIN	TYP	MAX	UNIT
$I_{DRM}$	Repetitive peak off-state current	$V_D = \text{rated } V_{DRM}$	$R_{GK} = 1 \text{ k}\Omega$				20	$\mu\text{A}$
$I_{RRM}$	Repetitive peak reverse current	$V_R = \text{rated } V_{RRM}$	$I_G = 0$				200	$\mu\text{A}$
$I_{GT}$	Gate trigger current	$V_{AA} = 12 \text{ V}$	$R_L = 100 \Omega$	$t_{p(g)} \geq 20 \mu\text{s}$	50		200	$\mu\text{A}$
$V_{GT}$	Gate trigger voltage	$V_{AA} = 12 \text{ V}$	$R_L = 100 \Omega$	$t_{p(g)} \geq 20 \mu\text{s}$	0.4		1	V
$I_H$	Holding current	$V_{AA} = 12 \text{ V}$	Initiating $I_T = 10 \text{ mA}$				2	mA
$V_T$	On-state voltage	$I_T = 2 \text{ A}$	(see Note 5)				1.4	V

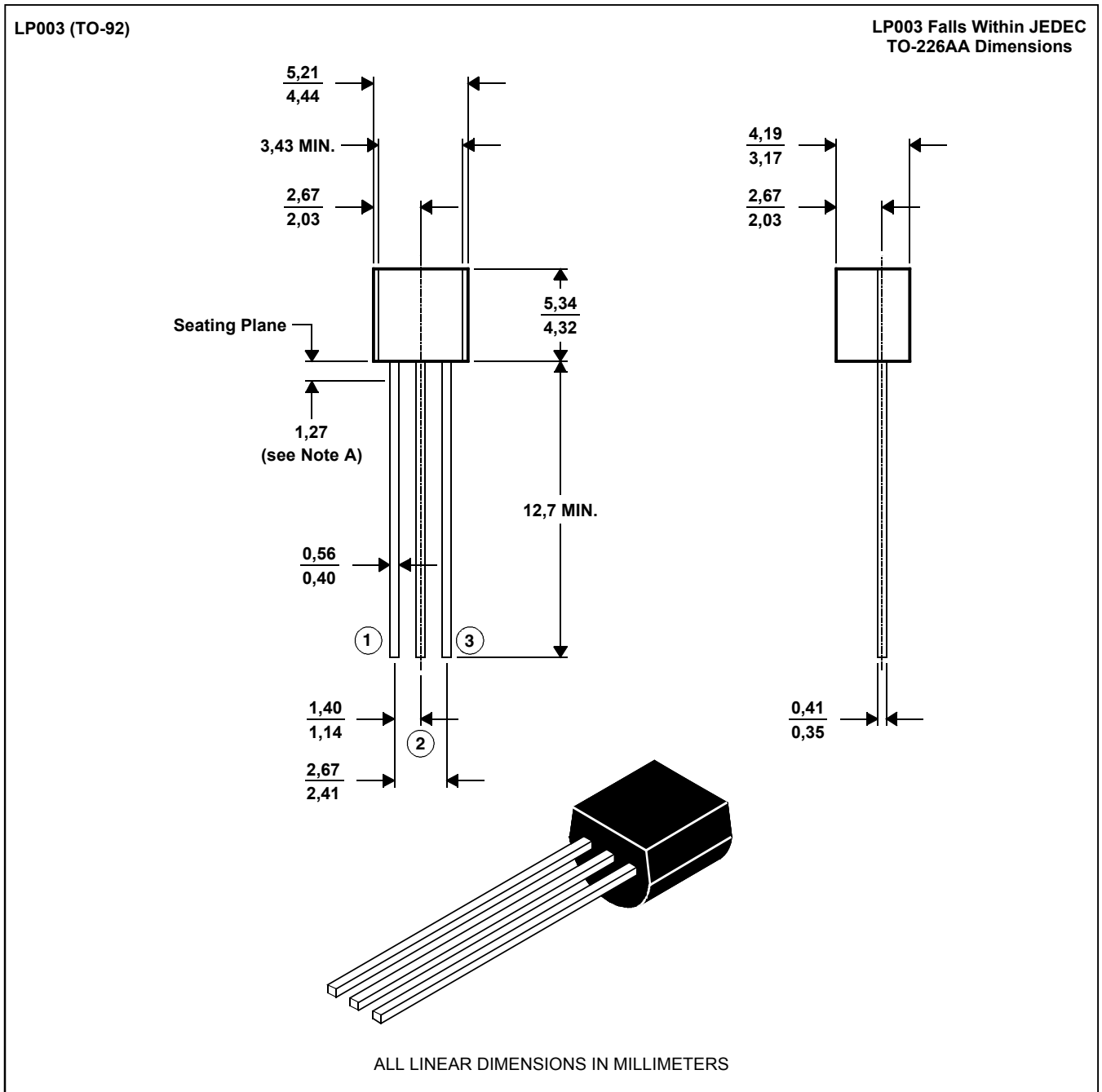
NOTE 5: This parameter must be measured using pulse techniques,  $t_p = 1 \text{ ms}$ , duty cycle  $\leq 2 \%$ . Voltage sensing-contacts, separate from the current carrying contacts, are located within 3.2 mm from the device body.

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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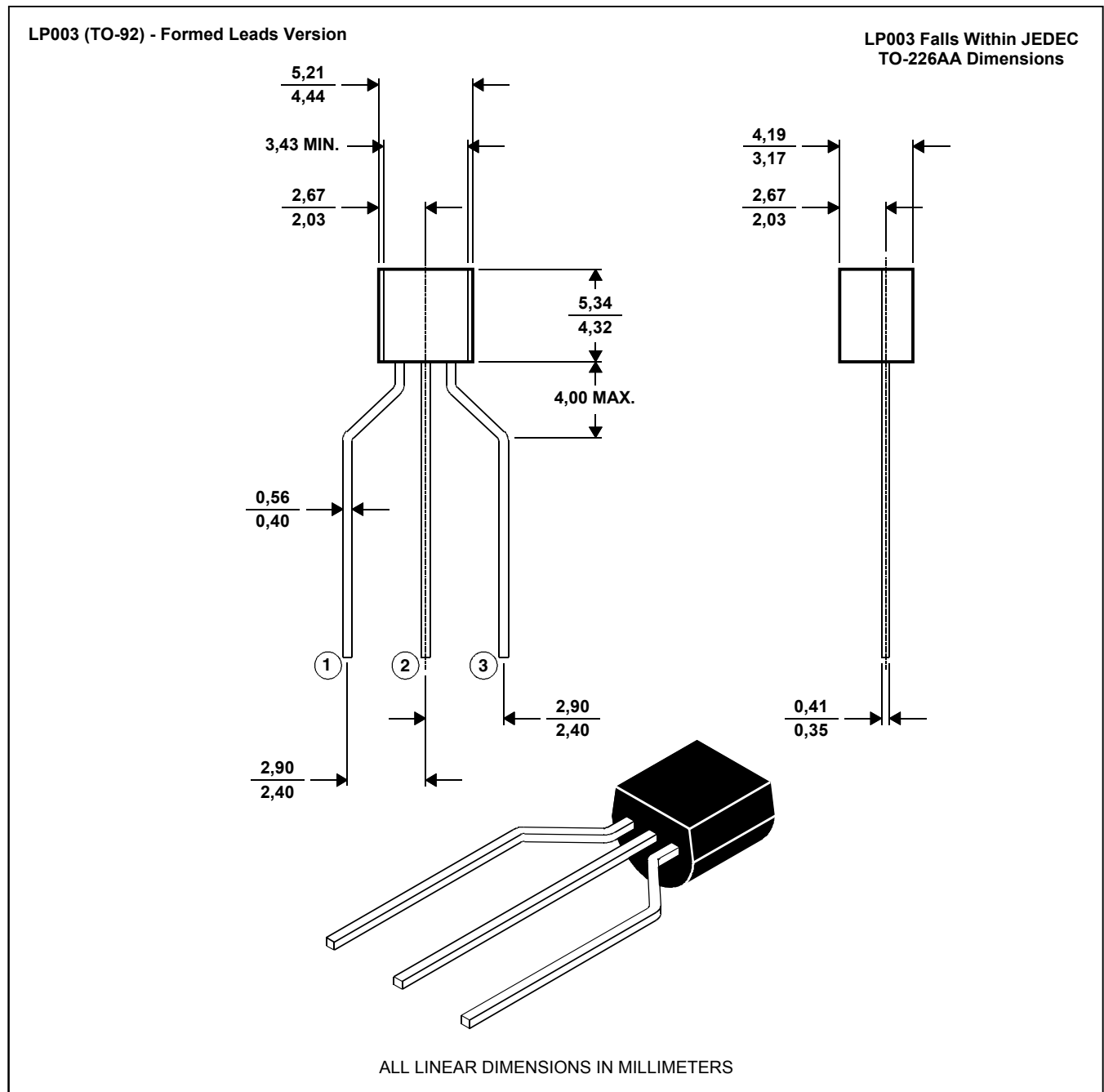
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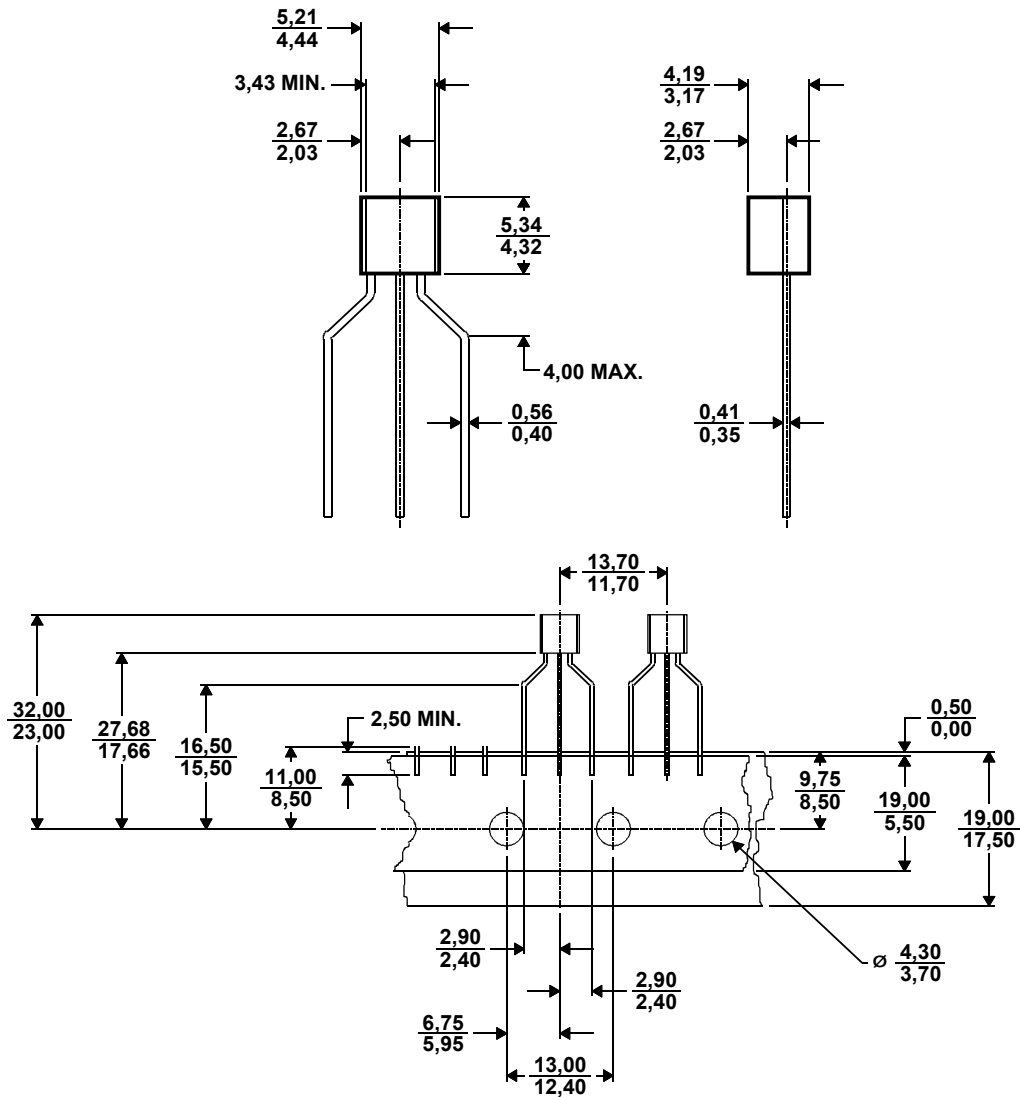
MDXXAR

## PRODUCT INFORMATION

MECHANICAL DATA

LPR  
tape dimensions

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



ALL LINEAR DIMENSIONS IN MILLIMETERS

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**PRODUCT INFORMATION**