NPN General-Purpose Amplifier

MPSA05

1. Emitter
2. Base
3. Collector

TO−92−3
CASE 135AR
Bent Lead
Tape & Reel

Features

- This Device is Designed for General−Purpose Amplifier Applications at Collector Currents to 300 mA
- These Devices are Pb−Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CEO}	Collector−Emitter Voltage	60	V
V_{CBO}	Collector−Base Voltage	60	V
V_{EBO}	Emitter−Base Voltage	4.0	V
I_C	Collector Current − Continuous	500	mA
T_J , T_{STG}	Junction and Storage Temperature	−55 to +150	°C

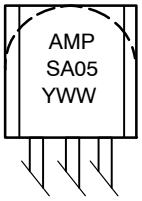
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation	625	mW
	Derate Above 25°C	5.0	mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction−to−Case	83.3	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	200	°C/W

MARKING DIAGRAM



A = Assembly Location
MPSA05 = Specific Device Code
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping†
MPSA05RA	TO−92 3L	2000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$V_{(BR)CEO}$	Collector−Emitter Breakdown Voltage (Note 1)	I_C = 1 mA, I_B = 0	60	−	V
$V_{(BR)EBO}$	Emitter−Base Breakdown Voltage	I_E = 100 μA, I_C = 0	4	−	V
I_{CEO}	Collector Cut−Off Current	V_{CE} = 60 V, I_B = 0	−	0.1	μA
I_{CBO}	Collector Cut−Off Current	V_{CB} = 60 V, I_E = 0	−	0.1	μA
h_{FE}	DC Current Gain	I_C = 10 mA, V_{CE} = 1.0 V	100	−	
		I_C = 100 mA, V_{CE} = 1.0 V	100	−	
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 100 mA, I_B = 10 mA	−	0.25	V
V_{BE}(on)	Base−Emitter On Voltage	I_C = 100 mA, V_{CE} = 1.0 V	−	1.2	V
f_T	Current Gain − Bandwidth Product	I_C = 10 mA, V_{CE} = 2 V, f = 100 MHz	100	−	MHz

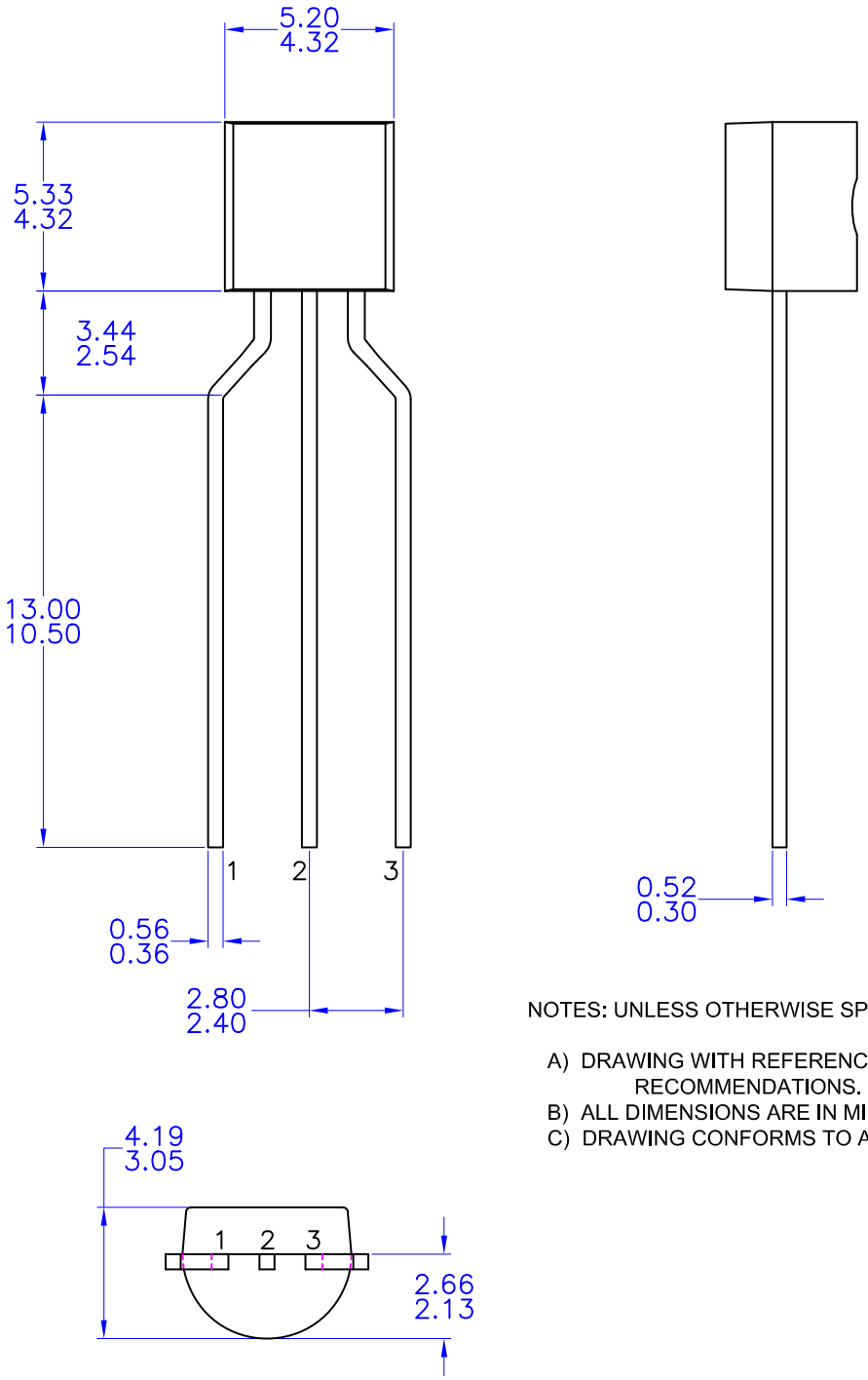
1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2%.

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

TO−92 3 4.83x4.76 LEADFORMED
CASE 135AR
ISSUE O

DATE 30 SEP 2016



NOTES: UNLESS OTHERWISE SPECIFIED

A) DRAWING WITH REFERENCE TO JEDEC TO-92 RECOMMENDATIONS.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) DRAWING CONFORMS TO ASME Y14.5M-1994

DOCUMENT NUMBER:	**98AON13879G**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	**TO−92 3 4.83X4.76 LEADFORMED**	**PAGE 1 OF 1**

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

onsemi Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

◊